Supplement
dated August 16, 2017

to

Official Statement
dated August 9, 2017

relating to

$273,140,000
CITY OF PHILADELPHIA, PENNSYLVANIA
GAS WORKS REVENUE BONDS
FIFTEENTH SERIES
(1998 GENERAL ORDINANCE)

Introduction

The Official Statement for the above-captioned bonds is dated August 9, 2017 (the "Official Statement"). The City of Philadelphia (the "City") has prepared this Supplement dated August 16, 2017, to the Official Statement (the "Supplement") to provide updates to certain information included in the Official Statement, as well as to describe certain events that have occurred since the date thereof. None of information provided or the events described herein relate to the Philadelphia Gas Works.

Other than with respect to the information provided and the events described herein, this Supplement is qualified by reference to the Official Statement, including the Appendices thereto. Capitalized terms used herein and not otherwise defined have the meanings given to such terms in the Official Statement.

Update on Labor Agreements

In the Twenty-Sixth Five-Year Plan, the City included a $200 million Labor Reserve for potential costs of anticipated new labor agreements with FOP Lodge No. 5, IAFF Local 22, and AFSCME DC 47, the existing contracts for which expired on June 30, 2017. See APPENDIX C – "DISCUSSION OF FINANCIAL OPERATIONS – Current Financial Information – *Fiscal Year 2018 Adopted Budget and Twenty-Sixth Five-Year Plan*" in the Official Statement.

On August 15, 2017, a labor arbitration panel awarded FOP Lodge No. 5 a new three-year contract reflecting annual raises of approximately 3%, resulting in a cost to the City of approximately $245 million over the next five years. As set forth in Tables 1 and 2 in APPENDIX C, at footnotes 16 and 10, respectively, the City had included $20 million of the Labor Reserve in the Fiscal Year 2018 Adopted Budget. In addition, the City included a Federal Funding Reserve of $50.9 million and projected a year-end General Fund balance of approximately $75.5 million for Fiscal Year 2018.

The City is in the process of determining what adjustments it may make to the Fiscal Year 2018 Adopted Budget and the Twenty-Sixth Five-Year Plan to reflect the new labor contract. Once the City has made such determination, the City may amend the Twenty-Sixth Five-Year Plan and resubmit such revised plan to PICA for approval. For Fiscal Year 2018, the City has preliminarily determined that the impact of this new labor contract is an additional cost of approximately $18.2 million.

Quarterly City Manager's Report

On August 15, 2017, the City released its Quarterly City Manager's Report for the period ending June 30, 2017 (the "Fourth Quarter QCMR"). The Fourth Quarter QCMR does not modify the Fiscal Year 2017 Current Estimate as set forth in Tables 1 and 2 in APPENDIX C. The new labor agreement described above takes effect in Fiscal Year 2018 and is not part of the information included in the Fourth Quarter QCMR.

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NEW ISSUE BOOK-ENTRY ONLY

RATINGS: Moody's: "A3"
S&P: "A"
Fitch: "BBB+"
See "Ratings" herein

In the opinion of Co-Bond Counsel, under existing statutes, regulations, rulings and court decisions, interest on the Bonds will not be includible in the gross income of the holders thereof for federal income tax purposes, assuming continuing compliance by the City with the requirements of the Internal Revenue Code of 1986, as amended. Interest on the Bonds will not be a specific preference item for purposes of computing the federal alternative minimum tax ("AMT"); however, interest on the Bonds held by corporations is included in the computation of "adjusted current earnings," a portion of which is taken into account in determining the AMT imposed on corporations. Under the laws of the Commonwealth of Pennsylvania, as enacted and construed on the date hereof, interest on the Bonds is exempt from Pennsylvania personal income tax and Pennsylvania corporate net income tax and the Bonds are exempt from personal property taxes in Pennsylvania. See "TAX MATTERS" herein.

$273,140,000
CITY OF PHILADELPHIA, PENNSYLVANIA
GAS WORKS REVENUE BONDS
FIFTEENTH SERIES
(1998 GENERAL ORDINANCE)

Dated: Date of Delivery **Due: August 1, as shown on the inside cover page**

Defined Terms All capitalized terms that are not otherwise defined on this cover page have the meanings provided to such terms in this Official Statement.

The Bonds The City of Philadelphia (the "City") is issuing the Gas Works Revenue Bonds, Fifteenth Series (the "Bonds"). The Bonds will be issued in denominations of $5,000 and integral multiples thereof.

Purpose The proceeds of the Bonds, together with other available moneys, will be used to (i) finance a portion of Philadelphia Gas Works' ("PGW") ongoing Capital Improvement Program, (ii) redeem the City's outstanding Gas Works Revenue Capital Project Commercial Paper Notes, (iii) refund a portion of certain bonds currently outstanding under the General Gas Works Revenue Bond Ordinance of 1998 (the "1998 General Ordinance"), (iv) make a deposit to the Sinking Fund Reserve held under the 1998 General Ordinance, and (v) pay the costs of issuing the Bonds. See "PLAN OF FINANCE AND ESTIMATED SOURCES AND USES OF FUNDS" herein.

Payment and Security The following is qualified in all respects by the information in this Official Statement under the caption "SECURITY AND SOURCES OF PAYMENT FOR THE 1998 ORDINANCE BONDS" and the documents referenced under such caption.

The Bonds are being issued as Senior 1998 Ordinance Bonds on a parity with all other Senior 1998 Ordinance Bonds issued and Outstanding under the 1998 General Ordinance. The Bonds are secured by and payable by the City solely from the Gas Works Revenues and the Sinking Fund Reserve.

The Bonds are special obligations of the City payable solely from the sources described herein and neither the taxing power nor the general revenues of the City are pledged for the payment of the principal of, premium, if any, or interest on the Bonds, nor are the Bonds a general obligation of the City. The Bonds do not constitute debt of the City within the meaning of the Constitution of the Commonwealth of Pennsylvania.

Redemption The Bonds are subject to optional and mandatory redemption prior to maturity. See "DESCRIPTION OF THE BONDS" herein.

Additional Bonds The City is authorized to issue additional bonds under the 1998 General Ordinance under the circumstances and upon satisfaction of certain conditions established in the 1998 General Ordinance, as described herein. See "SECURITY AND SOURCES OF PAYMENT FOR THE 1998 ORDINANCE BONDS – Authorized Additional 1998 Ordinance Bonds" herein.

Interest Payment Dates Interest on the Bonds is payable semiannually on each February 1 and August 1, commencing on February 1, 2018.

Tax Status For information on certain tax matters relating to the Bonds, see the italicized language at the top of this cover page and "TAX MATTERS" herein.

Delivery Date It is expected that the Bonds will be available for delivery to DTC on or about August 16, 2017.

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

The Bonds are offered when, as and if issued and accepted by the Underwriters, subject to the prior sale, withdrawal, or modification of the offer without notice, and subject to the approval as to the legality of the issuance of the Bonds by Eckert Seamans Cherin & Mellott, LLC and Andre C. Dasent, P.C., Co-Bond Counsel, both of Philadelphia, Pennsylvania. Certain legal matters will be passed upon for the Underwriters by Greenberg Traurig LLP, of Philadelphia, Pennsylvania, Counsel to the Underwriters. Certain legal matters will be passed upon for the City by the City of Philadelphia Law Department. Certain legal matters will be passed upon for Philadelphia Gas Works by the Office of General Counsel of the Philadelphia Gas Works and by Eckert Seamans Cherin & Mellott, LLC, of Harrisburg, Pennsylvania. Cozen O'Connor and Ahmad Zaffarese LLC, Co-Disclosure Counsel to the City for PGW, both of Philadelphia, Pennsylvania, will each deliver an opinion to the City and the Underwriters regarding certain matters related to PGW. Hawkins Delafield & Wood LLP, of Washington, D.C., as Disclosure Counsel to the City, will deliver an opinion to the City and the Underwriters regarding certain matters relating to the information contained in APPENDIX C and APPENDIX D.

Morgan Stanley **Loop Capital Markets**

BofA Merrill Lynch **PNC Capital Markets LLC** **The Williams Capital Group, L.P.** **Raymond James** **Piper Jaffray**

Dated: August 9, 2017

MATURITY SCHEDULE
$273,140,000
CITY OF PHILADELPHIA, PENNSYLVANIA
GAS WORKS REVENUE BONDS
FIFTEENTH SERIES
(1998 GENERAL ORDINANCE)

Due (August 1)	Amount	Rate	Price	Yield	CUSIP No.†
2018	$4,765,000	2.00%	101.037	0.91%	71783MAC9
2019	8,495,000	3.00	103.789	1.04	71783MAD7
2020	4,445,000	4.00	108.113	1.20	71783MAE5
2021	4,625,000	5.00	114.063	1.34	71783MAF2
2022	4,855,000	5.00	116.663	1.50	71783MAG0
2023	5,100,000	5.00	118.685	1.69	71783MAH8
2024	5,350,000	5.00	120.260	1.88	71783MAJ4
2025	5,620,000	5.00	121.395	2.07	71783MAK1
2026	5,905,000	5.00	122.288	2.24	71783MAL9
2027	6,195,000	5.00	122.708	2.42	71783MAM7
2028	7,775,000	5.00	121.425*	2.55*	71783MAN5
2029	8,240,000	5.00	120.352*	2.66*	71783MAP0
2030	7,175,000	5.00	119.290*	2.77*	71783MAQ8
2031	7,530,000	5.00	118.525*	2.85*	71783MAR6
2032	7,910,000	5.00	117.860*	2.92*	71783MAS4
2033	8,300,000	5.00	117.293*	2.98*	71783MAT2
2034	8,715,000	5.00	116.824*	3.03*	71783MAU9
2035	9,150,000	5.00	116.543*	3.06*	71783MAV7
2036	9,610,000	5.00	116.263*	3.09*	71783MAW5
2037	10,095,000	5.00	115.984*	3.12*	71783MAX3

$58,555,000 5.00% Term Bonds due August 1, 2042, Yield: 3.24%*, Price: 114.876*, CUSIP No.† 71783MAY1
$74,730,000 5.00% Term Bonds due August 1, 2047, Yield: 3.30%*, Price: 114.327*, CUSIP No.† 71783MAZ8

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* Price and yield calculated to the first optional call date of August 1, 2027 at par.

† CUSIP is a registered trademark of American Bankers Association (the "ABA"). CUSIP data is provided by CUSIP Global Services, which is managed on behalf of the ABA by S&P Global Market Intelligence, a part of S&P Global Inc. The CUSIP numbers listed above are being provided solely for the convenience of Bondholders of the Bonds only at the time of original issuance of the Bonds and the City, the Philadelphia Gas Works and the Underwriters do not make any representation with respect to such CUSIP numbers or undertake any responsibility for their accuracy now or at any time in the future. The CUSIP number for a specific maturity is subject to being changed after the issuance of such Bonds as a result of various subsequent actions including, but not limited to, a refunding in whole or in part of such maturity or as a result of the procurement of secondary market portfolio insurance or other similar enhancement by investors that is applicable to all or a portion of such maturity of the Bonds.

CITY OF PHILADELPHIA, PENNSYLVANIA

MAYOR
HONORABLE JAMES F. KENNEY

MAYOR'S CHIEF OF STAFF
Jane Slusser

MAYOR'S CABINET

Michael DiBerardinis....Managing Director
Rob Dubow....Director of Finance
Sozi Pedro Tulante, Esq....City Solicitor
Nina Ahmad....Deputy Mayor for Public Engagement
Nolan Atkinson....Chief Diversity & Inclusion Officer
James Engler....Deputy Mayor for Policy & Legislation
Harold Epps....Commerce Director
Anne Fadullon....Director of Planning & Development
Otis Hackney....Chief Education Officer
Sheila Hess....City Representative
Ellen Kaplan....Chief Integrity Officer
Amy Kurland....Inspector General
Richard Lazer....Deputy Mayor for Labor Relations
Deborah Mahler....Deputy Mayor for Intergovernmental Affairs
Christine Derenick-Lopez....Chief Administrative Officer

City Treasurer
Rasheia Johnson

PHILADELPHIA GAS WORKS
800 W. Montgomery Avenue
Philadelphia, Pennsylvania 19122

Craig E. White....President and Chief Executive Officer
Douglas A. Moser....Executive Vice President and Acting Chief Operating Officer
Joseph F. Golden, Jr....Executive Vice President and Acting Chief Financial Officer
Charles J. Grant....SVP, HR, Labor Relations, Corporate Communication and Security
Raquel N. Guzmán, Esq....Vice President, Legal and General Counsel
Raymond M. Snyder, P.E....Senior Vice President – Gas Management
Gregory N. Stunder, Esq....Vice President, Regulatory and Legislative Officer
Eloise N. Young....Senior Vice President, Strategic Planning and Information Services

CITY CONTROLLER
Alan L. Butkovitz

CO-FINANCIAL ADVISORS
PFM Financial Advisors LLC
Phoenix Capital Partners, LLP

FISCAL AGENT
U.S. Bank National Association

No dealer, broker, salesperson or other person has been authorized by the City, the Philadelphia Gas Works ("PGW") or the Underwriters to give any information or to make representations, other than as contained in this Official Statement, and if given or made, such other information or representations must not be relied upon as having been authorized by the City, PGW or the Underwriters. 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.

The information set forth herein has been furnished by the City and PGW and includes information obtained from other sources, all of which are believed to be reliable. The information and expressions of opinion herein are subject to change without notice and neither the delivery of this Official Statement nor any of the Bonds shall, under any circumstances, create any implication that there has been no change in the affairs of PGW or the City since the date hereof. Such information and expressions of opinion are made for the purpose of providing information to prospective investors and are not to be used for any other purpose or relied on by any other party.

This Official Statement is submitted in connection with the sale of the Bonds described herein and may not be reproduced or used, in whole or in part, for any other purpose. This Official Statement is not to be construed as a contract or agreement among the City, PGW, the Underwriters and the purchasers or owners of any Bonds. This Official Statement is being provided to prospective purchasers either in bound printed form ("Original Bound Format") or in electronic format on the following websites: www.mcelweequinn.com and www.emma.msrb.org. This Official Statement may be relied upon only if it is in its Original Bound Format or if it is printed in full directly from such websites.

The order and placement of materials in this Official Statement, including the Appendices, are not to be deemed a determination of relevance, materiality or importance, and this Official Statement, including the cover page, the inside cover page and the Appendices, must be considered in its entirety. The captions and headings in this Official Statement are for convenience only and in no way define, limit or describe the scope or intent, or affect the meaning or construction, of any provisions or sections of this Official Statement. The offering of the Bonds is made only by means of this entire Official Statement.

The statements contained in this Official Statement, including in the Appendices, and in any other information provided by PGW and the City and other parties to the transactions described herein that are not purely historical are forward-looking statements. Such forward-looking statements can be identified, in some cases, by terminology such as "may," "will," "should," "expects," "intends," "plans," "anticipates," "believes," "estimates," "predicts," "potential," "illustrate," "example," and "continue," or the singular, plural, negative or other derivations of these or other comparable terms. Readers should not place undue reliance on forward-looking statements. All forward-looking statements included in this Official Statement are based on information available to such parties on the date hereof, and neither PGW nor the City assumes any obligation to update any such forward-looking statements. The forward-looking statements included herein are necessarily based on various assumptions and estimates and are inherently subject to various risks and uncertainties, including, but not limited to, risks and uncertainties relating to the possible invalidity of the underlying assumptions and estimates and possible changes or developments in various important factors. Accordingly, actual results may vary from the projections, forecasts and estimates contained in this Official Statement and such variations may be material, which could affect the ability of the City to fulfill some or all of the obligations under the Bonds.

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.

In connection with the offering of the Bonds, the Underwriters may overallot or effect transactions which stabilize or maintain the market price of the Bonds at levels above those which might otherwise prevail in the open market. Such stabilization, if commenced, may be discontinued at any time.

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. The Bonds have not been registered with the Securities and Exchange Commission under the Securities Act of 1933, as amended, in reliance upon the exemption contained in Section 3(a)(2) of such act.

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OFFICIAL STATEMENT
$273,140,000
CITY OF PHILADELPHIA, PENNSYLVANIA
GAS WORKS REVENUE BONDS
FIFTEENTH SERIES
(1998 GENERAL ORDINANCE)

INTRODUCTION

This introduction is intended to provide an overview of matters that are described in more detail in this Official Statement, and as such is qualified by reference to the entire Official Statement. The Official Statement includes the cover page, the inside cover page, the pages prior to and including the Table of Contents, this introduction, and all appendices to the Official Statement. The definitions of certain capitalized terms appear in APPENDIX E – "SUMMARY OF THE 1998 GENERAL ORDINANCE." Capitalized terms not otherwise defined shall have the respective meanings set forth in the 1998 General Ordinance.

General

The City of Philadelphia, Pennsylvania (the "City") is issuing the City of Philadelphia, Pennsylvania Gas Works Revenue Bonds, Fifteenth Series (1998 General Ordinance) (the "Bonds"), which are special obligations of the City. This Official Statement describes the Bonds, the purposes for which they are being issued, the security and sources of payment of the Bonds, and other related matters.

Purpose; Use of Proceeds

The proceeds of the Bonds will be used to (i) finance a portion of PGW's ongoing Capital Improvement Program, (ii) redeem the City's outstanding Gas Works Revenue Capital Project Commercial Paper Notes, the proceeds of which were used for capital projects, (iii) refund all or a portion of the Seventh Series Bonds maturing on October 1 in the years 2018, 2027 and 2028 currently outstanding under the hereinafter defined Original Ordinance (the "Seventh Series Refunded Bonds" or the "Refunded Bonds"), (iv) make a deposit to the Sinking Fund Reserve held under the 1998 General Ordinance (as defined below), and (v) pay the costs of issuing the Bonds. The refunding of the Refunded Bonds will result in debt service savings to the City. See "PLAN OF FINANCE AND ESTIMATED SOURCES AND USES OF FUNDS."

The Bonds

The Bonds will be issued in the aggregate principal amount, the principal amounts per maturity, and at the interest rates, yields and prices shown on the inside cover page. Interest on the Bonds will be payable on each February 1 and August 1, commencing February 1, 2018.

The Bonds are being issued pursuant to: (i) the First Class City Revenue Bond Act of the Commonwealth of Pennsylvania (the "Act"); (ii) the General Gas Works Revenue Bond Ordinance of 1998, as amended and supplemented prior to March 26, 2015 (the "Original Ordinance"); (iii) the Thirteenth Supplemental Ordinance to the General Gas Works Revenue Bond Ordinance of 1998 (the "Thirteenth Supplemental Ordinance"); (iv) the Fourteenth Supplemental Ordinance to the General Gas Works Revenue Bond Ordinance of 1998 (the "Fourteenth Supplemental Ordinance" and, together with the Original Ordinance and the Thirteenth Supplemental Ordinance, the "1998 General Ordinance"); and (v) the Bond Authorization for the Bonds adopted by the Bond Committee of the City (consisting of the Mayor, the City Controller and the City Solicitor and acting by a majority thereof) (the "Bond Committee") (the "Fifteenth Series Bond Authorization").

The Bonds will be issued in book-entry form with no physical distribution of the Bonds being made to the public. The Depository Trust Company ("DTC") will act as securities depository for the Bonds. U.S. Bank National Association has been appointed as Fiscal Agent under the 1998 General Ordinance, and as such will also act as paying agent, registrar, and Sinking Fund Depositary of the Sinking Fund (as defined below).

Security and Sources of Payment

The Bonds will be issued as senior bonds under the 1998 General Ordinance ("Senior 1998 Ordinance Bonds"), and will be secured by a pledge of, lien on, and security interest in all Gas Works Revenues (as defined herein) and the Sinking Fund Reserve. Gas Works Revenues are generally defined in the 1998 General Ordinance to include all operating and non-operating revenues of the Philadelphia Gas Works ("PGW" or the "Gas Works") derived from its activities and assets involved in the supply, manufacture, storage and distribution of gas. See "SECURITY AND SOURCES OF PAYMENT FOR THE 1998 ORDINANCE BONDS" and APPENDIX E – "SUMMARY OF THE 1998 GENERAL ORDINANCE."

The Bonds will be secured on a parity with all other Senior 1998 Ordinance Bonds, including payments (other than termination payments) due on Qualified Swap and Exchange Agreements, as described below under the caption "SECURITY AND SOURCES OF PAYMENT FOR THE 1998 ORDINANCE BONDS." The City is authorized to issue additional 1998 Ordinance Bonds (as defined herein), which may be either on a parity with or subordinate to the Senior 1998 Ordinance Bonds, subject to the satisfaction of certain conditions described below under the caption "SECURITY AND SOURCES OF PAYMENT FOR THE 1998 ORDINANCE BONDS – **Authorized Additional 1998 Ordinance Bonds**" and APPENDIX E – "SUMMARY OF THE 1998 GENERAL ORDINANCE."

Rate Covenant

The City has covenanted in the 1998 General Ordinance that, for so long as any 1998 Ordinance Bonds are outstanding, the City will, at a minimum, impose, charge and collect in each Fiscal Year of PGW such gas rates and charges as shall, together with all other Gas Works Revenues to be received in such Fiscal Year, equal not less than an amount needed to pay, among other costs, the sum of: (i) certain operating expenses of PGW (costs and expenses necessary and appropriate to operate and maintain the Gas Works in good operable condition), and (ii) 150% of debt service on Senior 1998 Ordinance Bonds. See "SECURITY AND SOURCES OF PAYMENT FOR THE 1998 ORDINANCE BONDS – **Rate Covenant and Rate Requirements**" and APPENDIX E – "SUMMARY OF THE 1998 GENERAL ORDINANCE."

Sinking Fund; Sinking Fund Reserve

The Act requires that a bond ordinance authorizing the issuance of bonds must provide for "the establishment and maintenance of a sinking fund." The 1998 General Ordinance establishes a Sinking Fund, which operates as a debt service payment fund. The Sinking Fund is held in the name of the City separate and apart from all other accounts of the City, and the City deposits in the Sinking Fund from Gas Works Revenues the amounts needed to pay when due debt service on Senior 1998 Ordinance Bonds. See the third paragraph under "SECURITY AND SOURCES OF PAYMENT FOR THE 1998 ORDINANCE BONDS – **Gas Works Revenues** – *Order of Application of Gas Works Revenues*" and APPENDIX E – "SUMMARY OF THE 1998 GENERAL ORDINANCE."

The 1998 General Ordinance also establishes a Sinking Fund Reserve as part of the Sinking Fund. The City is required to deposit in the Sinking Fund Reserve an amount sufficient to cause the amount therein to be equal to the Sinking Fund Reserve Requirement. Such deposits can be made from either the proceeds of each series of bonds secured by the Sinking Fund Reserve, available Gas Works Revenues or some combination of both. The Sinking Fund Reserve Requirement is equal to the greatest amount of debt service requirements on bonds secured by the Sinking Fund Reserve in any Fiscal Year. The Sinking Fund Reserve Requirement may also be met by the use of letters of credit or other credit facilities. The Bonds and the other Senior 1998 Ordinance Bonds currently outstanding are secured by the Sinking Fund Reserve. See "SECURITY AND SOURCES OF PAYMENT FOR THE 1998 ORDINANCE BONDS – **Sinking Fund Reserve**" and APPENDIX E – "SUMMARY OF THE 1998 GENERAL ORDINANCE."

Special Obligations

The Bonds are special obligations of the City payable solely from the sources described herein and neither the taxing power nor the general revenues of the City are pledged for the payment of the principal of, premium, if any, or interest on the Bonds, nor are the Bonds a general obligation of the City. The Bonds do not constitute debt of the City within the meaning of the Constitution of the Commonwealth of Pennsylvania (the "Commonwealth").

Philadelphia Gas Works

The information under this caption is derived, in principal part, from the Independent Consultant's Engineering Report, dated July 27, 2017, prepared by Black & Veatch Management Consulting, LLC ("Black & Veatch"), an independent engineer retained by the City to evaluate PGW (the "Independent Consultant's Engineering Report"), which is attached hereto as APPENDIX B, and to which the reader is referred for a more detailed presentation.

PGW is owned by the City and is accounted for in the City's audited financial statements as a component unit of the City. PGW prepares a separate Comprehensive Annual Financial Report that includes annual financial statements audited by an independent auditor and an unaudited statistical section. See "THE PGW CAFR."

PGW is the largest municipally-owned gas utility in the nation, is responsible for the acquisition and storage of natural gas and is the sole distributer of natural gas within the limits of the City. Such limits also define the service area of PGW.

PGW is principally a gas distribution utility, with a distribution system of approximately 3,030 miles of gas mains and 478,267 service lines. In addition, PGW operates facilities for the liquefaction, storage, and vaporization of natural gas to supplement gas supply taken directly from interstate pipeline and storage companies. The principal PGW natural gas supply facilities include nine City gate stations, owned in large part by the interstate natural gas pipeline companies serving PGW, Spectra Energy ("Spectra") and Transcontinental Gas Pipe Line Corporation ("Transco-Williams"), and two liquefied natural gas ("LNG") plants owned by the City and operated by PGW.

PGW's operations are managed by the Philadelphia Facilities Management Corporation ("PFMC"), a Pennsylvania not-for-profit corporation whose Board is appointed by the Mayor. PFMC's responsibilities are set forth in a Management Agreement between the City and PFMC dated December 29, 1972, as subsequently amended ("Management Agreement"), which delegates responsibility for PGW's operation to an executive management team provided by PFMC. Under the Management Agreement, those responsibilities that are not specifically granted to PFMC are the responsibilities of the Philadelphia Gas Commission ("PGC" or the "Gas Commission"), except to the extent preempted by the Pennsylvania Public Utility Commission (the "PUC") pursuant to the Pennsylvania Natural Gas Choice and Competition Act ("Gas Choice Act"). The Gas Choice Act makes PGW subject to regulation by the PUC effective July 1, 2000, and provides that choice among natural gas suppliers will be provided to PGW's customers.

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The following summary chart describes the management and governance of PGW:

Organization	Function
City	• Owns PGW property • City administration reviews certain transactions and processes (chiefly through the Director of Finance) • City Council enacts legislation for the functioning of PGW (e.g., the capital budget, real estate transactions, pension modifications and gas supply contracts)
PGC	• Consists of the City Controller, two members appointed by the City Council and two members appointed by the Mayor • Responsibilities include: • approval of certain executive personnel provided by PFMC • review of gas supply contracts for approval by City Council • approval of PGW's operating budget • review of PGW's capital budgets for approval by City Council • review of real estate transactions for approval by City Council
PFMC	• Incorporated by the City in 1972 for the specific purpose of operating PGW • Governed by a seven member board of directors appointed by the Mayor • Provides executive management for PGW • Directs operation of PGW facilities and operations
PGW	• Manages construction, operation and maintenance of the gas system on a day-to-day basis • PGW executive management is responsible for hiring PGW staff
PUC	• Regulates rates, customer service and safety

Independent Consultant's Engineering Report

The Independent Consultant's Engineering Report makes certain findings relating to the adequacy of Gas Works Revenues to pay debt service on all bonds and notes for which Gas Works Revenues are pledged. That report is attached hereto as APPENDIX B – "INDEPENDENT CONSULTANT'S ENGINEERING REPORT." Also see "INDEPENDENT CONSULTANT'S ENGINEERING REPORT" below.

Certain Terminology

As used in this Official Statement, the terms "gas" and "natural gas" are interchangeable.

The Fiscal Year of PGW begins on September 1 and ends on August 31 of the following calendar year. For example, "Fiscal Year 2017" when used in connection with PGW refers to the Fiscal Year ending August 31, 2017. The City's Fiscal Year begins on July 1 and ends on June 30 of the following calendar year. For example, "Fiscal Year 2017" or "FY2017" when used in connection with the City refers to the fiscal year that ended June 30, 2017.

When referred to individually, each Series of City of Philadelphia, Pennsylvania Gas Works Revenue Bonds (1998 General Ordinance) is referred to by its numerical designation, followed by the words "Series Bonds."

PLAN OF FINANCE AND ESTIMATED SOURCES AND USES OF FUNDS

Plan of Finance

The proceeds of the Bonds will be used to (i) finance a portion of PGW's ongoing Capital Improvement Program, (ii) redeem the City's outstanding Gas Works Revenue Capital Project Commercial Paper Notes, the proceeds of which were used for capital projects, (iii) refund the Refunded Bonds, (iv) make a deposit to the Sinking Fund Reserve held under the 1998 General Ordinance, and (v) pay the costs of issuing the Bonds.

A portion of the proceeds of the Bonds will be (i) deposited in an escrow fund established under an Escrow Deposit Agreement between the City and U.S. Bank National Association, as escrow agent, (ii) invested in open-market United States Treasury securities, and (iii) applied to the payment of the interest on and redemption price of the Refunded Bonds, as they become due and payable, to and including October 1, 2017, the date fixed for the redemption of the Refunded Bonds. See "Verification" herein.

The refunding of the Refunded Bonds will result in debt service savings to the City.

Simultaneously with the issuance of the Bonds, PGW will utilize available moneys to separately defease the October 1, 2017 maturity of the Seventh Series Bonds and the July 1, 2018 maturity of the Tenth Series Bonds (collectively, the "Defeased Bonds").

Estimated Sources and Uses of Funds

The sources and uses of funds are estimated to be as follows:

	Bonds	PGW Moneys	Total
Estimated Sources:			
Principal Amount of the Bonds	$273,140,000.00	$ –	$ 273,140,000.00
Original Issue Premium	42,696,822.50	–	42,696,822.50
PGW Moneys	–	14,526,681.04	14,526,681.04
Total Sources	**$ 315,836,822.50**	**$ 14,526,681.04**	**$ 330,363,503.54**
Estimated Uses:			
Deposit to Capital Improvement Fund	$ 190,000,000.00	$ –	$ 190,000,000.00
Redemption of CP Capital Project Notes	101,000,000.00	–	101,000,000.00
Refunding of Refunded Bonds	7,518,881.18	–	7,518,881.18
Defeasance of Defeased Bonds	–	14,526,681.04	14,526,681.04
Deposit to Sinking Fund Reserve	14,789,900.00	–	14,789,900.00
Costs of Issuance[†]	2,528,041.32	–	2,528,041.32
Total Uses	**$ 315,836,822.50**	**$ 14,526,681.04**	**$ 330,363,503.54**

[†] Includes the fees and expenses of various counsel and the Fiscal Agent, consultant's fees, fees of accountants, fees of financial advisors, verification fees, rating agency fees, printing and publication costs, contingency, Underwriters' discount, and other expenses related to the issuance of the Bonds.

Verification

AMTEC of Avon, Connecticut (the "Verification Agent") will deliver to the City and PGW, on or before the date of the delivery of the Bonds, its report (the "Verification Report") indicating that it has verified the mathematical accuracy of the information provided by the City, PGW, and their representatives with respect to the refunding requirements of the Refunded Bonds. Included within the scope of its engagement will be a verification of (a) the mathematical accuracy of the computations of the adequacy of the cash, without further investment, to be placed in an escrow account to meet the scheduled payment of interest on the Refunded Bonds until redemption and the payment of the redemption price of the Refunded Bonds on the dates fixed for the redemption; and (b) the mathematical accuracy of the computations supporting the conclusion of Co-Bond Counsel that the Bonds are not "arbitrage bonds" under the Internal Revenue Code of 1986, as amended, and the regulations promulgated thereunder.

The verification performed by the Verification Agent will be based solely upon data, information and documents provided to the Verification Agent. The Verification Report will state that the Verification Agent has no obligation to update the Verification Report for events occurring, or data or information coming to their attention, subsequent to the date of the Verification Report.

DESCRIPTION OF THE BONDS

General

The Bonds will be issued in the denominations of $5,000 and integral multiples thereof and will mature on the dates and in the principal amounts, and will bear interest from their date of delivery at the interest rates, all as set forth on the inside cover page of this Official Statement. Interest on the Bonds is payable on February 1 and August 1, commencing February 1, 2018, and is calculated on the basis of a 360-day year of twelve 30-day months.

The Bonds are available only in book-entry form as fully-registered bonds without coupons. When issued, the Bonds will be registered in the name of Cede & Co., as nominee for DTC, to which payments of principal and interest will be made. Purchasers of the Bonds will not receive physical delivery of bond certificates representing their ownership interests during the period during which a nominee of DTC is owner of the Bonds. So long as DTC or its nominee is the registered owner of the Bonds, principal of and interest on the Bonds are payable directly to such nominee for redistribution to Participants and in turn to Beneficial Owners as described herein. For so long as any purchaser is the Beneficial Owner of Bonds, such purchaser must maintain an account with a broker or dealer who is, or acts through, a Participant to receive payment of the principal of and interest on such Bonds. See APPENDIX G – "BOOK-ENTRY ONLY SYSTEM" herein.

Optional Redemption of Certain of the Bonds at Par

The Bonds maturing on or after August 1, 2028 are subject to optional redemption, at the direction of the City, in whole at any time or in part from time to time on or after August 1, 2027, and in any order of maturity as may be designated by the City, at a redemption price equal to 100% of the principal amount of the Bonds so redeemed, plus accrued interest to the redemption date.

Mandatory Redemption

The Bonds maturing on August 1, 2042 and August 1, 2047 are subject to mandatory redemption prior to maturity, in part, by lot, at the times and in the amounts set forth below at a price equal to 100% of the principal amount of such Bonds being redeemed, plus accrued interest to the date of redemption:

Year (August 1)	Principal Amount	Year (August 1)	Principal Amount
2038	$10,600,000	2043	$13,525,000
2039	11,125,000	2044	14,200,000
2040	11,685,000	2045	14,910,000
2041	12,265,000	2046	15,655,000
2042*	12,880,000	2047*	16,440,000

* Maturity

In the event a portion, but not all, of the Bonds maturing on a particular date are to be redeemed pursuant to optional redemption or purchased by the City and presented to the Fiscal Agent for cancellation, then the principal amount of any remaining mandatory sinking fund redemptions or the final maturity applicable to such Bonds shall be reduced (subject to the ability to effect future redemptions of the Bonds in authorized denominations) in such amounts as specified by the City.

Selection of Bonds to be Called for Redemption

During the period when all of the Bonds are registered in the name of a nominee of DTC, if less than all of the Bonds of a maturity are being redeemed, DTC's current practice is to determine by lot the amount of the interest of each Participant (as defined in APPENDIX G – "BOOK-ENTRY ONLY SYSTEM") in such maturity to be redeemed. If the Bonds are not in book-entry form, then, if less than all of the Bonds are to be redeemed, the particular Bonds to be called for redemption will be selected by lot or by such other method as the Fiscal Agent deems fair and appropriate.

Notice of Redemption of Bonds

Notice of redemption of Bonds shall be made not less than thirty (30) days nor more than (60) days before the date fixed for redemption to the applicable Registered Owners appearing on the Bond Register of the Bonds to be redeemed. During the period when all of the Bonds are registered in the name of a nominee of DTC the Fiscal Agent will send all redemption notices to such nominee, and DTC will be responsible for notifying Participants, and Participants and Indirect Participants are responsible for notifying Beneficial Owners. Neither the Fiscal Agent, the City nor PGW is responsible for sending notices to Beneficial Owners or for the consequences of any action or inaction by the City or PGW as a result of the response or failure to respond by DTC or its nominee as Bondowner. ("Indirect Participants" and "Beneficial Owners" are defined in APPENDIX G – "BOOK-ENTRY ONLY SYSTEM.")

If the Bonds are not in book-entry from, notice of any redemption will be mailed, first class postage prepaid, addressed to the registered owners of the Bonds called for redemption at the addresses appearing in the registration books kept by the bond registrar. Not more than sixty (60) days following the applicable redemption date, a further notice will be mailed as described above to the Bondholders of any Bonds called for redemption and not then presented for payment.

Any notice of redemption provided in accordance with the provisions described above shall be conclusively presumed to have been duly given, whether or not such notice is actually received by the Bondholders. No defect in the notice with respect to any Bond (whether in the form of notice or the providing thereof) shall affect the validity of the redemption proceedings for any other Bonds.

A notice with respect to an optional redemption of the Bonds may state that it is conditioned upon the deposit of moneys with the Fiscal Agent on or before the date fixed for redemption and in such event, such notice shall be of no effect unless such moneys are deposited.

SECURITY AND SOURCES OF PAYMENT FOR THE 1998 ORDINANCE BONDS

Pledge of Revenues and Funds

The Bonds and each series of bonds or notes previously issued or to be issued under the 1998 General Ordinance (collectively, "1998 Ordinance Bonds") are special obligations of the City secured by and payable by the City solely from (i) the Gas Works Revenues, and (ii) unless otherwise set forth in the Supplemental Ordinance authorizing such 1998 Ordinance Bonds, the Sinking Fund Reserve. The Bonds and all Outstanding Senior 1998 Ordinance Bonds are secured by the Sinking Fund Reserve. Bonds and notes issued as subordinate bonds under the 1998 General Ordinance ("Subordinate 1998 Ordinance Bonds") are payable from Gas Works Revenues, subordinate to payment of the Bonds and other Senior 1998 Ordinance Bonds. See "– **Gas Works Revenues**" and "– **Sinking Fund Reserve**" below.

The Bonds are special obligations of the City payable solely from the sources described herein and neither the taxing power nor the general revenues of the City are pledged for the payment of the principal of, premium, if any, or interest on the Bonds, nor are the Bonds a general obligation of the City. The Bonds do not constitute debt of the City within the meaning of the Constitution of the Commonwealth.

Outstanding 1998 Ordinance Bonds

Bonds and notes issued under the 1998 General Ordinance may be issued as Senior 1998 Ordinance Bonds or as Subordinate 1998 Ordinance Bonds. As of July 1, 2017, the City has issued fourteen Series of Senior 1998 Ordinance Bonds in an aggregate principal amount of $2,450,755,000, together with an aggregate principal amount of $101,000,000 of Subordinate 1998 Ordinance Bonds in the form of CP Capital Project Notes (as defined below), of which $929,955,000 was Outstanding as of July 1, 2017. Of the 1998 Ordinance Bonds Outstanding as of such date, an aggregate principal amount of $828,955,000 were Senior 1998 Ordinance Bonds and an aggregate principal amount of $101,000,000 were Subordinate 1998 Ordinance Bonds in the form of CP Capital Project Notes, which the City is authorized to issue in a principal amount not to exceed $120,000,000 Outstanding at any time. As of the date of this Official Statement, there are $101,000,000 aggregate principal amount of CP Capital Project Notes Outstanding which will be refunded with a portion of the proceeds of the Bonds. See "– Authorized Additional 1998 Ordinance Bonds" and "Commercial Paper Programs – CP Capital Project Notes" below and "PLAN OF FINANCE AND ESTIMATED SOURCES AND USES OF FUNDS" above. Also see "COMMERCIAL PAPER PROGRAMS – Notes Line of Credit" for information regarding a planned line of credit which PGW expects to obtain to finance a portion of PGW's ongoing Capital Improvement Program to be evidenced by the issuance of CP Capital Project Notes.

Senior 1998 Ordinance Bonds

All Senior 1998 Ordinance Bonds (including the Bonds) are secured on a parity with all other Senior 1998 Ordinance Bonds and the obligations of the City to make, from Gas Works Revenues, payments (other than termination payments) due under any Qualified Swaps and Exchange Agreements related to Senior 1998 Ordinance Bonds. In accordance with the 1998 General Ordinance, Net Operating Expenses then payable are paid from Gas Works Revenues before debt service on Senior 1998 Ordinance Bonds and the other City obligations payable on a parity with Senior 1998 Ordinance Bonds. The Bonds and all other Senior 1998 Ordinance Bonds are senior in right of payment and security to any Subordinate 1998 Ordinance Bonds. See "– **Gas Works Revenues** – *Order of Application of Gas Works Revenues*" below.

Subordinate 1998 Ordinance Bonds

All Subordinate 1998 Ordinance Bonds are subject to the prior right of payment and security of the Senior 1998 Ordinance Bonds (including the Bonds), the other obligations of the City on a parity with Series 1998 Ordinance Bonds and payments to issuers of Credit Facilities related to Senior 1998 Ordinance Bonds. See "*– Senior 1998 Ordinance Bonds*" above and "– **Gas Works Revenues** – *Order of Application of Gas Works*

Revenues" below. Subordinate 1998 Ordinance Bonds (including CP Capital Project Notes) are secured on a parity with all other Subordinate 1998 Ordinance Bonds and certain other obligations of the City. See APPENDIX E – "SUMMARY OF THE 1998 GENERAL ORDINANCE – **Order of Application of Gas Works Revenues**."

Gas Works Revenues

General

The 1998 General Ordinance defines Gas Works Revenues as:

> all operating and non-operating revenues of the Gas Works derived from its activities and assets involved in the supply, manufacture, storage and distribution of gas, including all rents, rates and charges imposed or charged by the City upon the owners or occupants of properties connected to, and upon all users of, gas distributed by the Gas Works and all other revenues derived therefrom and all other income derived by the City from the Gas Works.

Revenues derived from activities unrelated to the supply, manufacture, storage and distribution of gas or assets related thereto are not included in Gas Works Revenues. If PGW receives fair payment for the use of gas related assets and personnel of PGW used in such unrelated activities, such payments are included in Gas Works Revenues.

Gas Works Revenues may be divided into separate components in one or more Supplemental Ordinances and any Series of 1998 Ordinance Bonds issued thereafter may be limited as to source of payment to one or more of such components as provided in the Supplemental Ordinance authorizing the particular Series of 1998 Ordinance Bonds. See "SECURITY AND SOURCES OF PAYMENT FOR THE 1998 ORDINANCE BONDS – **Authorized Additional 1998 Ordinance Bonds**." As of the date of this Official Statement, no portion of the Gas Works Revenues has been divided as described above and all Gas Works Revenues secure and provide payment for all 1998 Ordinance Bonds. Only new sources of Gas Works Revenues may be so divided while the Bonds and all previously issued Series of 1998 Ordinance Bonds remain Outstanding.

Gas Works Revenues do not include any portions of PGW's rents, rates and charges derived from non-performing assets, if any, which are securitized and sold pursuant to the 1998 General Ordinance. PGW currently has no assets designated as "non-performing." See "PERMITTED SECURITIZATION OF REVENUES RELATED TO NON-PERFORMING ASSETS" below.

Order of Application of Gas Works Revenues

Gas Works Revenues are not exclusively available for payment of debt service on Senior 1998 Ordinance Bonds and deposits to the Sinking Fund Reserve. Gas Works Revenues are also the source of payment for PGW's operating costs, debt service on Subordinate 1998 Ordinance Bonds, payments required under Credit Facilities and Qualified Swaps and Exchange Agreements, and certain other obligations of the City related to PGW. For information concerning the City's existing Qualified Swaps and Exchange Agreements and Credit Facilities, see "– Qualified Swaps and Exchange Agreements" and "– Credit Facilities With Respect to 1998 Ordinance Bonds" below. See APPENDIX E – "SUMMARY OF THE 1998 GENERAL ORDINANCE – **Order of Application of Gas Works Revenues**."

The 1998 General Ordinance establishes an order of application of Gas Works Revenues as and when collected in each Fiscal Year as follows: FIRST to Net Operating Expenses then payable; SECOND to debt service on Senior 1998 Ordinance Bonds and payments (other than termination payments) due to the issuers of Qualified Swaps and Exchange Agreements related to Senior 1998 Ordinance Bonds, and THEREAFTER to the other obligations of the City (including, but not limited to, debt service on Subordinate 1998 Ordinance Bonds and the replenishment of the Sinking Fund Reserve) described and in the order set forth in APPENDIX E – "SUMMARY OF THE 1998 GENERAL ORDINANCE – **Order of Application of Gas Works Revenues**."

The City transfers Gas Works Revenues available after the payment of Net Operating Expenses then payable from PGW's operating funds to the Sinking Fund to make payments due on Senior 1998 Ordinance Bonds. The 1998 General Ordinance requires such transfers to be made on or before the day that payments on Senior 1998 Ordinance Bonds are due. The Sinking Fund (including the Sinking Fund Reserve) is held by the Sinking Fund Depositary in the name of the City in an account or accounts separate and apart from all other accounts of the City. U.S. Bank National Association, the Fiscal Agent with respect to the 1998 Ordinance Bonds, also serves as the Sinking Fund Depositary. If the City elects to invest moneys in the Sinking Fund, such investments may be invested and reinvested on a consolidated basis with investments held in the Sinking Fund Reserve. See "– **Sinking Fund Reserve**" and "– **Covenant Against Commingling with Other City Funds"** below and APPENDIX E – "SUMMARY OF THE 1998 GENERAL ORDINANCE – **Sinking Fund**" and "– **Fiscal Agent**."

Any deficiency in the Sinking Fund Reserve shall be replenished with the Gas Works Revenues available after the payment of Net Operating Expenses then payable, debt service on 1998 Ordinance Bonds and the other obligations on a parity with 1998 Ordinance Bonds, payments due to Credit Facility Issuers and any Rebate Amount required to be paid to the United States. See APPENDIX E – "SUMMARY OF THE 1998 GENERAL ORDINANCE – **Order of Application of Gas Works Revenues**." The 1998 General Ordinance provides that any excess moneys (including investment earnings) in the Sinking Fund Reserve, to the extent not required to be retained in the fund or account to which such moneys related, shall be transferred to the operating accounts of PGW to be applied as Gas Works Revenues in accordance with the 1998 General Ordinance.

Net Operating Expenses

Net Operating Expenses are defined in the 1998 General Ordinance as Operating Expenses exclusive of City Charges.

Operating Expenses are defined in the 1998 General Ordinance as all costs and expenses of the Gas Works necessary and appropriate to operate and maintain the Gas Works in good operable condition during each Fiscal Year, and include, without limitation, the manager's fee, salaries and wages, purchases of service 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 Gas Works, which does not have a probable useful life of at least five years, pension and welfare plan and workmen's compensation requirements, provision for claims, refunds and uncollectible receivables and for City Charges, all in accordance with generally accepted municipal accounting principles consistently applied, but shall exclude depreciation and interest and sinking fund charges. The 1998 General Ordinance, however, excludes expenses which are unrelated to the supply, manufacture, storage and distribution of gas or assets related thereto from the definition of Operating Expenses. Gas Works are defined in the 1998 General Ordinance as all property, real and personal, owned by the City and used in the acquisition or manufacture, storage and distribution of natural, liquefied, synthetic or manufactured gas or in the maintenance, management or administration thereof and all activities ancillary and related thereto, and also means, as the context may require, the business entity managed by PFMC.

City Charges

City Charges are defined in the 1998 General Ordinance as the proportionate charges, if any, for services performed for the Gas Works by all officers, departments, boards or commissions of the City which are contained in the computation of operating expenses of the Gas Works including, without limitation, the expenses of the Gas Commission, and also means the base payments to the City contained in the Management Agreement and all other payments made to the City from Gas Works Revenues.

City Charges are payable from Gas Works Revenues provided, however, that such payments are subordinate to all other City obligations payable from the Gas Works Revenues. See APPENDIX E – "SUMMARY OF THE 1998 GENERAL ORDINANCE **– Order of Application of Gas Works Revenues**." The City has covenanted in the 1998 General Ordinance that it will not in any Fiscal Year pay from Gas Works Revenues any City Charges or debt service on any general obligation bonds of the City unless, among other things, there has been deposited in the Sinking Fund an amount sufficient to pay all sinking fund charges then payable with respect to all Outstanding 1998 Ordinance Bonds. See APPENDIX E – "SUMMARY OF THE

1998 GENERAL ORDINANCE – **Covenants** – *Additional Covenants*." Assuming the satisfaction of the above referenced covenant, PGW's annual $18.0 million payment to the City under the Management Agreement is paid currently in equal installments on the first business day of February, March, April and May in each Fiscal Year. See "PHILADELPHIA GAS WORKS – **Management** – *Management Agreement*" and "GAS SERVICE TARIFF AND RATES – **Rates** – *Ratemaking Methodology to Account for Bond Covenants*."

Related Covenants

Prior to issuing any 1998 Ordinance Bonds, the Act and the 1998 General Ordinance require the Philadelphia City Council (the "City Council") to adopt a Supplemental Ordinance that makes certain findings relating to the adequacy of Gas Works Revenues to pay debt service on all then-Outstanding 1998 Ordinance Bonds, the 1998 Ordinance Bonds to be issued thereunder and all other bonds or notes secured by the Gas Works Revenues. Such findings with respect to the related Bonds have been made in the Thirteenth Supplemental Ordinance and the Fourteenth Supplemental Ordinance and, in conformance with the Act and the 1998 General Ordinance, were based on, among other things, a report of Black & Veatch issued at the time of enactment of each ordinance (each, a "Prior Engineer's Report"). A copy of each such Prior Engineer's Report is available at the office of the Chief Clerk of the City Council, Room 402 City Hall, Philadelphia, Pennsylvania. No other action by City Council is required for the issuance of the Bonds. See "– **Authorized Additional 1998 Ordinance Bonds**" below. In connection with the issuance of the Bonds, Black & Veatch has prepared its Independent Consultant's Engineering Report, which, in part, relates to the adequacy of Gas Works Revenues to pay debt service on all bonds and notes for which Gas Works Revenues are pledged.

The Prior Engineer's Report dated June 13, 2017 issued in connection with the enactment of the Fourteenth Supplemental Ordinance was prepared based upon PGW's February 27, 2017 filed request with the PUC for a $70.0 million base revenue increase based in part on 10-year average heating degree days. On July 21, 2017, PGW filed with the PUC the Settlement Agreement (as hereafter defined) with respect to such rate request. As described herein under the caption: "GAS SERVICE TARIFF AND RATES – Rates – *2017 General Rate Relief Filing*," if the PUC approves the Settlement Agreement, the base revenue increase will instead be $42.0 million based in part on 20-year average heating degree days. No assurance is given that the Settlement Agreement will be approved by the PUC in its submitted form.

The effect of the Settlement Agreement is to reduce, among other matters, the amount of increases in operating revenues assumed by PGW in its filed rate request. The effect of such reductions is to lower the debt service coverages for the forecast years which were set forth in the June 13, 2017 report, and to require revenue enhancements, cost savings or rate increases in 2021 to achieve the net income levels shown in the Independent Consultant's Engineering Report. Table 19 – "Projected Debt Service Coverage" in APPENDIX B shows projected debt service coverage through Fiscal Year 2022 in excess of PGW's internal financial metric target of at least 2.0x. See also "PGW BUDGETS AND FINANCES" for a further discussion of PGW's internal financial metric targets. No assurances can be provided that PGW will meet any of its financial metric targets or that such targets will not be revised or eliminated.

The Independent Consultant's Engineering Report takes into account the effect of the Settlement Agreement. Investors should read the Independent Consultant's Engineering Report attached hereto as Appendix B in its entirety and should <u>not</u> rely upon the Prior Engineer's Reports in evaluating whether to make an investment in the Bonds. See APPENDIX B – "INDEPENDENT CONSULTANT'S ENGINEERING REPORT." Also see "INDEPENDENT CONSULTANT'S ENGINEERING REPORT" below.

The 1998 General Ordinance requires the City to comply with a rate covenant (the "Rate Covenant"), which requires the City to impose, charge and collect, in each Fiscal Year, rates and charges which, together with all other Gas Works Revenues to be received in such Fiscal Year, shall be sufficient to meet, among other things, Net Operating Expenses then payable and the debt service coverage requirements (including those with respect to the 1998 Ordinance Bonds) specified in the 1998 General Ordinance. See "– Rate Covenant and Rate Requirements" below and APPENDIX E – "SUMMARY OF THE 1998 GENERAL ORDINANCE" herein.

Sinking Fund Reserve

The 1998 General Ordinance establishes the Sinking Fund Reserve as a separate account in the Sinking Fund. Each Series of 1998 Ordinance Bonds (unless otherwise set forth in the Supplemental Ordinance authorizing such Series) is entitled to the benefit of the Sinking Fund Reserve. The City is required to deposit to the credit of the Sinking Fund Reserve from the proceeds of sale of each Series of 1998 Ordinance Bonds secured by the Sinking Fund Reserve and/or Gas Works Revenues an amount which, together with other amounts in the Sinking Fund Reserve, equal the greatest amount of debt service requirements required in any Fiscal Year to pay principal of and interest on the 1998 Ordinance Bonds coming due and payable in that Fiscal Year. In lieu of a deposit to the credit of the Sinking Fund Reserve or in substitution for amounts in the Sinking Fund Reserve, the City may provide one or more letters of credit or other Credit Facilities in the same aggregate amount, issued by a provider or providers whose Credit Facilities are such that bonds secured by such Credit Facilities are rated in one of the three (3) highest rating categories by Moody's Investors Service, Inc. ("Moody's"), Fitch IBCA, Inc. ("Fitch") or Standard & Poor's Ratings Service, a Division of The McGraw Hill Companies, Inc. ("S&P"), all in the manner described in APPENDIX E – "SUMMARY OF THE 1998 GENERAL ORDINANCE – **Sinking Fund Reserve**."

If, at any time and for any reason, the moneys in the Sinking Fund (other than the Sinking Fund Reserve) are insufficient to pay, as and when due, debt service on any 1998 Ordinance Bonds secured by the Sinking Fund Reserve, the Sinking Fund Depositary is required to pay over to the Fiscal Agent, from the Sinking Fund Reserve, the amount of the deficiency. If by reason of such withdrawal (including draws on any Credit Facilities held to satisfy the Sinking Fund Reserve Requirement) or for any other reason there shall be a deficiency in the Sinking Fund Reserve, the City has covenanted to restore such deficiency from Gas Works Revenues (either by a deposit of funds or the reinstatement of the cash limits of the Credit Facilities) within twelve (12) months.

The Sinking Fund Reserve is established solely for the benefit of the Holders of those 1998 Ordinance Bonds secured by the Sinking Fund Reserve. The Bonds and all Outstanding Senior 1998 Ordinance Bonds are secured by the Sinking Fund Reserve. Providers of Qualified Swaps or Exchange Agreements, issuers of Credit Facilities (other than those that become Bondholders as a result of a draw under a Credit Facility), the holders of any bonds or notes which are Subordinate 1998 Ordinance Bonds or on a parity with Subordinate 1998 Ordinance Bonds and the providers of any credit facilities related thereto do not have a lien on or security interest in the Sinking Fund Reserve.

Upon issuance of the Bonds, the amount required to be on deposit in the Sinking Fund Reserve will be \$100,551,147.20. The City will deposit \$14,789,900.00 to the Sinking Fund Reserve in connection with the issuance of the Bonds. The amount on deposit in the Sinking Fund Reserve on the date of issuance of the Bonds will be the amount necessary to satisfy the Sinking Fund Reserve Requirement. See "PLAN OF FINANCE AND ESTIMATED SOURCES AND USES OF FUNDS" above.

The Sinking Fund Reserve is managed by, and invested and reinvested under the direction of, the City. The Sinking Fund Reserve is valued by the Sinking Fund Depositary promptly after any withdrawal from the Sinking Fund Reserve or upon any other event indicating a possible deficiency in the Sinking Fund Reserve and on August 31 of each Fiscal Year of PGW.

The 1998 General Ordinance establishes permitted investments and the terms of such investments for moneys held in the Sinking Fund, including the Sinking Fund Reserve. See APPENDIX E – "SUMMARY OF THE 1998 GENERAL ORDINANCE – **Investment of Funds**." For information regarding such investments, which together with cash deposits, totaled approximately \$86.6 million as of August 31, 2016, see Note 3(b) in APPENDIX A – "COMPREHENSIVE ANNUAL FINANCIAL REPORT FOR FISCAL YEARS ENDED AUGUST 31, 2016 AND 2015 OF THE PHILADELPHIA GAS WORKS – **Financial Section**."

For additional information concerning the Sinking Fund Reserve, see APPENDIX E – "SUMMARY OF THE 1998 GENERAL ORDINANCE – **Sinking Fund Reserve."**

Rate Covenant and Rate Requirements

Pursuant to the Rate Covenant, the City has covenanted in the 1998 General Ordinance that, for so long as the 1998 Ordinance Bonds are outstanding, the City will, at a minimum, impose, charge and collect in each Fiscal Year of the Gas Works such gas rates and charges as shall, together with all other Gas Works Revenues to be received in such Fiscal Year, equal not less than the greater of (a) and (b) below:

(a) The sum of:

(i) all Net Operating Expenses payable during such Fiscal Year;

(ii) 150% of the amount required to pay Sinking Fund deposits required during such Fiscal Year in respect of all Outstanding Senior 1998 Ordinance Bonds;

(iii) the amount required to pay Sinking Fund deposits required during such Fiscal Year in respect of all Outstanding Subordinate 1998 Ordinance Bonds and other obligations of the Gas Works on a parity with Subordinate 1998 Ordinance Bonds payable during such Fiscal Year;

(iv) the amount, if any, required to be paid into the Sinking Fund Reserve during such Fiscal Year;

(v) the Rebate Amount required to be paid to the United States during such Fiscal Year; and

(vi) the amounts required to be paid to the issuers of Credit Facilities and the providers of Qualified Swaps and Exchange Agreements during such Fiscal Year;

or

(b) The sum of:

(i) all Net Operating Expenses payable during such Fiscal Year;

(ii) all Sinking Fund deposits required during such Fiscal Year in respect of all Outstanding 1998 Ordinance Bonds and all amounts payable in respect of obligations of PGW which are on a parity with any of the 1998 Ordinance Bonds and in respect of general obligation bonds issued for improvements to the Gas Works and all amounts, if any, required during such Fiscal Year to be paid into the Sinking Fund Reserve;

(iii) the Rebate Amount required to be paid to the United States during such Fiscal Year; and

(iv) the amounts required to be paid to the issuers of Credit Facilities and the providers of Qualified Swaps and Exchange Agreements during such Fiscal Year.

In calculating the City's compliance with the Rate Covenant set forth above, required Sinking Fund deposits are calculated without regard to the effect of any Qualified Swap and Exchange Agreements. For a further discussion of the Rate Covenant and other rate requirements applicable to the City, including the PUC obligation to set rates, see "PGW BUDGETS AND FINANCES – **Debt Service Coverage Ratio**" and "GAS SERVICE TARIFF AND RATES – **Rates** – *Ratemaking Methodology to Account for Bond Covenants*."

Qualified Swaps and Exchange Agreements

The 1998 General Ordinance permits the City to enter into a Qualified Swap or Exchange Agreement with respect to a series of Senior 1998 Ordinance Bonds or Subordinate 1998 Ordinance Bonds or a portion thereof upon the enactment of an ordinance by the City Council authorizing such Qualified Swap or Exchange Agreement. Payments, other than termination payments, due to the provider of a Qualified Swap or Exchange Agreement are payable from Gas Works Revenues on a parity with debt service on, as applicable, Senior 1998

Ordinance Bonds (if such Qualified Swap or Exchange Agreement relates to a series of Senior 1998 Ordinance Bonds) or Subordinate 1998 Ordinance Bonds (if such Qualified Swap or Exchange Agreement relates to a series of Subordinate 1998 Ordinance Bonds). See "– **Gas Works Revenues** – *Order of Application of Gas Works Revenues*" above. The 1998 General Ordinance prohibits the provider of any Qualified Swap or Exchange Agreement from having any right or claim at any time to amounts on deposit in the Sinking Fund Reserve. There are four Qualified Swaps and Exchange Agreements in effect, each of which is related to a Series of Senior 1998 Ordinance Bonds and detailed in the table below.

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Table 1
QUALIFIED SWAPS & EXCHANGE AGREEMENTS
RELATED TO SENIOR 1998 ORDINANCE BONDS
as of June 30, 2017

Related Senior 1998 Ordinance Bond Series	8B	8C	8D	8E
Initial Notional Amount	$313,390,000 [7]	$50,000,000	$50,000,000	$50,000,000
Current Notional Amount[1]	$27,370,000	$27,225,000	$40,845,000	$27,370,000
Termination Date	8/1/2028	8/1/2028	8/1/2028	8/1/2028
Product	Fixed Payer Swap	Fixed Payer Swap	Fixed Payer Swap	Fixed Payer Swap
Rate Paid by Provider	70% 1-month LIBOR	70% 1-month LIBOR	70% 1-month LIBOR	70% 1-month LIBOR
Rate Paid by City[2]	3.6745%	3.6745%	3.6745%	3.6745%
Provider	JPMorgan Chase Bank, N.A.[6]	JPMorgan Chase Bank, N.A.[6]	JPMorgan Chase Bank, N.A.[6]	JPMorgan Chase Bank, N.A.[6]
Net Present Value[3]	($5,325,527)	($5,297,255)	($7,947,221)	($5,325,527)
Credit Related Termination Events	For Provider: [4]	For Provider: [4]	For Provider: [4]	For Provider: [4]
	For City: [5]	For City: [5]	For City: [5]	For City: [5]

(1) As of June 30, 2017. As of such date, the notional amount of each swap was equal to, as applicable, the principal outstanding amount of the related series.

(2) The City's fixed rate payments under each swap are insured by Assured Guaranty Municipal Corporation ("Assured").

(3) Net present values are as of June 30, 2017, include accrued interest, and are shown at mid-market from the City's perspective.

(4) Each swap may be terminated by the provider if (a) Assured's claims paying ability is rated below "A" by S&P and its financial strength rating is rated below "A2" by Moody's or if either rating is withdrawn or suspended and not reinstated within 30 days (provided that Assured maintains a rating of at least "AA" from S&P or "Aa2" from Moody's during such 30 day period), and (b) the Eighth Series Bonds are rated below "Baa2" by Moody's or below "BBB" by S&P. As of July 19, 2017, Moody's website reflected a rating of "A2" for Assured and S&P's website reflected a rating of "AA" for Assured.

(5) Each swap may be terminated by the City if the senior long-term debt or deposits of the provider are rated below "A3" by Moody's or "A-" by S&P, unless the provider has (i) assigned or transferred the swap to a party acceptable to the City; (ii) provided a credit support provider acceptable to the City whose obligations are pursuant to a credit support document acceptable to the City; or (iii) executed a credit support annex, in form and substance acceptable to the City, providing for the collateralization by the provider of its obligations under the applicable swap.

(6) As of July 19, 2017, Moody's website reflected a senior long-term debt rating of JPMorgan Chase Bank, N.A. ("JPMorgan") of "Aa3" and a counterparty risk assessment rating of "Aa2(cr)." As of July 19, 2017, S&P's website reflected a long term rating of JPMorgan of "A+".

(7) Reflects the initial notional amount of the swap entered into in connection and concurrently with the issuance of the Sixth Series Bonds, which were the Senior 1998 Ordinance Bonds redeemed in whole with a portion of the proceeds of the Eighth Series Bonds. Upon such redemption, a portion of such swap was terminated and the remainder of the swap was identified to and reallocated among the four Series of Senior 1998 Ordinance Bonds reflected in Table 1.

For additional information regarding such Qualified Swap and Exchange Agreements as of August 31, 2016 see Note 8 in APPENDIX A – "COMPREHENSIVE ANNUAL FINANCIAL REPORT FOR FISCAL YEARS ENDED AUGUST 31, 2016 AND 2015 OF THE PHILADELPHIA GAS WORKS – **Financial Section**."

Credit Facilities With Respect to 1998 Ordinance Bonds

The 1998 General Ordinance permits the City to enter into a Credit Facility with respect to any Series of Senior 1998 Ordinance Bonds and Subordinate 1998 Ordinance Bonds. As of the date of this Official Statement, there is a Credit Facility in effect in the form of a letter of credit with respect to each of the five subseries of variable rate Senior 1998 Ordinance Bonds (consisting of one subseries of the Fifth Series Bonds and four subseries of the Eighth Series Bonds as further detailed in Table 2 below), which bonds (in the aggregate) have an Outstanding principal balance of $152,810,000 as of July 1, 2017. Such amount represents 18.43% of the Senior 1998 Ordinance Bonds Outstanding as of July 1, 2017. The coverage for principal payments under each letter of credit is equal to the outstanding principal amount of applicable subseries as of the date of this Official Statement. Each letter of credit expires prior to the final maturity date of the applicable series of Senior 1998 Ordinance Bonds. In connection with any scheduled expiration, the City may extend the scheduled expiration, provide an alternate liquidity facility to replace the expiring letter of credit, or convert the interest rates on the applicable 1998 Ordinance Bonds to fixed interest rates or to an interest rate mode that does not require a liquidity facility. There can be no assurance that the City will be able to extend any expiration date or to obtain an alternate Credit Facility on terms substantially similar to the terms of any expiring letter of credit.

Following an unreimbursed draw on a letter of credit, the applicable 1998 Ordinance Bonds, so long as they are owned by such issuer, are "bank bonds" and will bear an interest rate determined in accordance with the applicable Bond Authorization and letter of credit reimbursement agreement (a "bank bond rate"). This interest rate may be higher or lower than the rate that 1998 Ordinance Bonds of the same Series that are not bank bonds would otherwise bear. In addition, each bank bond rate may increase upon the occurrence of certain defaults (such increased bank bond rate is the "default rate").

Issuers of Credit Facilities (other than those that are Bondholders) do not have any lien on or security interest in the Sinking Fund Reserve. See APPENDIX E – "SUMMARY OF THE 1998 GENERAL ORDINANCE – **Order of Application of Gas Works Revenues**" for a discussion of the respective payment priorities of amount due under a Credit Facility.

Senior 1998 Ordinance Bonds

The table below describes the existing letters of credit, and the issuers thereof, related to Senior 1998 Ordinance Bonds as of the date of this Official Statement. In accordance with the 1998 General Ordinance, the payment of interest on and principal of bank bonds that are Senior 1998 Ordinance Bonds is on a parity with debt service on all other Senior 1998 Ordinance Bonds.

Table 2
VARIABLE RATE SENIOR 1998 ORDINANCE BONDS
LETTERS OF CREDIT

Related Series	Bonds Outstanding ($000 omitted)[7]	Issuer	Expiration Date	Counterparty Risk Assessment Term Ratings (Moody's)[6]	Issuer Long Term and Short Term Ratings (S&P)[6]	Issuer Long Term and Short Term Ratings (Fitch)[6]
5A-2[1]	$30,000	TD Bank[1]	12/21/19	Aa3(cr)/P-1(cr)	AA-/A-1+	AA-/F1+
8B[2]	$27,370	Wells Fargo[2]	08/01/19	Aa1(cr)/P-1(cr)	AA-[8]/A-1+	AA[8]/F1+
8C[3][9]	$27,225	Barclays[3]	08/01/18	A1(cr)[8]/P-1(cr)	A-[8]/A-2	A/F1
8D[4][9]	$40,845	RBC[4]	08/01/18	Aa3(cr)[8]/P-1(cr)	AA-[8]/A-1+	AA[8]/F1+
8E[5][9]	$27,370	PNC[5]	08/01/19	A1(cr)/P-1(cr)	A/A-1	A+/F1

(1) TD Bank, N.A. ("TD Bank"). The City is required to repay the principal component of bank bonds in six semi-annual installments beginning on the letter of credit expiration date. The bank bond rate is a rate per annum equal to (a) during the period from the date of the related unreimbursed draw to and including the 180th day thereafter, the greater of (i) the "base rate" (as defined below) and (ii) 5.00%, and (b) during the period from the 181st day after the related unreimbursed draw, the greater of (x) the base rate plus 200 basis points (2.00%) and (y) 5.00%; provided, however, that from and after the occurrence and during the continuance of an event of default under the related reimbursement agreement, the bank bond rate shall equal the greater of (x) the base rate plus 300 basis points (3.00%) and (y) 7.00%. The "base rate" is a rate per annum equal to the higher of (a) the Wall Street Journal Prime Rate in effect on such day and (b) the sum of the federal funds open rate in effect on such day plus 100 basis points (1.00%). In no event will the bank rate exceed the lesser of (x) twenty-five percent (25%) per annum and (y) the maximum lawful rate.

(2) Wells Fargo Bank, National Association ("Wells Fargo"). The City is required to repay the principal component of the purchase price of bank bonds, assuming the satisfaction of certain conditions, in 180 days after the related unreimbursed draw in five semi-annual installments, beginning 6 months after the term loan is made. The bank bond rate is the "base rate" (as defined below) plus two percent (2%) per annum, not to exceed the Maximum Interest Rate. The "base rate" is the greatest of (i) the Prime Rate plus one percent (1.0%) per annum; (ii) the Federal Funds Rate plus two percent (2.0%) per annum; or (iii) seven percent (7.0%) per annum, and shall change simultaneously with any change in the Prime Rate or the Federal Funds Rate, as applicable. Notwithstanding the foregoing, immediately and automatically upon the occurrence of an event of default under the letter of credit, and during the continuation thereof, the bank bond rate shall be equal to the base rate plus three percent (3.0 %). In no event will the bank bond rate exceed the lesser of (a) twenty-five percent (25%), and (b) the maximum lawful rate.

(3) Barclays Bank PLC ("Barclays"). The City is required to repay the principal component of the purchase price of bank bonds, assuming the satisfaction of certain conditions, in 10 equal quarterly installments beginning 6 months after the unreimbursed related draw. The bank bond rate is (i) for the first 90 days after Barclays has purchased the 1998 Ordinance Bonds, the "base rate" (as defined below), (ii) for days 91 through and including 180, the base rate plus (except for component (c) of the base rate) one percent (1.0%), and (iii) on and after the 181st day, the base rate plus (except for component (c) of the base rate) two percent (2.0%). The "base rate" is the highest of (a) the prime rate publically announced by Barclays in New York City plus two and one-half of one percent (2.50%), (b) the federal funds rate plus two and one-half of one percent (2.50%), (c) one hundred fifty percent (150%) of the yield on 30-year United States Treasury bonds, and (d) seven and one-half of one percent (7.50%). Notwithstanding the foregoing, immediately and automatically upon the occurrence of an event of default under the letter of credit, and during the continuation thereof, the bank bond rate shall be equal to the base rate plus two percent (2.0 %). In no event will the bank bond rate exceed the lesser of (a) twenty-five percent (25%), and (b) the maximum lawful rate.

(4) Royal Bank of Canada ("RBC"). The City is required to repay the principal component of the purchase price of bank bonds, assuming the satisfaction of certain conditions, in 12 quarterly installments beginning on the date three months after the 90th day following the related unreimbursed draw. The bank bond rate is (i) from the date that RBC has purchased the 1998 Ordinance Bonds to and including the 90th day thereafter, the "base rate" (as defined below), and (ii) from and after the earlier of the 91st day following such purchase and the stated expiration date, the base rate plus two percent (2.00%). The "base rate" is the highest of (a) the prime rate established by RBC, (b) the federal funds rate plus two percent (2.00%), and (c) seven and one half of one percent (7.50%). Notwithstanding the foregoing, from and after the occurrence of an event of default under the letter of credit, but only so long as such event of default continues, bank bonds will bear interest at the base rate plus three percent (3.00%). In no event will the bank bond rate exceed the lesser of (a) twenty-five percent (25%), and (b) the maximum lawful rate.

(5) PNC Bank, National Association ("PNC"). The City is required to repay the principal component of the purchase price of bank bonds, assuming the satisfaction of certain conditions, in 10 equal semiannual installments payable in arrears beginning on the day that is 6 months after the date the term loan is made. Conversion to term loans is the earlier of 180 days after the purchase or the Letter of Credit expiration date. The bank bond rate is (i) for the first 180 days after PNC has purchased the 1998 Ordinance Bonds, the "base rate" (as defined below), and (ii) from and after the earlier of the 181st day following such purchase and the termination date of the letter of credit, the base rate plus two percent (2.00%). The "base rate" is the highest of (a) the prime rate publicly announced by PNC effective in Pittsburgh, Pennsylvania, (b) the sum of the federal funds rate plus three percent (3.00%), and (c) seven and one half of one percent (7.50%). Notwithstanding the foregoing, from and after the occurrence and during the continuation of an event of default under the letter of credit, the bank rate shall be equal to the base rate plus three percent (3.0%). In no event will the bank bond rate exceed the lesser of (a) twenty-five percent (25%), and (b) the maximum lawful rate.

(6) All ratings reflect information from the respective rating agency's website as of July 19, 2017.

(7) As of July 1, 2017.

(8) As of July 19, 2017, the rating has a negative outlook.

(9) Notwithstanding the establishment of the bank bond rate, bank bonds shall bear interest at the greater of the applicable bank bond rate or the rate of interest borne by 1998 Ordinance Bonds of the applicable series that are not bank bonds.

Subordinate 1998 Ordinance Bonds

Pursuant to respective reimbursement agreements, JPMorgan Chase Bank National Association ("JPMorgan") and PNC Bank, National Association ("PNC") have each issued a direct pay irrevocable letter of credit in a stated amount of $50,000,000 and $70,000,000, respectively (each a "Stated Amount"), to pay the principal of and interest on CP Capital Project Notes and Gas Works Notes, maturing from time to time. In accordance with each letter of credit, the aggregate principal amount of the CP Capital Project Notes and Gas Works Notes subject to each letter of credit (and the interest thereon) plus any advances and unreimbursed drawings thereunder (and the interest thereon) cannot exceed the related Stated Amount, unless such Stated Amount is increased. Each letter of credit expires on October 13, 2017. The CP Capital Project Notes, are Subordinate 1998 Ordinance Bonds and such letters of credit, solely as they relate to the CP Capital Project Notes, are Credit Facilities under the 1998 General Ordinance. The Gas Works Notes are not issued under the 1998 General Ordinance. However, under the 1998 General Ordinance, such Gas Works Notes are junior in priority of payment to the Senior 1998 Ordinance Bonds, and payments due in respect of Gas Works Notes are on a parity with Subordinate 1998 Ordinance Bonds. See "COMMERCIAL PAPER PROGRAMS."

As described above under "PLAN OF FINANCE AND ESTIMATED SOURCES AND USES OF FUNDS," a portion of the proceeds of the Bonds will be used to redeem the outstanding CP Capital Project Notes. Due to the refunding of all outstanding CP Capital Project Notes and there currently being no Gas Works Notes outstanding, the City does not expect to extend or replace the above-described letters of credit for a term beyond their October 13, 2017 expiration dates. See "COMMERCIAL PAPER PROGRAMS – Notes Line of Credit" for a description of the Notes Line of Credit (as defined below).

Authorized Additional 1998 Ordinance Bonds

The 1998 General Ordinance permits the issuance of additional 1998 Ordinance Bonds which, if and when issued, will be either Senior 1998 Ordinance Bonds or Subordinate 1998 Ordinance Bonds. The issuance of any additional 1998 Ordinance Bonds (other than the Bonds and any other additional 1998 Ordinance Bonds issued pursuant to the Thirteenth Supplemental Ordinance, as described below) requires, among other things, the adoption by the City Council of a Supplemental Ordinance that makes the findings described under "– **Gas Works Revenues** – *Related Covenants*" above.

The 1998 General Ordinance authorizes the City to issue one or more series of CP Capital Project Notes (as defined below). The CP Capital Project Notes are issued as Subordinate 1998 Ordinance Bonds. See "– Pledge of Revenues and Funds – *Subordinate 1998 Ordinance Bonds*" above and "COMMERCIAL PAPER PROGRAMS" below. See "– **Credit Facilities with respect to 1998 Ordinance Bonds** – *Subordinate 1998 Ordinance Bonds*" for information regarding the current letters of credit for the CP Capital Project Notes. See "COMMERCIAL PAPER PROGRAMS – Notes Line of Credit" for information regarding the anticipated Notes Line of Credit to relate to potential future advances to finance a portion of PGW's ongoing Capital Improvement Program after the expenditure of the proceeds of the Bonds, to be evidenced by the issuance of CP Capital Project Notes. Pursuant to the 1998 General Ordinance, the CP Capital Project Notes are not secured by the Sinking Fund Reserve.

The Bonds which will finance a portion of PGW's ongoing Capital Improvement Program are being issued pursuant to the Fourteenth Supplemental Ordinance, which authorizes the City to issue one or more series of Senior 1998 Ordinance Bonds in an aggregate principal amount not to exceed $300,000,000. The Bonds which will redeem the outstanding CP Capital Project Notes and refund the Refunded Bonds are being issued pursuant to the Thirteenth Supplemental Ordinance. See "PLAN OF FINANCE AND ESTIMATED SOURCES AND USES OF FUNDS" above.

The Thirteenth Supplemental Ordinance authorizes the City to issue one or more series of Senior 1998 Ordinance Bonds in an aggregate principal amount not to exceed $1,026,000,000 for the purposes, *inter alia*, of refunding or redeeming of all or a portion of any outstanding Senior 1998 Ordinance Bonds and all or a portion of outstanding CP Capital Project Notes. The first such Series (the Thirteenth Series Bonds) was issued in the aggregate principal amount of $261,770,000 on August 18, 2015 and the second such Series (the Fourteenth Series Bonds) was issued in the aggregate principal amount of $312,425,000 on August 30, 2016. Subsequent Series of Senior 1998 Ordinance Bonds issued pursuant to the Thirteenth Supplemental Ordinance (including the allocable portion of the Bonds) do not require any additional City Council action, provided that the City may only issue bonds under the Thirteenth Supplemental Ordinance to refund Senior 1998 Ordinance Bonds previously issued under the Thirteenth Supplemental Ordinance if such refunding bonds (i) are issued solely to refund any 1998 Ordinance Bonds previously issued pursuant thereto, (ii) do not extend the final maturity of the 1998 Ordinance Bonds to be refunded and have debt service in each year lower than the debt service in each year on the bonds to be refunded, and (iii) are in a principal amount not to exceed the amount which accomplishes the foregoing, together with the amount necessary to pay the costs of issuance related to such refunding bonds. The Thirteenth Supplemental Ordinance provides that the aggregate principal amount of Senior 1998 Ordinance Bonds which may be issued to pay the costs of redeeming the CP Capital Project Notes may not exceed $135,000,000. The Bonds which will refund the Refunded Bonds and redeem the outstanding CP Capital Project Notes, and the issuance thereof, satisfy the applicable criteria of the Thirteenth Supplemental Ordinance. After issuing the Bonds, the City will retain the authority to issue up to $309,950,000 of 1998 Ordinance Bonds to refund Senior 1998 Ordinance Bonds pursuant to the Thirteenth Supplemental Ordinance.

Any Series of 1998 Ordinance Bonds issued pursuant to the Fourteenth Supplemental Ordinance or the Thirteenth Supplemental Ordinance will be entitled to the benefit of the Sinking Fund Reserve.

As noted above under "– Gas Works Revenues," Gas Works Revenues, pursuant to a Supplemental Ordinance, may be divided into separate components and any Series of 1998 Ordinance Bonds issued thereafter may be limited as to source of payment to one or more such components. Since all current Gas Works Revenues are pledged for the security of and payment on all 1998 Ordinance Bonds, only new revenues that satisfy the definition of Gas Works Revenues could be so divided and pledged as security for and the only source of payment on one or more future Series of 1998 Ordinance Bonds.

The Act and the 1998 General Ordinance authorize the City to issue Senior 1998 Ordinance Bonds and Subordinate 1998 Ordinance Bonds in the form of revenue bond anticipation notes ("Anticipation Notes"). The principal of any Anticipation Notes is payable by exchange for, or out of the proceeds of the sale of, a designated Series of 1998 Ordinance Bonds referred to in the related Anticipation Notes. If such designated Series of 1998 Ordinance Bonds is offered for sale but cannot be sold, the sole remedy of the Holders of Anticipation Notes is to accept the 1998 Ordinance Bonds of the designated Series at their maximum interest rate (which must be set forth in the related Anticipation Notes), or to extend the maturity of the Anticipation Notes for one or more specified additional periods of not less than six months during which additional offers of the designated Series of 1998 Ordinance Bonds may be made. The City has never issued Anticipation Notes.

See "POSSIBLE FUTURE PGW RELATED FINANCINGS" below for information concerning potential future issuances of 1998 Ordinance Bonds.

Covenant Against Commingling with Other City Funds

The City has covenanted that so long as any of the Bonds remain Outstanding, all Gas Works Revenues, as applicable, shall be deposited and held in and disbursed from, one or more unsegregated accounts of PGW which shall be separate from and not commingled with the consolidated cash account of the City or any other account of the City not held exclusively for PGW purposes.

The effectiveness of the separation of proceeds of the Bonds and revenues from other City accounts may be limited under certain circumstances, including a bankruptcy filing by the City. See "REMEDIES OF BONDHOLDERS – **Limitation On Remedies of Bondholders**" below.

Senior 1998 Ordinance Bonds Debt Service Schedule

The table below reflects the debt service schedule for all Senior 1998 Ordinance Bonds Outstanding, (excluding the Refunded Bonds and the Defeased Bonds and including the Bonds), as of the date of issuance for the Bonds.

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Table 3
SENIOR 1998 ORDINANCE BONDS DEBT SERVICE

Fiscal Year Ending August 31	Outstanding Senior 1998 Ordinance Bonds [1] Existing Debt Service	Bonds Principal	Bonds Interest	Bonds Total Debt Service	Total Senior 1998 Ordinance Bonds (including the Bonds) Combined Total Debt Service
2018	$68,942,622	$4,765,000	$12,745,546	$17,510,546	$86,453,168
2019	76,997,747	8,495,000	13,204,400	21,699,400	98,697,147
2020	79,785,372	4,445,000	12,949,550	17,394,550	97,179,922
2021	78,150,622	4,625,000	12,771,750	17,396,750	95,547,372
2022	76,563,285	4,855,000	12,540,500	17,395,500	93,958,785
2023	75,644,410	5,100,000	12,297,750	17,397,750	93,042,160
2024	74,762,485	5,350,000	12,042,750	17,392,750	92,155,235
2025	67,920,851	5,620,000	11,775,250	17,395,250	85,316,101
2026	67,690,473	5,905,000	11,494,250	17,399,250	85,089,723
2027	64,548,338	6,195,000	11,199,000	17,394,000	81,942,338
2028	63,379,618	7,775,000	10,889,250	18,664,250	82,043,868
2029	34,356,750	8,240,000	10,500,500	18,740,500	53,097,250
2030	34,360,125	7,175,000	10,088,500	17,263,500	51,623,625
2031	34,358,375	7,530,000	9,729,750	17,259,750	51,618,125
2032	34,353,375	7,910,000	9,353,250	17,263,250	51,616,625
2033	25,957,250	8,300,000	8,957,750	17,257,750	43,215,000
2034	25,966,000	8,715,000	8,542,750	17,257,750	43,223,750
2035	42,919,000	9,150,000	8,107,000	17,257,000	60,176,000
2036	20,595,100	9,610,000	7,649,500	17,259,500	37,854,600
2037	20,592,413	10,095,000	7,169,000	17,264,000	37,856,413
2038	20,587,725	10,600,000	6,664,250	17,264,250	37,851,975
2039	9,936,525	11,125,000	6,134,250	17,259,250	27,195,775
2040	9,935,600	11,685,000	5,578,000	17,263,000	27,198,600
2041		12,265,000	4,993,750	17,258,750	17,258,750
2042		12,880,000	4,380,500	17,260,500	17,260,500
2043		13,525,000	3,736,500	17,261,500	17,261,500
2044		14,200,000	3,060,250	17,260,250	17,260,250
2045		14,910,000	2,350,250	17,260,250	17,260,250
2046		15,655,000	1,604,750	17,259,750	17,259,750
2047		16,440,000	822,000	17,262,000	17,262,000
Total	$1,108,304,060	$273,140,000	$253,332,496	$526,472,496	$1,634,776,556

[1] Excludes the Refunded Bonds. Interest on the Fifth Series A-2 bonds calculated at 0.82%. Interest on the Eighth Series B, C, D and E bonds calculated at the swap rate of 3.6745%. This table assumes that there will be no draws on the letters of credit. See "SECURITY AND SOURCES OF PAYMENT FOR THE 1998 ORDINANCE BONDS – **Credit Facilities with Respect to 1998 General Ordinance.**" Excludes the Defeased Bonds to be defeased by PGW, with its own moneys, simultaneously with the issuance of the Bonds. Does not include the CP Capital Project Notes to be redeemed by the Bonds. See "PLAN OF FINANCE AND ESTIMATED SOURCES AND USES OF FUNDS" above.

COMMERCIAL PAPER PROGRAMS

The City is authorized to issue commercial paper to finance the costs of certain PGW capital projects, other project costs and working capital requirements.

CP Capital Project Notes

Pursuant to the 1998 General Ordinance, the City may currently issue one or more series of commercial paper notes in installments in a principal amount not to exceed $120,000,000 Outstanding at any time (the "CP Capital Project Notes") to finance capital projects included in PGW's approved capital program. CP Capital Project Notes are issued as Subordinate 1998 Ordinance Bonds. Pursuant to the Twelfth Supplemental Ordinance to the 1998 General Ordinance, the City issued an aggregate principal amount of $30,000,000 of CP Capital Project Notes in PGW's Fiscal Year 2015 to finance the cost of certain PGW capital projects that were approved by the City Council as part of PGW's Fiscal Year 2015 capital budget and issued $41,000,000 in aggregate principal amount of additional CP Capital Project Notes during Fiscal Year 2016 for PGW capital projects. The City also has issued $30,000,000 of additional CP Capital Project Notes during Fiscal Year 2017 pursuant to the Twelfth Supplemental Ordinance to the 1998 General Ordinance. Also see "PLAN OF FINANCE AND ESTIMATED SOURCES AND USES OF FUNDS" regarding PGW's plan to use a portion of the proceeds of the Bonds to redeem the entire $101,000,000 outstanding balance of such CP Capital Project Notes.

Pursuant to the Fourteenth Supplemental Ordinance, the City has continued the authority for the issuance of the CP Capital Project Notes provided for in the Twelfth Supplemental Ordinance in a principal amount not to exceed $120,000,000. PGW may request the City for authorization to issue additional CP Capital Project Notes in future Fiscal Years. The City contemplates issuing any future CP Capital Project Notes pursuant to the Fourteenth Supplemental Ordinance (at which time the City will no longer issue CP Capital Project Notes under the Twelfth Supplemental Ordinance).

The holders of CP Capital Project Notes and the issuers of any credit facilities related thereto do not have a lien on or a security interest in the Sinking Fund Reserve. See "SECURITY AND SOURCES OF PAYMENT FOR THE 1998 ORDINANCE BONDS – **Pledge of Revenues and Funds** – *Subordinate 1998 Ordinance Bonds*" and "– **Sinking Fund Reserve**."

The Independent Consultant's Engineering Report incorporates forecasts by PGW of prospective debt issuances, all or a portion of which, may be in the form of 1998 Ordinance Bonds (including CP Capital Project Notes). Such forecasts do not reflect the issuance of additional CP Capital Project Notes during the Fiscal Year 2018 to 2022 forecast period. See "Possible Future PGW Related Financings – The Independent Consultant's Engineering Report." In addition, in a 2015 review of PGW, PUC staff identified the issuance of additional debt (which could include CP Capital Project Notes) as one possible means of financing PGW pipeline and other infrastructure replacements. See "POSSIBLE FUTURE PGW RELATED FINANCINGS – **Infrastructure Replacement**" below.

Notes Line of Credit

The City is in the process of reviewing proposals for a line of credit (the "Notes Line of Credit") in the amount of $120,000,000 for advances, from time to time, to be evidenced by the issuance of CP Capital Project Notes and/or Gas Works Notes (as defined and discussed below in the following subsection captioned "Gas Works Notes"). It is expected that advances under the Notes Line of Credit once repaid by the repayment of CP Capital Project Notes or Gas Works Notes may be re-borrowed by the purchase of additional CP Capital Project Notes and/or Gas Works Notes. Any provider of the Notes Line of Credit will be a noteholder of CP Capital Project Notes or Gas Works Notes, as applicable, and as such will have the benefit of only the events of default and remedies available to the holders of CP Capital Project Notes and the Gas Works Notes under the 1998 General Ordinance as to CP Capital Project Notes and the Note Ordinance (as defined below) as to Gas Works Notes.

Gas Works Notes

PGW's working capital requirements may be financed by the issuance of notes (the "Gas Works Notes") pursuant to The City of Philadelphia Municipal Utility Inventory and Receivables Financing Act of the Commonwealth (the "Inventory and Receivables Financing Act") and the General Inventory and Receivables Gas Works Revenue Note Ordinance of 2017 (the "Note Ordinance"). Gas Works Notes may be issued in installments in a principal amount (together with interest) not to exceed, in the aggregate, $150,000,000 at any one time outstanding. As of the date of this Official Statement, no Gas Works Notes are outstanding, and the City does not currently anticipate issuing any Gas

Works Notes. The proceeds of Gas Works Notes may be used to finance or refund the costs of acquiring or funding certain inventory, accounts and other expenses of PGW or to refund Gas Works Notes.

The Note Ordinance is intended to continue the authority for issuance of gas works revenue notes contained in the General Inventory and Receivables Gas Works Revenue Note Ordinance of 2013 (the "2013 Note Ordinance"). At such time as Gas Works Notes are issued pursuant to the authority contained in the Note Ordinance, no additional Gas Works Notes will be issued under the 2013 Note Ordinance.

Gas Works Notes are not 1998 Ordinance Bonds. Debt service on Gas Works Notes is payable from Gas Works Revenues on a parity with Subordinate 1998 Ordinance Bonds. The Bonds and all other Senior 1998 Ordinance Bonds are senior in right of payment and security to the Gas Works Notes. See "SECURITY AND SOURCES OF PAYMENT FOR THE 1998 ORDINANCE BONDS – **Pledge of Revenues and Funds**" and APPENDIX E – "SUMMARY OF THE 1998 GENERAL ORDINANCE – **Order of Application of Gas Works Revenues**." The holders of any Gas Works Notes and the issuers of any credit facilities related thereto do not have a lien on or a security interest in the Sinking Fund Reserve. "SECURITY AND SOURCES OF PAYMENT FOR THE 1998 ORDINANCE BONDS – **Sinking Fund Reserve**." See "SECURITY AND SOURCES OF PAYMENT FOR THE 1998 ORDINANCE BONDS – **Credit Facilities with respect to 1998 Ordinance Bonds –** *Subordinate 1998 Ordinance Bonds*" for information regarding the two current credit facilities in the form of direct pay irrevocable letters of credit in effect for the Gas Works Notes. Also see "Letters of Credit" below and "Notes Line of Credit" above for a discussion of the City's plans to utilize the Notes Line of Credit in lieu of extending or replacing such current direct pay letters of credit for the Gas Works Notes.

Letters of Credit

As described above under "SECURITY AND SOURCES OF PAYMENT FOR THE 1998 ORDINANCE BONDS – **Credit Facilities with Respect to 1998 Ordinance Bonds** – *Subordinate 1998 Ordinance Bonds*," pursuant to respective reimbursement agreements, JPMorgan and PNC have each issued a direct pay irrevocable letter of credit in the related Stated Amount, to pay the principal of and interest on maturing CP Capital Project Notes and Gas Works Notes, from time to time. In accordance with each letter of credit, the aggregate principal amount of the CP Capital Project Notes and Gas Works Notes subject to each letter of credit (and the interest thereon) plus any advances and unreimbursed drawings thereunder (and the interest thereon) cannot exceed the related Stated Amount, unless such amount is increased. Each letter of credit expires on October 13, 2017. Such letters of credit, solely as they relate to the CP Capital Project Notes, are Credit Facilities under the 1998 General Ordinance.

PGW does not anticipate extending or replacing such letters of credit due to the refunding of all outstanding CP Capital Project Notes in connection with the issuance of the Bonds and the expected Notes Line of Credit as a financing alternative to such letters of credit. PGW plans to draw on the letters of credit in connection with such refunding of all outstanding CP Capital Project Notes and reimburse such drawings from proceeds of the Bonds on the date of issuance of the Bonds.

OTHER DEBT OBLIGATIONS PAYABLE FROM GAS WORKS REVENUES

Short-Term Borrowings

PGW is authorized to make interfund loans from various consolidated accounts of PGW that do not secure 1998 Ordinance Bonds for payment, as necessary, of PGW obligations, including debt service on bonds issued under the 1998 General Ordinance. PGW must reimburse such accounts as revenues are received by the end of each Fiscal Year during which such withdrawals were made. No such interfund loans are outstanding.

Also, see "COMMERCIAL PAPER PROGRAMS" above.

Additional Bond Ordinances

The Act permits the City to enact new general bond ordinances that pledge, for the security and payment of any bonds and notes issued thereunder, the Gas Works Revenues. Prior to enacting any such bond ordinance, the City Council must adopt a supplemental ordinance that makes certain findings relating to the adequacy of Gas Works Revenues to pay debt service on all then-outstanding 1998 Ordinance Bonds, Gas Works Notes and the new series of bonds to be issued thereunder. Such findings are to be based on a report of the chief fiscal officer of the City, which in turn can be based on a report of an independent engineer employed by the City to evaluate PGW. The 1998 General Ordinance requires any such bonds and notes to be payable from Gas Works Revenues on a parity with debt service on Subordinate 1998 Ordinance Bonds and the other obligations on a parity therewith. See "SECURITY AND SOURCES OF PAYMENT FOR THE 1998 ORDINANCE BONDS – **Order of Application of Revenues**" above and APPENDIX E – "SUMMARY OF THE 1998 GENERAL ORDINANCE – **Order of Application of Gas Works Revenues**."

As of the date of this Official Statement, the City does not expect to enact any bond ordinances that pledge all, or a portion of, the Gas Works Revenues for the security and payment of any bonds and notes other than the 1998 Ordinance Bonds and the Gas Works Notes.

As described under "POTENTIAL LNG FACILITIES EXPANSION," PGW does not at this time anticipate financing the expansion at either of its LNG facilities through the issuance of debt by the City.

POSSIBLE FUTURE PGW RELATED FINANCINGS

Financing of Capital Improvements

Planned Fiscal Year 2020 Issuance

The Independent Consultant's Engineering Report incorporates forecasts by PGW of a future debt issuance of $180.0 million in Fiscal Year 2020 to fund a portion of PGW's ongoing Capital Improvement Program. PGW currently has a financial target of funding approximately 50% of its ongoing Capital Improvement Program from internally generated funds with the remaining portion funded from debt. Budgeted and projected PGW Capital Improvement Program expenditures for the five-year period ending August 31, 2022 total approximately $576 million, inclusive of capital expenditures for pipeline replacement discussed below under "- Infrastructure Replacement." Such prospective debt issuance in 2020 may be in the form of 1998 Ordinance Bonds or bonds issued pursuant to one or more new City ordinances as described above under "OTHER DEBT OBLIGATIONS PAYABLE FROM GAS WORKS REVENUES − **Additional Bond Ordinances**." See APPENDIX B – "INDEPENDENT CONSULTANT'S ENGINEERING REPORT." If the CP Capital Project Notes are refinanced with Approved Bonds, then associated debt service would be included in the PUC rates under the 2010 PUC Policy Statement (as defined below). See "GAS SERVICE TARIFF AND RATES – **Rates** – *Ratemaking Methodology to Account for Bond Covenants*."

No Planned PGW-Financed Expansion of LNG Facilities

PGW is currently studying the feasibility of expanding the liquefaction capacity of its Richmond and Passyunk plants. PGW has engaged in preliminary discussions with two proposers who responded to a request for proposals issued by PGW and who would purchase LNG. Those discussions contemplate that the financing and construction of any facilities (to be operated by PGW) needed to provide the liquefaction capacity and the financial liability therefor would be the sole obligation of the proposer, with PGW's sole obligation being to operate the facilities. All discussions are preliminary. There is no assurance that the LNG facilities, as described above, will be built, or that the proposed structure will not change. Because at the present time PGW does not anticipate a project for which it would incur debt or, in the normal course of business, incur expenses in excess of the revenue it estimates it will receive from the LNG expansion, the Independent Consultant's Engineering Report does not take into account any potential expansion of the LNG facilities. Also see, "POTENTIAL LNG FACILITIES EXPANSION."

Infrastructure Replacement

In its April 21, 2015 report relating to a PUC-initiated inquiry and analysis of PGW's infrastructure replacement program, the PUC staff identified the issuance of additional debt as one possible means of financing PGW pipeline and other infrastructure replacements. See "PHILADELPHIA GAS WORKS – **Governmental Oversight** – *PUC April 2015 Report*" below. Such debt, if any, may be issued as 1998 Ordinance Bonds (including CP Capital Project Notes) or pursuant to one or more new City ordinances as described above under "OTHER DEBT OBLIGATIONS PAYABLE FROM GAS WORKS REVENUES − **Additional Bond Ordinances**."

The PUC in January 2016 granted PGW's request to increase its Distribution System Improvement Charge (DSIC) surcharge from 5.0 percent to 7.5 percent of non-gas revenues. The increase, from $22 million to approximately $31-33 million per year, will generate approximately $11 million in additional revenue to fund PGW's accelerated pipeline replacement program, which PGW is allowed to recover on a pay-as-you-go-basis through the DSIC surcharge.

This approximately $31-33 million per year of DSIC revenue is in addition to the $20 million funded through base rates for cast iron replacement. PGW has not issued any long-term debt to fund the accelerated replacement program.

PGW may request future increases to the DSIC once the 7.5 percent DSIC has been in place for a period of two years and PGW has had the opportunity to evaluate the effect of such increase on risk to PGW's system and customers and PGW's ability to effectively implement the level of accelerated pipeline replacement associated with the 7.5 percent DSIC (or higher levels) but no assurance can be given that such request will be made or if made, approved.

See also "Rates and Tariffs – Infrastructure Replacement" in APPENDIX B – "INDEPENDENT CONSULTANT'S ENGINEERING REPORT."

PERMITTED SECURITIZATION OF REVENUES RELATED TO NON-PERFORMING ASSETS

The 1998 General Ordinance permits the City to securitize and sell that portion of the Gas Works rents, rates and charges that relate to assets which are designated as non-performing by the PUC and as to which the PUC has designated specific rents, rates or charges.

Prior to any such securitization and sale, the City must deliver to the Fiscal Agent (1) an engineer's report including a statement that, for the three year period following such securitization and sale, the Gas Works rents, rates and charges (excluding those securitized and sold) are currently and will be sufficient to comply with the Rate Covenant described under the heading "SECURITY AND SOURCES OF PAYMENT FOR THE 1998 ORDINANCE BONDS − **Rate Covenant and Rate Requirements**" above applied as if the percentage in subsection (a)(iii) thereof were 175% rather than 150% and (2) an opinion of bond counsel that such securitization and sale will not adversely affect the exclusion from gross income for federal income tax purposes of interest on any outstanding 1998 Ordinance Bonds the interest on which is intended to be so excluded. Proceeds received from any such securitization and sale shall be excluded from Gas Works Revenues in all calculations relating to the Rate Covenant and, notwithstanding any provision of the 1998 General Ordinance to the contrary, may be used to redeem or refund obligations issued to finance the related assets designated as non-performing.

Any and all Gas Works rates, rents and charges that are securitized and sold as described under this heading, do not constitute Gas Works Revenues and would not serve as security for or a source of payment of the 1998 Ordinance Bonds (including the Bonds). As of the date of this Official Statement, no PGW assets have been designated as "non-performing."

REMEDIES OF BONDHOLDERS

General

Remedies under the Act and the 1998 General Ordinance available to Holders of 1998 Ordinance Bonds, including Holders of the Bonds, and to any trustee for Bondholders appointed by the Holders of 25% in principal amount of any Series of 1998 Ordinance Bonds in default, are described in the summary contained in APPENDIX E hereto. In addition to the remedies described therein, Bondholders, the Fiscal Agent, as representative of the Bondholders, or a trustee for the Bondholders are entitled under the Pennsylvania Uniform Commercial Code to all remedies of secured parties in respect of (i) the Gas Works Revenues and the funds on deposit in the Sinking Fund and (ii) the Sinking Fund Reserve if such bonds are secured by the Sinking Fund Reserve. So long as DTC or its nominee is the Registered Owner, the remedies of Beneficial Owners are exercisable through the procedures established by DTC.

Limitation on Remedies of Bondholders

The ultimate enforcement of Bondholders' rights upon any default by the City in the performance of its obligations under the 1998 General Ordinance will depend upon the application of remedies provided in the Act, the 1998 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 that are subject to the discretion of the courts.

The rights and remedies of Bondholders with respect to the City's obligations under the Bonds could be significantly limited by the provisions of Chapter 9 of the United States Bankruptcy Code ("Chapter 9"). Chapter 9 permits, under prescribed circumstances (and only after an authorization by the applicable state legislature or by a governmental office or organization empowered by state law to give such authorization), a "municipality" of a state to file a petition for relief in a bankruptcy court of the United States if it is insolvent or unable to meet its debts as they mature, and it desires to effect a plan to adjust its debt. Chapter 9 defines "municipality" as a "political subdivision or public agency or instrumentality of a State." Thus, for purposes of Chapter 9, except as may be limited by state law, the City would be considered a "municipality." As a result of the commencement of a federal bankruptcy case by the City, Bondholders could experience delays in receiving Bond payments, as well as partial or total losses of their investments in the Bonds.

The Pennsylvania Intergovernmental Cooperation Authority Act for Cities of the First Class (Pa. P.L. 9, No.6 (1991)) (the "PICA Act"), prohibits the City from filing a petition for relief under Chapter 9 of the United States Bankruptcy Code so long as the Pennsylvania Intergovernmental Cooperation Authority ("PICA") has outstanding any bonds issued pursuant to the PICA Act. As of June 30, 2017, the principal amount of PICA bonds outstanding was $213,945,000, and the final maturity date of such bonds is June 15, 2023. Furthermore, if no PICA bonds are outstanding, the PICA Act requires approval in writing by the Governor of the Commonwealth for a filing under Chapter 9 by the City, and of the City's proposed plan, after the Governor holds a hearing as required by the PICA Act. If the Governor were to grant an approval for the City to file a petition under Chapter 9 and approve the City's plan, and the City were to so file, provisions of the United States Bankruptcy Code could limit the enforcement of Bondholders' rights and remedies. See "THE CITY OF PHILADELPHIA GOVERNMENT AND FINANCIAL INFORMATION – **Local Government Agencies** – *Non-Mayoral-Appointed or Nominated Agencies* – PICA" in APPENDIX C hereto.

The filing of a bankruptcy 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 application of pledged "special revenues" (as defined in the United States Bankruptcy Code) to the payment of indebtedness secured by such revenues. Special revenues include receipts derived from the ownership or operation of systems that are used to provide utility services and the proceeds of borrowings to finance such systems. The Bankruptcy Code further provides that special revenues acquired by the debtor after 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.

The lien on special revenues derived from a system, however, will be subject to the payment of the necessary operating expenses of that system. Therefore if Gas Works Revenues are determined by a bankruptcy court to constitute "special revenues" within the meaning of Chapter 9, then Gas Works Revenues acquired by the City before and after the filing of a Chapter 9 petition will remain subject to the lien and security interest of the 1998 General Ordinance in favor of Holders of the 1998 Ordinance Bonds, but would be subject to the payment of PGW's necessary operating expenses as determined by the City.

If the pledged Gas Works Revenues could not support both the debt service requirements and operating expenses of PGW, it is possible that payments to Holders of the Bonds could be reduced. ***No representation is made that a bankruptcy court will determine that the Gas Works Revenues constitute "special revenues" within the meaning of Chapter 9.***

Unless a debtor consents or the plan proposed under Chapter 9 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, if the City were permitted by State law to use the proceeds of the Bonds and the Gas Works Revenues pledged for the benefit of the Bondholders other than to benefit the Gas Works, and decided to do so, it is unclear whether a bankruptcy court would have the power to interfere with that decision. Even if a bankruptcy court had such power, the court, in the exercise of its equitable powers, could refuse to require the City to use the proceeds of the Bonds or the Gas Works Revenues to pay Holders of the Bonds, could permit a subordination of the liens to new bonds if the former were found more than "adequately protected" or could avail itself of a broad range of equitable remedies.

PGW is a component unit of the City and any filing by the City under Chapter 9 could occur under circumstances where the City's general financial condition has deteriorated without regard to the results of operations or the financial position of PGW. No assurances can be provided that any Chapter 9 filing by the City due to circumstances unrelated to PGW would not still adversely affect PGW.

Regardless of any specific adverse determinations in a City bankruptcy proceeding, the existence of such a proceeding could have a materially adverse effect on the liquidity and value of the Bonds.

INDEPENDENT CONSULTANT'S ENGINEERING REPORT

The Independent Consultant's Engineering Report prepared by Black & Veatch, contained herein as APPENDIX B, has been included in reliance upon the expertise of that company as an independent consulting firm having broad experience in the design and analysis of the operation of gas works or gas distribution systems of the magnitude and scope of PGW and having skill in assessing assumptions used in the preparation of forecast financial statements of gas works systems.

As described in certain of the assumptions below, and as further detailed in the Independent Consultant's Engineering Report, in certain instances Black & Veatch has primarily evaluated projections for the period through Fiscal Year 2022 and has considered PGW's capital improvement program only through Fiscal Year 2022 in reaching the conclusions expressed in its opinions (described below).

Among the subjects of the Independent Consultant's Engineering Report are the issuance of the Bonds and the expected issuance of 1998 Ordinance Bonds during Fiscal Year 2020 to finance a portion of PGW's then current Capital Improvement Program.

In connection with the authorization of the Fourteenth Supplemental Ordinance, Black & Veatch prepared a Prior Engineer's Report, dated June 13, 2017. Such Prior Engineer's Report, among other things, assumed, based upon PGW's February 27, 2017 filing with the PUC for an increase in its base rates, that PGW would realize $70.0 million in revenue enhancements, cost savings, or base rate increases on a levelized annual basis beginning in Fiscal Year 2018. PGW subsequently has negotiated, and submitted on July 21, 2017 to the PUC, the Settlement Agreement (as hereafter defined) related to such base rate request whereby PGW would realize $42.0 million in base rate increases on a levelized annual basis beginning in Fiscal Year 2018. See "GAS SERVICE TARIFF AND RATES – Rates – *2017 General Rate Relief Filing*" below. In light of such developments, PGW requested Black & Veatch to prepare the Independent Consultant's Engineering Report for use in connection with the offering and sale of the Bonds. In particular, readers are directed to assumptions #7 and #8 under "Assumptions –*Revenues*" below and assumption #1 under "Assumptions – *Operating Revenues*" below which reflect certain new or changed assumptions since the time of the June 13th Prior Engineer's Report. Investors should read the Independent Consultant's Engineering Report in its entirety and should not rely upon the June 13th Prior Engineer's Reports in evaluating whether to make an investment in the Bonds.

The following is a summary of certain assumptions and opinions of Black & Veatch, stated in their entirety in the Independent Consultant's Engineering Report. This section, "INDEPENDENT CONSULTANT'S ENGINEERING REPORT," is in all respects subject to the complete text of the Independent Consultant's Engineering Report, which is contained herein as APPENDIX B.

Assumptions

Black & Veatch stated that in preparing the Independent Consultant's Engineering Report it relied on PGW's financial planning model and PGW's assumptions contained within that model with several exceptions as noted in the Independent Consultant's Engineering Report. Black & Veatch stated that the analyses summarized in the Independent Consultant's Engineering Report were based on assumptions provided by or reviewed by PGW and others and it relied on currently available information and present circumstances. Black & Veatch stated that it did not conduct verification tests of this information. Black & Veatch stated that although it believes that these data and underlying assumptions are reasonable, actual results may materially differ from those projected, as influenced by conditions, events, and circumstances that actually occur that are unknown at this time and/or which are beyond the control of Black & Veatch.

The following is a partial list of critical assumptions used by Black & Veatch in the development of the projections contained in the Independent Consultant's Engineering Report.

Revenues

1. The PUC will comply with its statutory obligations, requiring that the PUC, in determining PGW's revenue requirement and approving overall rates and charges, "follow the same rate-making methodology and requirements that were applicable to [PGW] prior to the assumption of [rate-setting] jurisdiction by the [PUC]" and permit PGW to

"impose, charge and collect rates or charges as necessary to permit… PGW to comply with its covenants to the holders of any approved bonds."

2. The throughput and revenue figures are based on the assumption of normal weather. To the extent that weather is warmer than normal, the resulting contribution margin will be maintained to the extent that the Weather Normalization Adjustment ("WNA") described in "GAS SERVICE TARIFF AND RATES — **Rates**" remains in effect.

3. Projected revenue figures are based on the assumption that PGW will recover, in a timely manner, 100% of all gas supply costs (including upstream transportation, upstream storage, and LNG related costs) and 100% of the costs (or discounted revenues) attributed to the Customer Responsibility Program, Customer Works Program, Senior Citizen Discount Program, restructuring transition costs, and costs attributable to PUC mandated programs such as those indicated in Chapters 56 and 59 of the Public Utility Code (less certain avoided costs).

4. If PGW were unable to meet the rate covenants required under the 1998 General Ordinance, PGW would then have to reduce expenditures, develop other sources of Gas Works Revenues, and/or file for and receive timely rate relief.

5. If lost margins resulting from customers' reducing usage due to Demand Side Management programs are significant, PGW will file for additional base rate increases.

6. PGW's current Distribution System Improvement Charge ("DSIC") surcharge described in "GAS SERVICE TARIFF AND RATES — **Surcharges**" will allow the recovery of $31.0 million to $32.0 million in annual revenues to fund annual capital improvements. The PUC will continue to provide either rate increases or surcharges to fund these expenditures. If the PUC determines that PGW's cast iron main replacement should be accelerated above current levels, the PUC will also provide rate increases or surcharges to fund the additional expenditures.

7. PGW will realize $42.0 million (based on 20-year normal weather) in base rate increases on a levelized annual basis beginning in Fiscal Year 2018.

8. PGW will realize $40.0 million in revenue enhancements, cost savings, or base rate increases on a levelized annual basis beginning in Fiscal Year 2021.

Operating Expenses

1. PGW's annual bad debt expense will range from $28.8 to $33.0 million and PGW's collection factor on billed revenues will be 96% during the projected Fiscal Years 2018-2022 period.

Debt Service

1. The debt service and interest costs reflect the refunding of the outstanding CP Capital Project Notes and the new bond issue projected in 2020. If PGW refunds additional bonds, it is assumed that such additional refunding will result in a reduction in interest costs and annual debt service from the levels reflected in the Independent Consultant's Engineering Report.

Capital Improvement Program (Fiscal Years 2018-2022)

1. The planned capital improvements will be completed at the levels budgeted, for the projects currently planned and within the time frame projected.

2. Projected levels of capital improvements that are paid for by internally generated funds are assumed to comply with PGW's internal policies for financing capital improvements with other funding sources.

The City

1. PGW will make an annual payment to the City in Fiscal Years 2017 through 2022 of $18.0 million.

Opinions

In its Independent Consultant's Engineering Report, which is attached hereto as APPENDIX B, Black & Veatch has opined and concluded, based upon its investigation and assumptions set forth in the Independent Consultant's Engineering Report, that:

1. PGW is a competently managed and operated gas distribution utility. PGW and PGW's gas works system (the "System") are organized, operated, and maintained at a level equal to, or in excess of, regulatory requirements and generally accepted industry practices. The System is in good operating condition.

2. Based upon Black & Veatch's evaluation of financial projections and certain assumptions with respect to the System, which Black & Veatch believes to be reasonable, and on the basis of actual and estimated future annual financial operations of the System, the System should yield Gas Works Revenues (which are pledged under the 1998 General Ordinance) over the amortization periods of the outstanding 1998 Ordinance Bonds and the Bonds, which will be sufficient to: (a) pay all expenses of operation, maintenance, repair and replacement of the System, (b) satisfy the deposit and payment requirements of all reserve or special funds required to be established under the 1998 General Ordinance, (c) pay the principal of and interest on all 1998 Ordinance Bonds (including the Bonds) issued under the 1998 General Ordinance as the same shall become due and payable, and (d) provide such surplus requirements as are contained in the respective rate covenant of the 1998 General Ordinance. The Gas Works Revenues forming the basis of the opinion comply with the requirements of the definition of Project Revenues contained in Section 2 of the Act.

3. The Gas Works Revenues which are pledged as security for the bonds issued under the 1998 General Ordinance are currently, and are projected to be, sufficient to comply with the rate covenants set forth in Section 4.03(b) of the 1998 General Ordinance. See "SECURITY AND SOURCES OF PAYMENT FOR THE 1998 ORDINANCE BONDS – **Rate Covenant and Rate Requirements**" and APPENDIX E – SUMMARY OF THE 1998 GENERAL ORDINANCE – **Rate Covenant**."

4. The capital improvements proposed during the projection period, September 1, 2017, through August 31, 2022, should, along with continued good operation and maintenance practices, enable PGW to maintain the System in good operating condition. Review of present management practices indicates that good operation and maintenance is likely to continue.

5. Contracted PGW gas supplies plus: (a) spot market purchases, (b) anticipated additional contracted supplies plus supplemental gas capacities, and (c) the pipeline transport capacity to move these supplies to PGW, appear adequate to meet PGW's projected demand on a day of maximum demand (a "design peak day"), in an hour of maximum demand (a "design peak hour"), and during a year of maximum demand (a "design peak year").

PHILADELPHIA GAS WORKS

General

PGW, formed in 1836, is principally a gas distribution facility. It is a component unit of the City and is the largest municipally-owned gas utility in the nation. PGW sells natural gas within the City, its service territory, and is the exclusive distributor of natural gas within the limits of the City. PGW maintains a distribution system with approximately 3,030 miles of gas mains and approximately 478,267 service lines serving approximately 502,000 customers as of August 31, 2016.

PGW consists of real and personal property owned by the City and used for the acquisition, manufacture, storage, processing and distribution of natural gas in the City, and all property, books and records employed and maintained in connection with the operation, maintenance and administration of PGW. In addition to an extensive distribution system, PGW operates facilities for the liquefaction, storage and vaporization of natural gas to supplement gas supply taken directly from interstate pipeline and storage companies. Such storage facilities include two LNG plants.

In addition to the information under this heading, additional information about PGW is found in other sections of this Official Statement:

For a discussion of PGW's facilities, see "THE GAS WORKS FACILITIES" and "THE CAPITAL IMPROVEMENT PROGRAM."

For a discussion of PGW's revenues and expenses, see "PGW BUDGETS AND FINANCES," "GAS SERVICE TARIFF AND RATES," "MANAGEMENT'S DISCUSSION AND ANALYSIS OF RESULTS OF OPERATIONS AND FINANCIAL CONDITION FOR THE NINE MONTHS ENDED MAY 31, 2017 AND 2016 (UNAUDITED)" and APPENDIX A – "COMPREHENSIVE ANNUAL FINANCIAL REPORT FOR FISCAL YEARS ENDED AUGUST 31, 2016 AND 2015 OF THE PHILADELPHIA GAS WORKS – **Financial Section**."

For additional information regarding PGW, see APPENDIX B – "INDEPENDENT CONSULTANT'S ENGINEERING REPORT."

For information about the City, see APPENDIX C – "THE CITY OF PHILADELPHIA GOVERNMENT AND FINANCIAL INFORMATION." APPENDIX D – "THE CITY OF PHILADELPHIA SOCIOECONOMIC INFORMATION" includes information about the City and its residents such as the City's population, demographics, employment and unemployment conditions, median family and household incomes and cost-of-living index.

Management

Governance of the Gas Works

The Philadelphia Home Rule Charter (as defined in APPENDIX E) and the Management Agreement, which was adopted by an ordinance passed on December 29, 1972 (Bill No. 455, as subsequently amended), establishes the governance structure through legislation regarding the (i) ownership of PGW property and functioning of PGW by the City; (ii) approval by the City Council of capital budgets and certain gas supply contracts for PGW; (iii) the powers and duties granted to the Gas Commission; and (iv) provisions of executive management functions and directions for operation of PGW facilities by PFMC.

PGW personnel are responsible for the day-to-day management of the construction, operation and maintenance of the gas system. PGW's management organization is set forth in the table "Philadelphia Gas Works Organization Chart" on page 14 of the Independent Consultant's Engineering Report attached hereto as APPENDIX B. Any changes in governance of PGW must be made pursuant to ordinances adopted by the City Council.

In addition, PGW's rates are regulated by the PUC under the Pennsylvania Natural Gas Choice and Competition Act No. 1999 21, PL. 122, 66 Pa. C.S. Section 2201 et seq. (the "Gas Choice Act"). See "**- Governmental Oversight –** *The PUC*."

Management Agreement

PFMC has operated PGW pursuant to the Management Agreement since January 1, 1973. The Management Agreement authorizes PFMC to manage and operate all the property, real and personal, collectively known as the Gas Works, for the sole and exclusive benefit of the City and establishes PFMC's primary obligation as applying the highest standards of management practice and diligence to the operation of the Gas Works.

The Management Agreement and any amendments thereto are authorized by ordinances of the City Council. The Management Agreement has a two-year term, which, upon execution, is automatically extended for another two-year term, provided the City has not exercised its right of cancellation. The City can cancel the Management Agreement at any time by providing PFMC a 90-day notice of cancellation. Any such cancellation, however, must be approved by resolution or ordinance of the City Council.

The Management Agreement grants the Gas Commission certain specified powers and duties and all other powers not specifically granted to PFMC. The powers and duties granted to the Gas Commission include: (i) approval of personnel provided by PFMC, (ii) review of gas supply contracts for approval by City Council, (iii) approval of changes in tests and standards of gas quality and pressure, (iv) approval of PGW's operating budget, (v) review of PGW's capital budgets and recommendations thereon to City Council, (vi) approval of certain short-term loans (but not the issuance of bonds), (vii) access to and review of all books, records and accounts of PGW, (viii) prescription of insurance requirements, (ix) promulgation of standards for procurement and disposal of material, and procurement of supplies and services, and (x) approval of all real property acquisitions for further approval of City Council.

Under the Management Agreement, PFMC is responsible for providing executive management of PGW. Various aspects of PFMC's management of PGW are subject to review and approval by the Gas Commission, including approval of the PGW chief executive officer, chief operating officer and the chief financial officer, and, where authorization by the City Council is required, recommendation of the City's Director of Finance and/or the Gas Commission. The Management Agreement sets forth various responsibilities for the Gas Commission's oversight of the operations of PGW. The City's Director of Finance oversees certain financial practices of PGW. The Management Agreement designates the City's Law Department as the designated legal advisor to the Gas Commission and PGW. The Law Department has assigned the representation of PGW to the Office of General Counsel of PGW. See "— **Governmental Oversight** — *Gas Commission*" and "PGW BUDGETS AND FINANCES — **Budget Approval**" for additional discussions of the Gas Commission.

PFMC Board

The PFMC Board of Directors consists of seven members appointed by the Mayor of the City. Each member is appointed to a two-year term and serves until his successor is duly qualified and seated. The following are the current members of the PFMC Board of Directors:

Current Members	**Title**	**Term Began**
Seth Adam Shapiro, Chief Operating Officer, The Goldenberg Group Member, Audit/Finance Committee	Chairman	2/19/2016
Marian Tasco Former Majority Leader, Philadelphia City Council Member, Workforce Development Committee	Vice Chairwoman	4/05/2016
Catherine M. Paster, First Deputy Finance Director, City of Philadelphia Member, Audit/Finance Committee	Treasurer	1/27/2012
Leigh Whitaker, Director of City Relations, University of Pennsylvania Chair, Workforce Development Committee	Secretary	4/05/2016
James Engler, Deputy Mayor for Policy and Legislation, City of Philadelphia Member, Workforce Development Committee	Member	2/16/2016
Albert Mezzaroba, Of Counsel, Genova Burns, Chairman, Audit/Finance Committee	Member	4/05/2016
Louis Rodriguez, President, Rodriguez Consulting LLC Member, Workforce Development Committee	Member	4/05/2016

PGW Senior Officers

The following are brief biographical descriptions of PGW's current senior officers:

Craig E. White, President and Chief Executive Officer. Mr. White is the President and Chief Executive Officer of PGW. Mr. White started with the organization in 1980. During his 37 years of service, he progressed through the ranks and in March of 2011 he was elevated to his present position as President and Chief Executive Officer. Mr. White received a Bachelor of Science Degree from Kutztown University. He is a graduate of Drexel University's MBA Program and has completed executive development programs at Drexel University and Harvard Business School. Mr. White is actively involved in community service through his affiliation with the Citizens Crime Commission as well as industry and professional organizations. He serves on the Board of Directors of the American Gas Association, Aria Health System, and the National Petroleum Council. He also serves on the Board of the Energy Association of Pennsylvania and is the past Chairman as well as former Executive Board Member of the American Public Gas Association.

Douglas A. Moser, Executive Vice President and Acting Chief Operating Officer. Mr. Moser started with the Philadelphia Gas Works in 1979. During his 38 years of service, he progressed through the ranks and in 2012 he was elevated to his present position as Executive Vice President and Acting Chief Operating Officer. Mr. Moser received his Bachelor of Science degree in Chemical Engineering from Pennsylvania State University and his Master in Business Administration degree from Widener University. He serves on the Gas Board of the Energy Association of Pennsylvania, the Board of Directors of the American Public Gas Association, and the Leadership Council of the American Gas Association.

Joseph F. Golden, Jr., Executive Vice President and Acting Chief Financial Officer. Mr. Golden was appointed Executive Vice President and Acting Chief Financial Officer in March 2012. In this capacity he is responsible for the treasury, accounting, budgeting, and finance functions. Prior titles held by Mr. Golden at PGW include: Controller, Treasurer, Manager Treasury Department, Senior Staff Accountant, and Staff Accountant. Mr. Golden started his career with PGW in August of 1986. Mr. Golden has prior work experience in public accounting, treasury accounting and cash management, and manufacturing. Mr. Golden holds a Bachelor of Science degree in Accounting from Villanova University, a Master of Business Administration degree from Drexel University, and received his Juris Doctor (*cum laude*) from Temple University School of Law.

Charles J. Grant, Senior Vice President – Human Resources, Labor, and Corporate Communications. Mr. Grant was appointed Senior Vice President in April 2016. Previously, Mr. Grant held the title of Chief of Staff in the Office of the President and Chief Executive Officer. He held the same position in the Office of the Executive Vice President and Chief Operating Officer when he joined PGW in June 2010. In his current position, he is responsible for human resources, organizational development, and staffing. His responsibilities also include oversight and enforcement of PGW's labor contracts and PGW security. He is also responsible for media relations, crisis communications, community partnerships, government affairs, internal communication, digital communication/social media and advertising campaign development. Prior to joining PGW, Mr. Grant was the owner and managing partner in the law firm of Grant & Lebowitz, LLC. Mr. Grant also served as the Chief of the Homicide Unit for the Philadelphia District Attorney's Office, Deputy District Attorney in the Los Angeles County District Attorney's Office, and an adjunct professor at the Beasley School of Law, Temple University. Mr. Grant earned his Bachelor of Arts degree from the Honors College of Ohio University and his Juris Doctor degree from Georgetown University Law Center.

Raymond M. Snyder, P.E., Senior Vice President – Gas Management. Mr. Snyder was appointed Senior Vice President – Gas Management in March 2015. Mr. Snyder began his career at PGW over 36 years ago in the Engineering Department. He continued in Engineering until he reached the level of Manager. Mr. Snyder moved into Operations as the Director of Systems Administration and then as Director of Gas Processing. In his current position, Mr. Snyder is responsible for Gas Processing, Engineering, Gas Acquisition, Transportation & Gas Control, as well as PGW-owned and -leased properties. Mr. Snyder serves as a member and former Vice-Chair of the American Gas Association Supplemental Gas Committee. Mr. Snyder received his Bachelor of Science in Civil Engineering from the Pennsylvania State University and his Master of Science in Engineering Management from Drexel University. He is a licensed professional engineer in Pennsylvania.

Eloise N. Young, Senior Vice President, Strategic Planning and Information Services. Ms. Young was named Senior Vice President in April 2016 where she has oversight of Strategic Planning and the Information Services Department. Prior to her appointment, she served in a number of positions in PGW's Information Services Department including Chief Information Officer, Director of Technical Strategy and Support, Manager of Systems Services, System Administrator in both the Unix and CICS environments, Database Administrator, and applications developer. She received a Bachelor of Science degree in Information Technology from the University of Phoenix in 2003 and a Generalist Master of Business Administration from Rosemont College in 2014.

Raquel N. Guzmán, Esq., Vice President – Legal and General Counsel. Ms. Guzmán has held various positions within PGW's Legal Department since joining the department in 1998. She was appointed General Counsel in February 2016. Prior to joining PGW's legal staff, Ms. Guzmán was a Deputy City Solicitor for Regulatory Affairs for the City and also practiced at a major Philadelphia law firm in its real estate department. She holds a Juris Doctor degree from the University of Pennsylvania Law School and an undergraduate degree from Harvard College.

Gregory J. Stunder, Esq., Vice President – Regulatory and Legislative Affairs. Mr. Stunder joined PGW's Legal Department in 2001 and was appointed Vice President – Regulatory & External Affairs in January 2015. While in PGW's Legal Department, Mr. Stunder represented PGW in regulatory and legislative matters relating to base rate and gas cost rate proceedings, main replacement, gas choice and PGW's operations. In his current position, Mr. Stunder's primary responsibility is working with the President and CEO and other members of senior management regarding certain matters relating to the Pennsylvania Public Utility Commission, the Pennsylvania General Assembly and other governmental departments and agencies. Prior to attending law school, Mr. Stunder was a Certified Public Accountant and he managed all aspects of the Philadelphia Thermal Energy accounting department (which is now Veolia Energy Philadelphia) including rate matters before the PUC. Mr. Stunder holds a Juris Doctorate from Temple University and a BS in Accounting from LaSalle University.

Additional PGW Senior Staff

The following are brief biographical descriptions of current PGW senior staff:

Kenneth S. Dybalski, Vice President – Energy Planning and Technical Compliance. Mr. Dybalski was appointed Vice President of Energy Planning and Technical Compliance in December 2016. In this capacity, he is responsible for gas planning and services to operations involving gas safety, regulatory compliance, chemical laboratory analyses, and environmental services as well as business continuity planning services. Prior titles held by Mr. Dybalski include: Director, Gas Rates and Planning, Manager, Gas Planning, and Manager, Field Services Operations. Mr. Dybalski has been with PGW since 1979. Mr. Dybalski is a member of the American Gas Association's Operations Safety Regulatory Action Committee. Mr. Dybalski has a Bachelor of Science degree in Civil Engineering/Construction Technology from Temple University and a Master of Business Administration degree also from Temple University.

Raymond J. Welte, Vice President – Field Operations. Mr. Welte was appointed Vice President, Field Operations in November 2014. He is responsible for Philadelphia Gas Works' Distribution, Field Services, and Resource Management Departments. He previously held many positions at PGW since commencing employment in October 1978 including: Director Field Operations; Manager Field Service Department; Manager Meter Measurement/Pressure Force; Superintendent of Commercial & Industrial; Supervisor Field Service. He has been an active member of the American Gas Association, Society of Gas Operators, Northeast Gas Association, and the Energy Association of Pennsylvania.

Governmental Oversight

Gas Commission

The Gas Commission was created by the Philadelphia Home Rule Charter. By Ordinance of City Council, the Gas Commission is a five-member body consisting of the City Controller, two members appointed by City Council and two members appointed by the Mayor. The Management Agreement vests in the Gas Commission the responsibility for overseeing the operation by PFMC of PGW. The City Controller serves during his incumbency as City Controller. The members appointed by the City Council and the Mayor each serve for terms of four years and hold office until their successors are appointed and qualified.

The ordinance authorizing the Management Agreement grants the Gas Commission certain specified powers and duties and other powers not specifically granted to PFMC including: approval of certain personnel provided by PFMC; review of gas supply contracts and contracts for the distribution or transmission of gas for approval by City Council; approval of changes in tests and standards of gas quality; approval of PGW-established gas pressure; initial approval of PGW's operating budget; review of PGW's capital budgets and recommendations thereon to City Council; approval of short-term loans (but not issuance of bonds); access to and review of all books, records and accounts of PGW; prescription of insurance requirements; promulgation of standards for procurement and disposal of material, supplies and services and initial approval of all real property acquisitions, sales and leases for further approval by the City Council.

The PUC

The PUC was created by Pennsylvania statute and consists of five members appointed by the Governor of the Commonwealth, with the consent of the Pennsylvania Senate. Each member serves a five-year term and until his or her successor is appointed and qualified. The PUC conducts reviews of various aspects of PGW and the other utilities for which it establishes rates. The PUC has implemented various substantive and procedural regulations regarding the supervision of those utilities. PGW's rates are established by the PUC under the Commonwealth's Public Utility Code (the "Code") by virtue of the Gas Choice Act, subject to certain limits on the PUC's authority as described under "GAS SERVICE TARIFF AND RATES – **Rates** – *Ratemaking Methodology to Account for Bond Covenants*." Also see APPENDIX B – "INDEPENDENT CONSULTANT'S ENGINEERING REPORT – **Organization and Management** – *Pennsylvania Public Utility Commission*."

PUC Management Audit of PGW

The PUC conducted a management audit of PGW's operations in Fiscal Year 2015 and the PUC third-party consultant issued a related report dated August 28, 2015. The audit found that all areas were generally functioning adequately and produced certain recommendations. PGW submitted its Implementation Plan Progress Report to the PUC in October 2016. It provides PGW's progress on the recommendations by addressing opportunities for improvement in operational effectiveness while improving service to customers. Of the seventy-six recommendations, PGW accepted sixty-two of them completely, accepted in-part thirteen, and rejected one. The Implementation Plan Progress Report details the progress on the actions being taken, the expected completion dates and the individuals responsible for implementing each recommendation. Also see APPENDIX B – "INDEPENDENT CONSULTANT'S ENGINEERING REPORT – **Rates and Tariffs** – *Regulation History - 2015 Management Audit*".

PUC April 2015 Report

The most recent renewed PUC assessment of PGW is a Staff Report entitled "Inquiry into Philadelphia Gas Works' Pipeline Replacement Program," released on April 21, 2015 (the "PUC April 2015 Report"). The PUC April 2015 Report states that a renewed assessment of PGW's pipeline infrastructure and pipeline replacement program is necessary because approximately two-thirds of such infrastructure consists of aging cast iron and unprotected steel pipes, "both of which are high risk pipe that pose a potential risk to life and property…." The PUC April 2015 Report concludes that PGW's pipeline replacement efforts are not aggressive enough given the risk of the cast-iron and unprotected steel pipes. The PUC staff identifies several areas that PGW "should explore to increase its main replacement rate to ensure that its customers receive safe, adequate and reliable service." These areas include: increasing the Distribution System Improvement Charge ("DSIC") above the 5.0% cap, changing PGW's current timing for collecting DSIC payments, issuing additional debt to finance pipeline replacement, reducing PGW's cash liquidity by 25% and applying the released funds to pipeline replacement, increasing the funds available for pipeline replacement by having the City waive all or portion of its annual $18.0 million payment from PGW, streamlining PGW governance structure by eliminating the Gas Commission, and consolidating existing facilities.

PGW previously met with the PUC to discuss suggestions made in the PUC April 2015 Report, including matters summarized under this sub-caption. On September 1, 2015, at Docket No. P-2015-2501500, PGW proposed an increase in the DSIC from 5.0% to 7.5% of distribution revenues and to levelize and annualize the DSIC. The PUC issued an Opinion and Order granting PGW's request to increase the DSIC to 7.5% on January 28, 2016 ("January 28 Order"). The increase, from $22 million to $33 million per year, is expected to generate approximately $11.0 million in additional annual revenue to fund PGW's accelerated pipeline replacement program. The January 28 Order also permits PGW to levelize and annualize DSIC recovery, which will provide PGW with more predictable cash flow and may help mitigate over- and under-collections. PGW's increased DSIC charge of 7.5% became effective on February 1, 2016, for service rendered on or after January 1, 2016.

On July 6, 2016, the PUC issued an Opinion and Order that permitted PGW to recover an additional $11.4 million in DSIC under collections for the year ending December 31, 2015, over the course of two years. This results in a temporary increase in the DSIC of an additional $5.7 million a year for two years. Beginning on October 1, 2016, PGW temporarily increased its DSIC surcharge to 8.84% as permitted by the PUC's July 6, 2016 Order. On January 1, 2017, PGW changed its DSIC surcharge percentage to 8.80%, where it remains following PGW's April 1, 2017 DSIC quarterly filing. PGW is considering requesting future increases to the DSIC once the 7.5% DSIC has been in place for a period of two years (i.e., through September 30, 2018) and PGW has had the opportunity to evaluate the effect of such increase on risk to PGW's system and customers and PGW's ability to effectively implement the level of accelerated pipeline replacement associated with the 7.5% DSIC (or higher levels) it may consider.

See the following sections of this Official Statement for discussion of (i) PGW's infrastructure and pipeline replacement activities: "THE CAPITAL IMPROVEMENT PROGRAM," (ii) the DSIC and annual payment to the City: "GAS SERVICE TARIFF AND RATES –**Rates** – *Surcharge*" and "– *Ratemaking Methodology to Account for Bond Covenants*," (iii) PGW governance: "PHILADELPHIA GAS WORKS – **Governmental Oversight"** and (iv) operation of existing facilities: "THE GAS WORKS FACILITIES."

City Council's Special Committee on Energy Opportunities for Philadelphia

By resolution adopted January 29, 2015, the Philadelphia City Council created a Special Committee on Energy Opportunities for Philadelphia, the members of which are City Council members appointed by the Council President. The Committee's charge is to develop "strategies for developing Philadelphia and the region as an energy hub" including by "soliciting conceptual proposals, holding public hearings, and conducting research." The resolution states that the Committee's "scope of work shall include, but not be limited to, identifying strategies for enhancing the Philadelphia Gas Works through such means as reforming its governance or entering into joint ventures and public-private partnerships." The Committee conducted a hearing but does not currently have any scheduled future proceedings or other action items.

Effect of Sale of PGW or its Facilities

No sale of all or substantially all of PGW, its gas operations or its gas facilities can be completed without providing for: (i) the payment and legal defeasance of the City's Outstanding 1998 Ordinance Bonds and Gas Works Notes, (ii) the termination of agreements, including interest rate exchange agreements, relating to such Bonds and Notes, and (iii) the satisfaction by the City of all of its obligations under such agreements, including the payment in full of associated termination costs. Any such sale would be subject to authorization by Philadelphia's City Council and approval by the PUC, except that the City can sell PGW assets no longer useful for gas operations without these approvals.

Also see "PERMITTED SECURITIZATION OF REVENUES RELATED TO NON-PERFORMING ASSETS" above.

Other Federal, Commonwealth and City Oversight

In addition to the Gas Service Tariff (the "Gas Service Tariff") and other rate related regulations promulgated by the PUC (see "– **Gas Service Tariff**" herein), PGW's operations and facilities are subject to laws and regulations, including permitting and approval requirements, promulgated by federal agencies such as the United States Department of Transportation ("USDOT"), the United States Environmental Protection Agency ("USEPA") and the Federal Emergency Management Agency ("FEMA"), state entities such as the Pennsylvania Department of Labor and Industry ("PADLI") and the Pennsylvania Department of Environmental Protection ("PADEP"), the Pennsylvania Emergency Management Agency and local entities such as the Philadelphia Water Department ("PWD"), the Philadelphia Department of Public Health, the Philadelphia Air Management Services ("AMS") and the Philadelphia Office of Emergency Management ("OEM"). In addition, the prices of gas transportation and storage are subject to regulation by the Federal Energy Regulatory Commission ("FERC"), although PGW, its operations and its facilities, are not.

Labor Relations

As of May 31, 2017, approximately 70% of PGW's employees are represented by the Gas Works Employees' Union of Philadelphia Local 686, Utility Workers', Union of America, AFL-CIO ("Local 686" or the "Union"). On June 3, 2015, PGW and Local 686 (the "Parties") tentatively agreed upon a new, five-year Collective Bargaining Agreement ("CBA"). The tentative CBA was approved by the PFMC Board on June 15, 2015 and was ratified by the members of Local 686 on June 17, 2015. The approved and ratified CBA became effective retroactively to May 15, 2015, and expires May 15, 2020.

The CBA includes general wage increases of 2%, 2.5%, 2.5%, 2.5%, and 2.5% effective May 15, 2015, 2016, 2017, 2018, and 2019, respectively. Effective May 15, 2015, there was an increase of 10% to the starting salaries of the current employees in the initial wage step of entry level positions and for employees hired into these entry level positions. All bargaining unit members hired between May 16, 1998 and June 3, 2015 shall be protected from layoff until May 15, 2020. The Parties agreed to an average minimum staffing clause of 590 employees (combined) for Field Service and Distribution Departments' field classifications. The current full complement of applicable Union covered field classified employees is approximately 682. The Parties agreed that shift premiums would increase by $0.25 per hour.

The CBA now permits PGW to freely use outside contractors to perform replacement work on active gas mains and service lines, provided a base mileage of 22 miles of main replacement is budgeted through the course of a Fiscal Year (see "THE CAPITAL IMPROVEMENT PROGRAM"). Under the prior collective bargaining agreement, these tasks could only be performed by members of Local 686. This work includes installing mains of all diameters, connecting mains of all diameters to one another, installing service lines, rebuilding meter sets, and relighting customer appliances after the main has been replaced. Further, outside contractors may be used to abandon mains and service lines (service lines through which gas is actively flowing when the account is no longer active, cold weather surveys, revenue protection issues, and non-payments shut-offs) which are regulated by the PUC.

Insurance, Loss Reserves and Cost Recovery

PGW 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. While self-insured for many risks, PGW purchases insurance coverage when appropriate. PGW's real and personal property is insured against the risk of loss or damage in the amount of $250.0 million, subject to a $0.5 million per accident deductible at the Richmond and Passyunk facilities and a $0.1 million per accident deductible at all other locations. There are separate sublimits for flood and earth movement at select locations. PGW's property insurance includes coverage for damages incurred from a terrorist attack. PGW does not carry first party environmental coverage through which it could access direct payment of claims for environmental remediation costs. In addition, PGW maintains boiler and machinery, blanket crime, directors and officers, fiduciary liability and other forms of insurance.

PGW maintains $210.0 million in liability (including terrorism) coverage against the risk of damage to property or injury to the public with a per occurrence self-insured retention of $1.0 million. PGW is a qualified self-insured employer in the Commonwealth of Pennsylvania for workers' compensation insurance. In addition, PGW maintains Excess Workers' Compensation Liability coverage with a $0.5 million per occurrence retention and Privacy and Security (Cyber) insurance with a $0.3 million per occurrence retention.

PGW maintains $30.0 million Public Officials Liability (Directors and Officers Liability) policy with a $0.5 million retention, as well as a $60.0 million Fiduciary Liability policy with a $0.2 million retention.

The above coverage descriptions are subject to the terms, conditions, and exclusions of the individual policies.

Although PGW is principally insured through insurance carriers, it is required to cover any settlements of claims that are excluded from coverage under the applicable insurance policies. In each Fiscal Year, PGW establishes, in accordance with the Gas Commission regulations, an estimated liability for any such excluded settlements to be paid in such Fiscal Year.

See Notes 1(q) and 14 to PGW's audited financial statements included in APPENDIX A – "COMPREHENSIVE ANNUAL FINANCIAL REPORT FOR FISCAL YEARS ENDED AUGUST 31, 2016 AND 2015 OF THE PHILADELPHIA GAS WORKS – **Financial Section** – Notes to Financial Statements."

PGW has been deemed a "local agency" for purposes of the Pennsylvania Political Subdivision Tort Claims Act ("Tort Claims Act"), 42 Pa.C.S. § 8541 et seq. As such, it is entitled to all protections and immunities from liability provided under the Tort Claims Act. See "LITIGATION" in APPENDIX C – THE CITY OF PHILADELPHIA GOVERNMENT AND FINANCIAL INFORMATION" for further information about the Tort Claims Act.

Costs that exceed the applicable insurance coverage and liability reserves set aside for the applicable events and any retainage that is in excess of such reserve are eligible for inclusion in the Base Rate (see "GAS SERVICE TARIFF AND RATES – **Rates –** *Base Rate*") although any increase in the Base Rate must be approved by the PUC.

Pension Plans and Other Postemployment Benefits

Pension Plans

PGW maintains pension plans covering all eligible employees of PGW and PFMC, which provide certain retirement, death and disability benefits. 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. Union employees hired after May 21, 2011 and Non-union employees hired after December 21, 2011 must make an irrevocable choice within 30 days of hire to participate in either the defined benefit pension plan or the defined contribution plan. As of May 31, 2017, there were 1,647 full time employees. Of these 1,647 employees, approximately 481 were hired after the respective dates noted above. There are 381 Union employees and 100 Non-union employees in this group. The defined contribution plan was chosen by 236 Union employees and 65 Non-union employees for a total of 301 employees. The defined benefit plan was chosen by 151 Union employees and 29 Non-union employees for a total of 180 employees. However, this allocation may not be representative of the choices made by future employees.

There are two actuarial valuations prepared for the PGW defined benefit pension plan each year. The first is a funding valuation ("funding valuation") that sets forth the contribution range for the plan year July 1 to June 30. The second is a valuation for financial reporting purposes ("accounting valuation") that is used to determine the net pension liability and related disclosures to be reported in PGW's annual financial statements. The funding valuation and accounting valuation are for different purposes, use different methodologies and assumptions, and have different results. As noted below, the funding valuation reported that the funded ratio at July 1, 2016 was 69.46%. The similar ratio (net position of the pension plan as a percentage of the pension liability) reported in the accounting valuation and PGW's financial statements as of August 31, 2016 was 62.01%.

PCW Pension Plan – Funding Valuation

PGW's pension plan funded ratio (market value of assets basis) ranged from 86.67% as of the September 1, 2008 actuarial funding valuation date to 65.65% as of the July 1, 2016 actuarial funding valuation date. Over that same period, the unfunded actuarial accrued liability as a percentage of covered payroll ranged from a low of 62.22% as of September 1, 2008 to a high of 278.25% as of July 1, 2016. PGW's actuarial funding valuation prepared for its July 1, 2016 through June 30, 2017 plan year projects a funded ratio (actuarial value of assets basis) increasing from 69.46% as of July 1, 2016 to 74.05% as of July 1, 2025 based on: (i) a funding policy of PGW making employer contributions in accordance with the greater of a 20–year open or 30-year closed amortization period, (ii) assumed investment returns of 7.30% per annum, and (iii) covered payroll projected to increase by 4.5% per year. Such schedule of prospective funded status is subject to the foregoing assumptions and other assumptions which may not be realized. No assurances can be provided that PGW's pension plan funded status will not differ materially from such projections which are expected to be revised annually in connection with future actuarial funding valuations of PGW's pension plan.

PGW Pension Plan – Accounting Valuation

Under Governmental Accounting Standards Board Statement No. 27, Accounting for Pensions by State and Local Governmental Employers (GASB 27), a net pension obligation was recorded for a defined benefit plan on a governmental employer's balance sheet, only to the extent the employer did not contribute at least the actuarially determined annual required contribution (ARC) each year. GASB 27 defines the ARC as the amount sufficient to pay (i) the normal cost and (ii) the amortization of the unfunded actuarial liability over a period not to exceed 30 years. Under GASB 27, PGW had no net pension obligation.

GASB Statement No. 68, Accounting and Financial Reporting for Pensions – an amendment of GASB 27 (GASB 68), and its companion standard GASB Statement No. 71, Pension Transition for Contributions Made Subsequent to the Measurement Date (GASB 71), were effective for PGW's fiscal year beginning September 1, 2014 with retrospective application, to the extent practical, of all periods presented. Under GASB 68, the balance sheet includes PGW's net pension asset or liability related to its defined benefit plan, which is measured as the total pension liability less the amount of the defined benefit plan's fiduciary net position. The total pension liability is actuarially determined based upon discounting projected benefit payments based on the benefit terms and legal agreements existing at the measurement date. Projected benefit payments are required to be discounted using a single rate that reflects the expected rate of return on investments, to the extent that pension assets are available to pay benefits. PGW retroactively applied GASB 68 and 71 as of September 1, 2013, the beginning of its 2014 fiscal year, and its 2014 financial statements were restated to reflect the impact of GASB 68 and 71.

Certain components of the change in the net pension liability are recognized immediately as pension expense in the statement of revenues, expenses and changes in net position each year. For example, changes in the total pension liability resulting from current-period service cost, interest on the total pension liability, and changes of benefit terms are required to be included in pension expense immediately. The portion of the change in the net pension liability attributable to differences between expected and actual experience, changes in assumptions, the net difference between projected and actual earnings on pension plan investments, and contributions made after the measurement date are recognized as deferred inflows or outflows of resources. GASB 68 requires changes in expected versus actual investment returns to be amortized into pension expense over five years, and actuarial assumption changes and experience differences to be amortized over the average remaining years of active employment for Pension Plan participants. The impact of this amortization over time may increase volatility in annual amounts recognized as pension expense compared to amounts recognized under GASB 27 due to shorter permitted amortization periods over which the impact of changes can be smoothed.

The primary initial impact of GASB 68 and 71 was the recognition, as of September 1, 2013, of a net pension liability of $148.7 million and a corresponding decrease in unrestricted net position.

PGW's net pension liability was $296.1 million at August 31, 2016 and $239.9 million at August 31, 2015. Also see APPENDIX A – "COMPREHENSIVE ANNUAL FINANCIAL REPORT FOR FISCAL YEARS ENDED AUGUST 31, 2016 AND 2015 OF THE PHILADELPHIA GAS WORKS – **Financial Section** – Notes to Financial Statements – **(10(e)) – Defined Benefit Pension Plan – Net Pension Liability**", for calculations showing the sensitivity of PGW's net pension liability to changes in the current discount rate used to measure PGW's total pension liability. Pension expense recognized for the year ended August 31, 2016 was $62.3 million, and deferred inflows and outflows related to the pension that will be amortized into expense in future years were $0.00 and $88.0 million, respectively, at August 31, 2016.

Financial information presented in the "PGW BUDGETS, RATES AND FINANCES" and "MANAGEMENT'S DISCUSSION AND ANALYSIS" sections below reflects the impact of GASB 68 and 71 for fiscal years 2016 and 2015, and for the nine month periods ended May 31, 2017 and 2016.

Additional Information

See APPENDIX A – "COMPREHENSIVE ANNUAL FINANCIAL REPORT FOR FISCAL YEARS ENDED AUGUST 31, 2016 AND 2015 OF THE PHILADELPHIA GAS WORKS – **Financial Section** – Notes to Financial Statements – **(10) Defined Benefit Pension Plan**" and APPENDIX C – "THE CITY OF PHILADELPHIA GOVERNMENT AND FINANCIAL INFORMATION – **PGW Pension Plan**" for further information.

Postemployment Benefits

PGW pays the full cost of medical, basic dental, and prescription coverage for employees and their beneficiaries 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. PGW pays 100% of the cost of the prescription drug plan after drug co-pays. Union employees hired on or after May 21, 2011 and Non-union employees hired on or after December 21, 2011 who retire are entitled to receive postretirement medical, prescription, and dental benefits for five years only. Retirees hired prior to those dates receive benefits until either their death or the death of their beneficiary, if such election is made.

Postemployment Benefits – Treatment in Financial Statements.

Under Governmental Accounting Standards Board Statement No. 45, Accounting and Financial Reporting for Postemployment Benefits Other than Pensions (GASB 45), a net other postemployment benefit ("OPEB") obligation is recorded for a defined benefit plan on a governmental employer's balance sheet, only to the extent the employer does not contribute at least the actuarially determined annual OPEB cost (AOC) each year. GASB 45 defines the AOC as the amount sufficient to pay (i) the normal cost and (ii) the amortization of the unfunded actuarial liability over a period not to exceed 30 years.

PGW's net OPEB obligation, including the contributions made from the OPEB surcharge in base rates (see "GAS SERVICE TARIFFS AND RATES – **Rates** – *Base Rate*" below) was $81.4 million and $90.0 million at August 31, 2016 and 2015, respectively. Under GASB 45, PGW's unfunded accrued actuarial liability not yet recognized on the balance sheet at August 31, 2016 and 2015 was $357.9 million and $401.1 million, respectively.

The GASB approved on June 2, 2015 GASB Statement No. 75, Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions (GASB 75). GASB 75 parallels the requirements of GASB 68 and will be effective for years beginning after June 15, 2017, with earlier application encouraged. Under GASB 75, the net OPEB liability will be recognized, representing the portion of the present value of projected benefit payments to be provided to current and inactive employees that is attributed to those employees' past periods of service, less the amount of the OPEB plan's fiduciary net position. Similar to the impact of GASB 68, implementation of GASB 75 is anticipated to result in an increase in liabilities and a decrease in unrestricted net position.

Additional Information

See APPENDIX A – "COMPREHENSIVE ANNUAL FINANCIAL REPORT FOR FISCAL YEARS ENDED AUGUST 31, 2016 AND 2015 OF THE PHILADELPHIA GAS WORKS – **Financial Section** – Notes to Financial Statements – **(11) Other Postemployment Benefits**", APPENDIX B – "INDEPENDENT CONSULTANT'S ENGINEERING REPORT – **Rates and Tariffs** – *Regulation History – 2009 General Rate Relief Filing*" and APPENDIX C – "THE CITY OF PHILADELPHIA GOVERNMENT AND FINANCIAL INFORMATION – **PGW Other Post-Employment Benefits**" for further information.

Litigation

In the ordinary course of its business operations, PGW and PFMC are from time to time sued or threatened with litigation. Most frequently such litigation alleges property damage or personal injury to third parties. However, other forms of litigation also arise from time to time. Such litigation, among other possible subjects, may include environmental-related actions and proceedings in which it may be alleged that the PGW 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. Other than as described in the next paragraphs, (1) PGW is aware of no litigation pending or threatened in which a final adverse determination, singly or in the aggregate, would have a material adverse effect on PGW's operations or financial condition and (2) PGW believes it has set aside sufficient reserves to meet liabilities arising out of litigation to the extent not covered by insurance.

See also "LITIGATION - PGW" in APPENDIX C – "THE CITY OF PHILADELPHIA GOVERNMENT AND FINANCIAL INFORMATION."

Augustin et al. v. City of Philadelphia

Plaintiffs, purporting to represent a class of residential and commercial property owners, seek to enjoin the City from imposing or enforcing gas liens (under the Municipal Claim and Tax Lien Law, Act 153 of 1923, P.L. 207, 53 P.S. §§ 7101, et seq. ("Municipal Lien Act")) on their properties for unpaid charges incurred by their tenants or others living in or utilizing the properties. Plaintiffs, by an action filed in the Federal Court for the Eastern District of Pennsylvania (the "Court") in July 2014, allege that the City (which for this purpose includes the Philadelphia Gas Works) imposes such liens on their properties without meaningful and timely notice to them or opportunity to be heard beforehand, in alleged violation of their federal due process rights.

In February 2016, the Court denied the City's summary judgment motion, identifying certain purported issues of material fact. In March 2016, the Court nevertheless granted the plaintiffs' summary judgment motion, finding that the process employed by the City to impose liens on non-owner occupied properties does violate owners' due process rights. In May 2016, following a hearing, the Court entered a preliminary injunction against the City and PGW restraining them, pending further order of the Court, from filing any new liens against such properties and from collecting upon existing liens. However, the Court permitted the City and PGW to continue to issue payoff statements to facilitate real estate transactions (PGW's typical method of satisfying its liens) on such properties, and to accept the payoffs, but directed it to segregate such money.[1] A hearing on permanent relief and other outstanding issues was held July 26, 2016.

On December 1, 2016, the Court issued an Order and Opinion certifying the class. On January 5, 2017, the Court issued an Order and Opinion addressing the request for permanent injunctive relief; however, the Court partially stayed its Order on February 24, 2017. Currently, pursuant to the Order and the partial stay of same, PGW (a) is prohibited from filing new liens against any property where the owner was not the customer who incurred the debt (subject to court review of new processes to impose such liens), (b) is required to release, vacate and track certain liens for properties in real estate transactions that proceed to closing where the owner is not the customer[2], and (c) is required

[1] A subsequent Order of the Court directed PGW to refund the segregated sums, but this order was stayed by the Court on February 24, 2017.

[2] This requirement applies with respect to all liens attributable to non-owner debt owed to PGW on commercial rental properties, as well as liens attributable to non-owner debt owed to PGW on residential rental properties where the lien was imposed in or after 2009, if the lien was imposed after the owner had obtained a residential rental license.

to continue to segregate funds collected from landlord-owners for non-owner debt between May 4, 2016 and January 25, 2017, as described above.[3]

On January 25, 2017, the City filed a Notice of Appeal with the Third Circuit Court of Appeals. The City's opening brief was filed and served on June 29, 2017. The City intends to vigorously exercise its appellate rights and promote its legal position in the litigation.

At this time, PGW cannot predict the impact that the permanent injunction would have on PGW's collections if the stay is vacated and the requirements of the Order of January 5, 2017 are reimposed by the Court on a permanent basis. As such, PGW can provide no assurances that the impact would not be material to PGW.

SBG Management Services, Inc. v. PGW (various consolidated cases before the PUC)

The above-referenced consolidated cases involve formal complaints filed by a landlord and related entities (collectively, "SBG") challenging, inter alia, the accuracy of its PGW bills, the lawfulness of PGW's billing methodology regarding the application of payments, and the assessment of late payment charges for amounts of unpaid PGW debt liened under the Municipal Lien Act. Various complaints were consolidated into several discrete groups for adjudication and disposition purposes owing to the numerous transactions involved and common questions of law and fact presented.

On September 17, 2015, the Administrative Law Judge assigned to the complaints issued an Initial Decision with respect to the first group ("First Initial Decision")[4,5] of the consolidated complaints, in response to which PGW filed Exceptions on October 7, 2015. On December 8, 2016, the PUC issued an Order and Opinion, granting in part and denying in part the PGW Exceptions. Accordingly, the PUC adopted the First Initial Decision as modified consistent with the discussion contained in the Opinion and Order as summarized below.

Per the Order and Opinion, the PUC found that PGW improperly assessed late payment charges on arrearages that had been liened under the Municipal Lien Act. Under the PUC's analysis, the primary legal effect of the City's having filed municipal liens on the subject accounts was to remove the late payment charges for the unpaid utility bills from the PUC's jurisdiction. Following that line of reasoning, the PUC opined that it lacks jurisdiction to determine what, if any, is the appropriate rate of interest that PGW may charge for such arrearages. The PUC stated that the appropriate remedy therefore was to remove late payment charges from the customers' bills.[6]

In a separate analysis, the PUC also found that the manner in which PGW applied partial payments to outstanding balances is unreasonable and does not conform to PUC policies. (PGW's practice is to apply all payments to any unpaid late payment charges first, before satisfying any amount owed for gas service.)

The PUC ordered that the several accounts that are the subject of the first group of complaints required a total bill credit in the sum of $566,544.97 to correct for charging late payment charges. The PUC also assessed a civil penalty

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[3] Segregated funds totaled approximately $3.75 million as of June 15, 2017.

[4] On November 23, 2015, the Administrative Law Judge assigned to the complaints issued an Initial Decision with respect to a second group of the consolidated complaints ("Second Initial Decision"), to which PGW filed Exceptions on December 14, 2015. The Second Initial Decision for the second group is consistent with the Initial Decision and the Opinion and Order of the first group. The Second Initial Decision ordered that the several accounts that are the subject of the proceedings required a total credit in the sum of $313,157.83, to correct for charging of late payment charges. The Second Initial Decision also assessed a civil penalty of $27,000 for violations of the Public Utility Code. The total liability for consolidated matters in the second group is $340,157.83. The PUC has not issued an Order and Opinion for this group, but the facts are similar to the first group described above, and it is expected that the PUC's treatment of these complaints would ultimately parallel its disposition of the first group currently upon reconsideration.

[5] On February 4, 2016, the Administrative Law Judge assigned to the complaints issued an Initial Decision with respect to a third group ("Third Initial Decision") of the consolidated complaints, to which PGW filed Exceptions on February 24, 2016. That Third Initial Decision is consistent with the First Initial Decision and the Opinion and Order of the first group. That Third Initial Decision ordered that the several accounts that are the subject of the third group of complaints required a total credit in the sum of $157,698.85, to correct for charging of late payment charges. The Third Initial Decision also assessed a civil penalty of $27,000 for violations of the Public Utility Code. The total liability for these consolidated matters in the third group is $184,698.85. The PUC has not issued an Order and Opinion for this group, but the facts are similar to the first group described above, and it is expected that the PUC's treatment of these complaints would ultimately parallel its disposition of the first group currently upon reconsideration.

[6] The Order and Opinion mandated removal of the late payment charges from the bill, but did not per se invalidate the late charges.

of $27,000 for violations of the Public Utility Code. The total liability for the first group of these consolidated matters is $593,544.97.

On December 23, 2016, PGW petitioned the PUC for Reconsideration and Rehearing of this matter including a request to stay the implementation of the Order and Opinion, thus preserving the ability to appeal the matter to the Commonwealth Court. On December 28, 2016, the PUC granted PGW's petition, which operates as a stay, pending review on the merits. PGW is awaiting the PUC's determination on the petition.

At this time, PGW cannot predict the impact that the initial Opinion and Order would have on PGW's collections and collection practices if late payment charges could not be assessed on monthly bills with respect to arrearages that are liened. Further, PGW has not quantified the impact of the PUC's adjustment of PGW's traditional application of payments, described above. As such, PGW can provide no assurances that the impact would not be material to PGW.

Competition

Under the Gas Choice Act all of PGW's customers may choose among natural gas suppliers. PGW offers a Purchase of Receivables and Consolidated Billing Program to other natural gas suppliers. PGW developed the Purchase of Receivables and Consolidated Billing Program to better enable other natural gas suppliers to offer gas to PGW residential and small business and industrial customers. PGW also offers a dual-billing program to natural gas suppliers wherein suppliers bill for their own charges to customers of various classes. If a customer selects a gas provider other than PGW, such customer will be required to use PGW's distribution (also referred to as "transportation") system and pay the distribution charge for such use.

Table 4 shows a breakdown of the components of the average annual bill for residential customers. Customers who select a provider other than PGW will pay the Distribution Rate and Universal Service and Energy Conservation Surcharge components. Note, though, the table does not reflect the costs of natural gas to a customer that selects a different provider.

Table 4
AVERAGE RESIDENTIAL COSTS FOR ALL CUSTOMERS IN A FISCAL YEAR(1)(2)

	2008	2009	2010	2011	2012	2013	2014	2015	2016
Distribution Rate(3)	$554	$634	$658	$717	$682	$698	$785	$714	$726
Universal Service and Energy Conservation Surcharge	177	217	136	180	141	151	144	106	89
Gas Cost Rate	846	904	567	547	381	456	474	471	264
Total	$1,577	$1,755	$1,361	$1,444	$1,204	$1,305	$1,403	$1,291	$1,079

(1) Source: PGW's records.
(2) See "GAS SERVICE TARIFF AND RATES – **Rates**."
(3) Includes the Restructuring and Consumer Education, Efficiency Cost Recovery, OPEB and DSIC surcharges.

PGW customers are classified as residential, commercial, or industrial, with residential and commercial customers accounting for approximately 98% of PGW's non-heating customer base and approximately 87% of PGW's heating customer base for Fiscal Year 2016. PGW holds in excess of 85% of the home heating market in the City, with fuel oil constituting most of the remaining market share. PGW's residential and small to medium-sized commercial market shares are expected to remain stable due to the costs to customers of changing energy sources absent monetary incentives in the form of rebates and related financing mechanisms. Costs of new or replacement residential gas equipment can be affected by many factors such as the U.S. Department of Energy's proposed regulations that could require newly-manufactured gas furnaces have a higher efficiency rating than is currently required. The costs of acquiring such gas furnaces as well as any necessary duct work could affect the willingness of customers to convert to or maintain natural gas. Growth in PGW's market share is expected to be limited absent an expansion in PGW's service territory beyond the City and an investment in marketing or incentive programs.

The average number of firm residential non-heating customers (including CRP (herein defined) customers) is projected to decline from 20,731 in Fiscal Year 2017 to 14,402 in Fiscal Year 2022. The average number of firm heating customers (including CRP customers) is projected to increase from 471,728 in Fiscal Year 2017 to 479,947 in Fiscal Year 2022. See APPENDIX B – "INDEPENDENT CONSULTANT'S ENGINEERING REPORT – **Financial Feasibility for the Fifteenth Series Bonds** – Projected Revenues – *Projected Average Number of Customers*."

The historical total average number of customers served monthly (for Fiscal Years 2012 through 2016) has been approximately 499,000. PGW's customer base is largest at the end of the peak heating season and decreases afterwards as customers terminate their service until the next heating season begins. The total average number of customers served is projected to increase from approximately 502,000 in Fiscal Year 2017 to approximately 505,000 in Fiscal Year 2022, a total increase of about 0.6% over five years, with most of this increase in the number of heating residential customers served.

PGW experiences greater competition in the larger commercial and industrial markets, with interruptible customers (load balancing service, boiler and power plant service and interruptible transportation sale customers) having the ability to utilize alternate energies (such as oil, electric or steam) if the equivalent price of natural gas is higher than the price of alternative energy. See "GAS SERVICE RATES AND TARIFFS – **Gas Service Tariff**" herein. Growth in PGW's commercial and industrial customer base may also be affected by regulations of the Clean Air Act as use of natural gas (instead of fuel oil) may help such customers meet air emission operating permits. In addition, the lower cost of natural gas relative to alternative energy sources has resulted in large commercial and industrial customers switching to natural gas.

Notwithstanding any beneficial changes in competition, PGW's management expects that customer conservation efforts and energy efficiency improvements in gas equipment and residential and other buildings will continue to exert downward pressure on load levels and revenues for PGW as well as other natural gas and energy providers generally.

THE GAS WORKS FACILITIES

PGW maintains and operates a large number of facilities, including a distribution system of gas mains and service lines, and meters, gas supply facilities (including City gate stations where natural gas is received from pipeline transmission companies), centers to monitor and control gas flow and pressure, and liquid natural gas liquefaction, vaporization and gas storage facilities. For additional information see "NATURAL GAS SALES, COSTS AND SUPPLIES – **Gas Supply, Storage and Transportation**." Also, the PGW facilities are described briefly below but more information about PGW's facilities can be found in APPENDIX B – "INDEPENDENT CONSULTANT'S ENGINEERING REPORT – **The PGW Gas System**."

Gate Stations

Natural gas is received through nine City gate stations, eight of which are owned by the two interstate pipeline companies serving PGW, Spectra and Transco-Williams. These supply facilities are remotely controlled from a gas control center located at the Montgomery Facility. At the gas control center, personnel monitor and control gas flow and pressure from the nine City gate stations to the high-pressure distribution system, as well as provide direction to the LNG production plant operators concerning startup, shutdown and gas flow output from the LNG facilities.

LNG Storage and Vaporization Facilities

There are two LNG facilities – one at the Richmond Facility and one at the Passyunk Facility. The Richmond LNG plant is one of the largest peak shaving facilities in the United States. It includes liquefaction, storage and vaporization facilities. The liquefaction facility was placed into service in 2005 and replaced the original modified cascade liquefaction facility. Its liquefaction facility has a daily liquefaction capacity of 16,000 Mcf per day and utilizes open expander technology. This technology utilizes energy from the high pressure interstate pipeline system to run the expander/compressors, significantly reducing fuel requirements. Further, this technology utilizes significantly fewer components than the older modified cascade facility and has resulted in lower operation and maintenance costs. The maximum capacity of the open expander liquefaction facility of 16,000 Mcf per day is not available during the summer months because the demand on the PGW system is not sufficient to create the throughput necessary to run at this capacity.

The two storage tanks at the Richmond Plant have a combined gross capacity of 48,970,000 gallons of LNG (4,045,800 Mcf). Regasification of the liquid natural gas is accomplished with six vaporizers having a total output of

463,000 Mcf per day plus 100,000 Mcf per day in reserve. The Richmond Plant also has facilities to receive LNG from and deliver LNG to cryogenic trailer trucks.

The smaller satellite facility at the Passyunk Facility includes LNG storage and vaporization. It receives liquefied gas supply from the Richmond Plant via cryogenic trailer trucks. The Passyunk LNG facility consists of one LNG storage tank of 3,066,000 gallons gross capacity (*i.e.*, the equivalent of 253,300 thousand cubic feet ("Mcf") of natural gas) and two LNG vaporizers, each having a capacity of 45,000 Mcf per day, resulting in 45,000 Mcf per day planned capacity and 45,000 Mcf per day reserve.

PGW is considering expanding its current LNG facilities. See "POTENTIAL LNG FACILITIES EXPANSION."

Gas Holder Storage Facilities

The Richmond Plant has a low pressure gas holder. The Richmond holder has an operating capacity of 1,000 Mcf. It was installed in the manufactured gas era and is in working order. It is used to enhance operational flexibility of the LNG Plant.

Distribution Facilities

The principal gas distribution facilities consist of approximately 3,030 miles of main, 478,267 service lines, 201 district regulator stations, 573,500 meters (of which 514,000 are active) and miscellaneous valves, instruments, and other appurtenances. PGW operates eight different operating pressure systems; each system is connected to the other by control regulators. Approximately 75% (by length) of the gas mains in PGW distribution system operate at low pressure (inches WC). The majority of PGW customers are served from the low pressure system (approximately 0.25 psig).

Approximately 46% (by length) of the gas mains are cast iron, 33% are steel, 4% are ductile iron, and 17% are plastic. Of the steel mains, approximately 51% are wrapped, coated, and cathodically protected. Approximately 28% of the service lines are steel (of which 17% are cathodically protected) and 72% are plastic. See "THE CAPITAL IMPROVEMENT PROGRAM" for information regarding PGW's gas main replacement program.

Data Center

PGW has a state-of-the-art energy efficient data center that includes a dedicated backup generator and two fully redundant uninterruptible power supplies. The modular data center design allows for information technology equipment load growth and provides increased redundancy of cooling systems to N+3 or essentially four systems.

Combined Heat and Power

A 200 kW natural gas-fired micro-turbine combined heat and power ("CHP") system produces electricity, heat and cooling for the 800 West Montgomery Avenue building. PGW estimates that approximately half of the building's electricity is produced by the CHP system at half the cost of electricity purchased from the local distribution grid. Waste heat from the micro-turbine's exhaust is used via an absorber chiller for building cooling providing additional annual operating savings. The CHP system is also used by PGW marketing to demonstrate the advantages of CHP systems to customers in the growing CHP service segment.

Compressed Natural Gas

PGW is currently preparing a request for proposals for a third party to potentially design, build, and/or operate a compressed natural gas ("CNG") station at PGW's Tioga facility (the "Tioga facility") for development possibly as early as the next 12-18 months. The City received a grant from the USDOT to purchase approximately two dozen natural gas refuse trucks which would use the proposed CNG station which is expected to be open to the public and located near the City's refuse truck station. PGW and the City are currently working on this project but there is no contractual obligation between the City and PGW. Plans are still preliminary and subject to change. At this time, PGW has not assumed any operating cost reductions, new expenses or revenue enhancements associated with this alternative fuel initiative.

Other Facilities

In addition to administrative offices, PGW has building and parking facilities located throughout the City for Field Operations - distribution and field service, gas control, equipment and automobile repair, training, telecommunications, customer service, and warehousing.

NATURAL GAS SALES, COSTS AND SUPPLIES

PGW Gas Sales and Natural Gas Costs

PGW serves residential, commercial and industrial customers with residential and commercial customers accounting for approximately 98% of PGW's non-heating customer base and approximately 87% of PGW's heating customer base for Fiscal Year 2016. Historical average number of customers (for Fiscal Years 2012 through 2016) has been approximately 499,000. References to gas "sales," "revenues" and "receipts" in this Official Statement generally refer to respectively, volume of gas, billings for gas delivered and payments received from billed customers. See "PHILADELPHIA GAS WORKS – **Competition**."

PGW provides three categories of heating or non-heating services: (1) firm service to residential, commercial or industrial customers who are given an applicable general service rate, municipal service rate or Philadelphia Housing Authority service rate, (2) interruptible service (mostly boiler and power plant service or load balancing service) to customers who must have an alternate energy source because their service may be interrupted and (3) transportation service to customers who do not use PGW as its gas provider. For Fiscal Year 2016, firm customers constituted approximately 99% of PGW's customer base and account for 95% of its sales volume (representing gas delivered to customers). For Fiscal Years 2017 through 2022, PGW projects that average firm non-heating customers will decline from 24,999 to 18,571, and total average heating customers will increase from 471,728 to 479,947 and total average transportation customers will increase from 5,070 to 6,058. See Table 9 in APPENDIX B – "INDEPENDENT CONSULTANT'S ENGINEERING REPORT – **Financial Feasibility for the Fifteenth Series Bonds** – Projected Revenues – *Historical and Projected Average Number of Customers*."

For the twelve month period ended August 31, 2016, approximately 81.1% of gas revenues were derived from residential customers, approximately 17.2% were derived from commercial and industrial customers and approximately 1.7% were derived from municipal and housing authority customers. Gas revenues represent gas for which PGW has billed customers.

PGW's gas sales and gas costs reflect a variety of factors, including natural gas utilization, natural gas prices, pipeline demand charges and refunds, and exercise by customers of their rights under the Gas Choice Act to purchase natural gas from providers other than PGW, though such customers will be required to use PGW's distribution (also referred to as "transportation") system and pay a fee for such use. To date, gas choice has not been available to residential customers (see "PHILADELPHIA GAS WORKS – **Competition**"). Such choice has been available to commercial, industrial and municipal customers. Residential customers have not had the option to so choose because there has been no third-party gas supplier offering to serve PGW's residential customer base. See "PHILADELPHIA GAS WORKS – **Competition"**. The temperature and other weather conditions greatly affect the gas usage of PGW's heating customers. Colder than normal weather conditions result in a greater demand for natural gas and warmer than normal weather conditions result in a lower demand for natural gas.

Total percent of gas sales by PGW's customer type, net of transportation sales, during each of the past five Fiscal Years ended August 31, are shown in the following Table 5:

Table 5
PERCENT OF GAS SALES(2)
BY CUSTOMER TYPE
THE FISCAL YEARS ENDED AUGUST 31(1)

	2016	2015	2014	2013	2012
Residential	81.1	79.8	78.9	78.4	78.0
Commercial and Industrial	17.2	17.7	18.6	19.1	19.3
Municipal and Housing Authority	1.7	2.5	2.5	2.5	2.7
TOTAL	100.0	100.0	100.0	100.0	100.0

(1) Source: PGW's records.
(2) Sales represent gas delivered to customers.

Total gas sales for PGW are comprised of sales to firm and interruptible customers. Firm customers receive gas service under various schedules which anticipate no interruptions in the delivery of natural gas. Firm sales represented more than 99% of total gas sales by volume in Fiscal Year 2016. Interruptible sales service is offered to customers under schedules or contracts which anticipate and permit interruptions on short notice, generally in peak load periods. Interruptible gas service, which is sold to high volume commercial and industrial customers, represented less than 1% of total gas sales in Fiscal Year 2016. For information regarding PGW's gas sales by customer and service type, see "PGW BUDGETS AND FINANCES – **Selected Operating Data Regarding Customers and Gas Sales** – Table 12 – *Selected Operating Data Regarding Customers and Gas Sales."* Also see Table 11 in APPENDIX B – "INDEPENDENT CONSULTANT'S ENGINEERING REPORT – **Financial Feasibility for the Fifteenth Series Bonds** – Projected Revenues – *Historical and Projected Revenues*" for information regarding gas sale revenues received by customer type.

During the five-year period from Fiscal Year 2012 through Fiscal Year 2016, natural gas sales revenues were affected by the commodity price of natural gas and heating demand caused by weather. The price of natural gas affects sales revenue because a substantial portion of PGW's revenue is the recovery of natural gas costs. The commodity price of natural gas during this period was trending downward. The major cause of the downward pressure on natural gas prices was the volume of natural gas from additional supply coming on line from drilling activity in the Appalachian shale region, over the past several years. Degree days experienced during this period varied from a low of 3,037 (Fiscal Year 2012) to a high of 4,444 (Fiscal Year 2015). The 30-year average degree days for the period ending in Fiscal Year 2016 were 4,237. Fiscal Years with higher degree days would indicate more demand for heat and higher sales volumes. Sales volumes for the period range from a low of 38 Bcf in Fiscal Year 2016 to a high of 50 Bcf in Fiscal Year 2014.

The cost of natural gas is PGW's single largest expense. During the five-year period Fiscal Year 2012 through Fiscal Year 2016, natural gas expenses averaged \$238.4 million, with a low of \$146.5 million in Fiscal Year 2016 and a high of \$304.0 million in Fiscal Year 2014. Information regarding PGW's natural gas costs and operating revenues during each of the past five Fiscal Years ended August 31, is shown in the following Tables. For information regarding PGW's natural gas sales volume, see the table entitled "Sales Volume" in APPENDIX A – "COMPREHENSIVE ANNUAL FINANCIAL REPORT FOR FISCAL YEARS ENDED AUGUST 31, 2016 AND 2015 OF THE PHILADELPHIA GAS WORKS – **Statistical Section**."

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Table 6
NATURAL GAS COSTS FOR THE FISCAL YEARS ENDED AUGUST 31[1]

	2016	2015	2014	2013	2012
Natural Gas Costs ($ thousands)	$146,515	$252,158	$304,040	$255,496	$233,709
% Increase (Decrease) from Prior Fiscal Year	(41.9)	(17.1)	19.0	9.3	(29.4)
% Natural Gas Utilization Increase (Decline) from Prior Fiscal Year Bcf[2]	(20.3)	(4.5)	5.5	16.6	(21.8)
% Natural Gas Price Increase (Decrease)	(42.8)	(17.0)	22.0	(3.0)	(17.2)
Pipeline Demand Charges ($ thousands)	$57,922	$57,868	$63,278	$65,158	$65,489
Pipeline Refunds ($ thousands)	$23	$0	$4,442	$86	$10

(1) Source: PGW's records.
(2) Billion cubic feet.

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Table 7
OPERATING REVENUES
HEAT AND NON-HEAT CUSTOMERS
FISCAL YEARS 2012 THROUGH 2016[(1) (4)]
(THOUSANDS OF U.S. DOLLARS)

	2016	2015	2014	2013	2012
Firm non-heat	$20,765	$27,592	$30,324	$31,401	$33,282
Interruptible gas sales	346	3,672	9,068	4,703	3,338
Billed non-heating	21,111	31,264	39,392	36,104	36,620
GCR [(2)] non-heating adjustment	762	(511)	218	(841)	434
Total non-heating	21,873	30,753	39,610	35,263	37,054
Billed heating	454,852	630,286	660,942	605,761	519,950
GCR heating adjustment	17,424	(12,124)	6,174	(12,407)	4,244
Total billed heating	472,276	618,162	667,116	593,354	524,194
Weather normalization adjustment (WNA)	39,021	(10,372)	(11,810)	8,060	44,016
Total heating	511,297	607,790	655,306	601,414	568,210
Total gas sold	533,170	638,543	694,916	636,677	605,264
Firm transportation (FT) non-heat	4,518	4,953	5,671	5,194	3,861
FT heating	22,789	22,468	23,330	19,665	14,037
WNA FT	2,458	(374)	(488)	331	1,412
Total heating FT	25,247	22,094	22,842	19,996	15,449
Total FT	29,765	27,047	28,513	25,190	19,310
Unbilled adjustment	(1,830)	(2,105)	5	1,398	(6,201)
GTS: transportation[(3)]	1,231	1,252	1,173	1,050	1,086
GTS (customer/customer choice)	8,784	10,285	10,278	9,372	7,955
GTS (supplier/customer choice)	11	11	11	478	170
GTS (firm supplier)	1,217	994	1,242	989	803
Total gas operating revenues	$572,348	$676,027	$736,138	$675,154	$628,387

(1) Source: PGW's records.
(2) GCR=Gas Cost Rate.
(3) GTS=Gas Transportation System.
(4) Also see Table 11 in APPENDIX B – "INDEPENDENT CONSULTANT'S ENGINEERING REPORT – **Financial Feasibility for the Fifteenth Series Bonds** – Projected Revenues – *Historical and Projected Revenues*."

Gas Supply, Storage and Transportation

PGW uses models that project customer natural gas requirements for the coldest hour, day and year, using its records since the mid-1970s. These projections form the basis for PGW's decisions regarding capacity commitments for pipeline supply, storage and transportation contracting. In order to deliver gas to its customers, PGW must purchase gas and also arrange capacity on the gas pipelines that deliver gas from the suppliers, many of which can be as far away as the Gulf of Mexico, to the City gate stations.

The cost of gas supply is a function of the price paid and the quantity purchased, both of which are variable. While PGW can set the timing of gas purchases, the prices paid are largely determined in a very competitive and sometimes volatile marketplace. However, PGW uses offsite storage facilities and LNG storage to lower its supply costs.

PGW expects its supplies of natural gas and LNG to be adequate to meet its projected demand on the coldest peak day, hour and year. See Table 2 and Table 3 of APPENDIX B – "INDEPENDENT CONSULTANT'S

ENGINEERING REPORT – **PGW Gas Supply** – Supply and Demand Balance" for PGW's historical and projected peak day supply and demand and projected annual supply and demand.

Supply

To satisfy the projected natural gas requirements, PGW enters into winter-only and summer-only supply arrangements with approximately a dozen gas suppliers. These arrangements are base load supply that PGW must purchase. The price of gas under these supply arrangements can be set in months prior to scheduled delivery if PGW determines there is an advantage to doing so, or the price can be set at an index for the month of delivery. PGW has been increasing its purchasing of Marcellus shale supply due to price. For winter 2016-2017, PGW purchases under these winter supply arrangements provided approximately 40% of PGW's daily firm transportation entitlements. During that same period, approximately 29% of PGW's natural gas supply portfolio was purchased in the spot market on a 100% gas daily pricing basis that allowed for daily volumetric changes. The source of the remaining 31% of the gas usage was gas in storage facilities, including from three servicers that store and can deliver natural gas through their pipelines and from PGW's LNG facilities, as an additional source of supply.

Transportation

All of PGW's gas purchases are ultimately transported from the sources of supply to the City gate stations through either Spectra pipelines or Transco-Williams pipelines. Injections and withdrawals of gas from off-system storage also rely on these two pipelines. Spectra and Transco-Williams each account for approximately half of PGW's total contract pipeline capacity of 438,793 Mcf per day. The major contracts for Spectra and Transco-Williams transportation services are being renewed automatically on a year-to-year basis. See Table 1 of APPENDIX B – "INDEPENDENT CONSULTANT'S ENGINEERING REPORT – **PGW Gas Supply** – Transportation and Storage Services" for a summary of PGW's existing transportation and storage agreements with Spectra and Transco-Williams.

Storage

Due to the highly seasonal nature of PGW's load (demand), gas purchased and delivered through the pipeline transportation service is supplemented by the use of storage services. The principal PGW natural gas supply facilities include nine City gate stations owned in large part by Spectra and Transco-Williams as well as two LNG plants owned by the City. PGW's supply facilities also include a gas control center, a deactivated propane/air plant, and one gas holder. During periods when PGW's load is less than the contracted transportation service, PGW may utilize the available capacity to purchase gas for delivery to off-system storage facilities or to liquefy such gas for storage in its LNG facilities. To the extent that PGW is able to withdraw gas from off-system storage and local LNG facilities, its need to reserve capacity on pipelines to serve higher seasonal loads is diminished. In addition, gas purchased during the lower cost non-winter period, if it can be stored and redelivered from storage during the winter, will be less costly than gas purchased during the generally higher cost winter period. Further, market area storage provides PGW with increased security that gas will be available for customers when needed.

Of PGW's total contract daily storage withdrawal capacity of 179,478 Mcf per day, services provided using the Spectra facilities account for 89,785 Mcf per day, or approximately 50%, and services provided using the Transco-Williams facilities account for 89,693 Mcf per day, or approximately 50%. Certain storage contracts do not include bundled transportation and volumes from these storages must be transported using a transportation contract from a different provider. In APPENDIX B – "INDEPENDENT CONSULTANT'S ENGINEERING REPORT," see "**The PGW Gas System** – *Supply Facilities*," Table 1 in " – **PGW Gas Supply** – *Transportation and Storage Services*," "– **LNG Facilities**" and Table 3 in " – **Supply and Demand Balance**."

Transportation and Storage Costs

During Fiscal Year 2016, transportation and storage capacity costs are estimated to account for approximately 42% of the total gas supply expenses of $146.5 million. The prices paid for these services are determined by long-term contracts and tariff rates regulated by the FERC. These components of the gas supply cost represent the purchase of capacity, which generally remains relatively fixed, and is not expected to vary directly with the volumes of gas purchased.

ENVIRONMENTAL MATTERS

General

PGW's operations and facilities are subject to numerous laws and regulations, including permitting and approval requirements, promulgated by federal agencies such as the USDOT, USEPA and FEMA, by state entities such as the PADLI and the PADEP, and by local entities such as the PWD, the Philadelphia Department of Public Health, Philadelphia AMS, and the Philadelphia OEM. These requirements are subject to change and additional or different requirements may be imposed upon PGW in the future. PGW's Technical Compliance Department routinely tracks and notifies relevant personnel of regulatory compliance requirements. See APPENDIX B – "INDEPENDENT CONSULTANT'S REPORT – **The PGW Gas System** – *PGW Technical Compliance*." No assurances can be given that PGW will be able to fully comply with changes to existing laws or requirements, or that compliance with such changes in requirements will not materially increase PGW's capital or operating costs, or have a material adverse effect on Gas Works Revenues.

PGW (and its predecessors) has been in operation for more than 180 years, and many of its current facilities (the "Current Sites") and other locations where PGW had previously operated facilities used in gas manufacturing ("Legacy Sites") were built decades ago. As a result of internal environmental evaluations of its Current Sites, PGW believes that several Current Sites that had been used in gas manufacturing contain contaminants from those operations or from other sources. Additionally, certain equipment and fixtures that PGW removed from service years ago may no longer comply with current environmental requirements. The Current Sites are comprised of the Tioga facility, the Belfield station (the "Belfield Facility"), the 9th & Diamond meter shop (the "Diamond Facility"), the Richmond natural gas processing and distribution facility (the "Richmond Facility") and the Passyunk natural gas processing and distribution facility (the "Passyunk Facility"). In order to address these issues, PGW and the City voluntarily approached the PADEP and proposed to resolve these issues at the Current Sites under PADEP's Land Recycling and Environmental Remediation Standards Act ("Act 2").

Currently, there are no remediation efforts occurring at the Legacy Sites, and no remediation activity is presently scheduled for any Legacy Site.

To determine the extent necessary to remediate environmental conditions impacting its Current Sites, PGW commissioned environmental site assessment studies that were conducted by an environmental consulting firm (the "Firm") in 2002, 2003 and most recently in 2004. In 2004, PGW received a set of five remedial investigation reports by the Firm that were based upon the findings of the environmental site assessment studies. These Remedial Investigation Reports (as such term is defined in Act 2) ("RIRs") concerned the characterization of site soil and/or groundwater contaminated with volatile organic compounds ("VOCs") and semi-VOCs at the Current Sites. In each case, the RIRs documented site impacts and recommend remediation at the applicable site to meet the site-specific standards permitted under Act 2.

Based on the RIRs, at the end of 2004, PGW submitted to the PADEP PGW's Notice of Intent to Remediate ("NIR") with copies of the RIRs for review. The remediation actions anticipated by PGW at the time included, but were not limited to, additional site characterizations, risk screenings, groundwater monitoring, soil vapor studies, underground storage tank removals, above ground tank removal, removal of other above ground fixtures, impacted soil removal, and product recovery. PGW has taken monitoring and remedial actions as guided by the reports.

Beginning in 2005, PGW conducted a series of public meetings to inform the public of PGW's upcoming remediation projects at the Current Sites, and also to address any specific concerns raised by local residents regarding PGW's future remediation plans, as required by the Public Involvement Plan Process. As a result of the public meetings, PGW developed a project schedule and budget to address and conduct any necessary remedial work for the impacted Current Sites. PGW expects that this will provide PGW with allocated resources in a manner calculated to avoid any material adverse effect on PGW or on PGW's revenues. Nevertheless, until the project schedule work plans are finalized with the PADEP, it is not possible to determine what the costs of several remediation projects will be. (See "**- Current Activities**" below).

Current Activities

Currently, an air sparge soil vapor extraction system is under construction at the Passyunk Facility and similar engineering controls will be evaluated for other facilities. At this time, PGW does not plan to remove source material from the Passyunk Facility, the Richmond Facility or the Tioga Facility. The Passyunk Facility, Richmond Facility and Tioga Facility are being monitored on an ongoing basis for development of remedial action work plans for future submittal to PADEP in connection with its Act 2 program. Pursuant to the requirements of the Pennsylvania Storage Tank and Spill Prevention Act of 1989 (the "Spill Prevention Act"), PGW is currently conducting monitored natural attenuation[7] as a remedial approach with respect to storage tanks at the Belfield Facility and the Diamond Facility with the goal of attaining site closure for past storage tank issues at both facilities by Fiscal Year 2019. The Spill Prevention Act establishes requirements, standards and procedures for removal and closure of storage tanks, to identify and contain existing contamination and to prevent future releases from storage systems no longer in service. In Fiscal Year 2017, the operating and maintenance expense estimates for environmental remediation are budgeted for $0.9 million. The average costs for these expenses from Fiscal Year 2014 to Fiscal Year 2016 were approximately $0.6 million.

Over the course of Fiscal Years 2018 through 2023, PGW expects to budget approximately $11.0 million to address and conduct remedial work for impacted PGW Current Sites to the extent such costs are not included in other budget line items. PGW expects that this will provide PGW with required resources without causing a material adverse effect on PGW or on PGW's revenues. However, until the work plans are finalized with the PADEP and other agencies with jurisdiction over PGW, and remediation activities are completed, costs of several remediation projects cannot be determined.

Estimates for Financial Statement Purposes

The remediation activities described above at the Current Sites are estimated at a net present value of $32.7 million (as of August 31, 2016) for the 30-year period beginning that date. See APPENDIX A – "COMPREHENSIVE ANNUAL FINANCIAL REPORT FOR FISCAL YEARS ENDED AUGUST 31, 2016 AND 2015 OF THE PHILADELPHIA GAS WORKS – **Financial Section** – Notes to Financial Statements – **Note 1(t) – Pollution Remediation**" attached hereto for a description of PGW's method for estimating remediation obligations.

Other Estimate of Environmental Remediation Costs

For purposes of insurance settlement negotiations (see "– **Insurance Settlements**" below), PGW also commissioned another study with different assumptions regarding the type and scope of necessary work and estimate of remediation costs with respect to the Current Sites and Legacy Sites. The higher estimate reflects what PGW considers could be needed at both Current Sites and Legacy Sites if source removal were necessary. This information does not address PGW's insurance coverage.

Additional Study of Current and Legacy Sites and Associated Remediation Costs

A second estimate for environmental remediation costs dated as of 2003 and updated as of October 2012, is for $333 million for the 30-year period beginning October 2012. It was initially prepared in 2003 by a consultant to PGW for insurance settlement purposes to be a "'reasonable worst case' or 'plausible worst case' scenario," rather than an approach that estimates the environmental remediation costs of scenarios thought most likely to occur or associated with a preferred remedy. It was updated in 2012 primarily to reflect current remediation pricing. It generally includes all of the activities described under the lower cost estimate. However, recognizing that older processing for producing gas and older storage methods make it possible that contaminants exist at the Legacy Sites formerly associated with PGW or its predecessors and located throughout the City and at some of the Current Sites, it expands the properties included in the remediation costs estimate to both the Current Sites and the Legacy Sites. These more comprehensive and costly remediations than assumed in the lower estimate would include, as appropriate, removal or stabilization of contaminated soils, plus pumping and treating groundwater to remove contaminants and prevent migration, excavation as off-site thermal treatment of contaminated soils and attention to ground water contamination. PGW does not currently plan to undertake many of the activities detailed in this estimate.

[7] "Natural attenuation" may consist of a variety of physical, chemical, or biological processes that, under favorable conditions, act without human intervention to reduce the mass, toxicity, mobility, volume, or concentration of contaminants in soil or groundwater.

Actual Costs May Differ Substantially from Estimates

Estimates of remediation costs may change substantially as additional information becomes available regarding the level of contamination at specific sites, available remediation methods, and changes in price, technology, proposed land use, or applicable regulations.

Other Environmental Activities

Clean Air Act

The Clean Air Act (as amended, the "Clean Air Act") requires the County of Philadelphia (which is coterminous with the City) to submit to the USEPA a State Implementation Plan (the "State Implementation Plan") revision demonstrating that the County has implemented all necessary Reasonably Available Control Technology (as defined in the Clean Air Act) controls on all major stationary sources of VOCs and oxides of nitrogen. The Philadelphia Office of Sustainability currently includes the methane released during PGW's main leaks in the City's carbon budget. Such methane has the effect of adding greenhouse gases to the atmosphere, which have been found by scientific consensus to contribute to anthropogenic climate change. As part of PGW's capital improvement program, PGW is replacing portions of its mains with plastic pipes. See "THE CAPITAL IMPROVEMENT PROGRAM" for information regarding PGW's gas main replacement program.

On April 18, 2012, the USEPA finalized regulations under the federal Clean Air Act to reduce air pollution from the oil and natural gas industry. The final rules are expected to, among other outcomes, reduce air toxics and emissions of methane, a potent greenhouse gas. Distribution lines such as PGW's mains have not been affected by the final rules.

Other Remediation Activities

PGW is conducting abatement of asbestos-containing materials, lead-based paint and mold at certain of its facilities. PGW is replacing customer gas regulators with mercury-free regulators. PGW conducts other remediation and abatement projects as needed in conjunction with construction and capital projects among PGW locations and facilities to ensure health and safety during operations and to meet Federal, State, and City regulatory requirements. It is equally sharing the costs of remediation of a former storage facility adjacent to the Passyunk Plant with the present owner for which PGW is only responsible for its own share of the costs.

Voluntary Activities

No contaminants related to the manufacture of natural gas and other gas works operations were found at or above actionable levels in soil vapor tests conducted voluntarily by PGW at properties adjacent to the Passyunk Facility. Although the tests revealed the presence of chloroform, PGW does not believe that the chloroform was generated by PGW activities. Nonetheless, PGW voluntarily has been assisting USEPA's ongoing soil vapor studies of the affected properties. PGW is currently waiting for any further communication from USEPA on this matter.

Regulatory Actions and Suits

Current Sites

With respect to the Current Sites, except with respect to underground storage tanks which are subject to mandatory remediation, and minor fines included in "– **Violations**" below, PGW has not received any orders for mandatory remediation measures or been fined or sanctioned by any environmental regulatory agency, nor has it received any third-party claim for bodily harm or property damage based on environmental issues at the Current Sites. PGW is not aware of any river sediment claim or other natural resource claims.

Legacy Sites

PGW has not made any on-site investigation or data analysis of the Legacy Sites nor has it assessed the Legacy Sites for soil, ground water and soil vapor environmental impact. PGW has not conducted environmental remediation or been asked to conduct environmental remediation at any Legacy Site, other than a third-party claim which the claimant has not pursued. PGW is not aware of any river sediment claim or other natural resource claims. It has not been fined or sanctioned for any Legacy Site, nor has it received any third-party claim for bodily harm or property damage at the Legacy Sites.

Violations

Since 2002, PGW has paid less than $175,000 in fines for notice of violations and penalties associated with permit and regulatory violations from the USEPA, the PWD, and AMS. The majority of such fines were incurred in connection with USEPA requests for settlements under the Comprehensive Environmental Response, Compensation, and Liability Act resulting from issues at off-site disposal facilities.

Insurance Settlements

PGW does not currently carry first party environmental coverage which it could use for environmental remediation costs. However, PGW's pre-1986 excess liability policies included certain coverage for environmental liability to third parties. In 2004, PGW began negotiating a buy-out of those policies with the various carriers, agreeing to forgo any future recovery for third-party claims in exchange for obtaining funds for environmental remediation. Through June 2017, PGW has received $15.1 million in net negotiated settlements from various carriers.

Recovery of Environmental Remediation and Other Costs

The costs of environmental remediation are included in the category of items eligible for inclusion in the Base Rate. However, while there is no express prohibition making the costs of fines or penalties related to environmental matters ineligible for inclusion in the Base Rate, there can be no assurance that the PUC would approve Base Rate increases to cover such costs should they be incurred. PGW's ability to recover expenditures depends on the rates authorized by the PUC. The PUC is obligated by the Gas Choice Act to use the cash flow methodology to determine PGW's "just and reasonable" rates. PGW periodically files rate increase applications, which may or may not be approved, or may be partially approved, and any approval may not occur in a timely manner. See "GAS SERVICE TARIFF AND RATES – **Rates** – *Base Rate*."

Uncertainty

Any analysis of the costs and requirements of environmental impacts is subject to certain variables, including the possible future discovery of pre-existing unknown pollution conditions, assertions of claims by government agencies or private litigants, changes in laws, administrative policies, or judicial rulings that create new environmental liabilities or exacerbate existing ones. PGW reserves the right to all defenses of liability with respect to environmental impacts, including, without limitation, seeking contribution from previous operators and/or adjacent site owners.

GAS SERVICE TARIFF AND RATES

Gas Service Tariff

PGW recovers the costs of providing natural gas, including the cost of owning and operating its various facilities, funding its various programs, satisfying the Rate Covenant, and providing for amounts sufficient to operate on a day-to-day basis, together with appropriate coverage, through the rates set forth in its Gas Service Tariff approved by and on file with the PUC.

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The following is a brief description of PGW's rate requests to the PUC since PGW became subject to PUC jurisdiction and the results of those requests:

PGW RATE CHANGE REQUESTS TO PUC[(1)]

Date of Request	Type of Relief (Base Rate or Surcharge)	Amount of Relief Requested	Purpose	Date Relief Granted	Amount of Relief Granted
8/8/2000	Base Rate	$52 million	Interim Rate relief	11/22/2000	$11 million
1/5/2001	Base Rate	$65 million	Rate relief	10/12/2001	$22.6 million
2/25/2002	Base Rate	$60 million	Base rate relief	4/11/2002	$36 million
FY 2002	WNA	Charge/(Credit)	Weather Normalization Adjustment	8/8/2002	Approved
12/22/2006	Base Rate	$100 million	Rate relief	9/28/2007	$25 million
11/14/2008	Base Rate	$60 million	Extraordinary rate relief	12/18/2008	$60 million
12/18/2009	Base Rate	$60 million	Maintain extraordinary rate relief	7/29/2010	$60 million granted in 2008 made permanent
12/18/2009	Surcharge	$42.5 million annually	OPEB funding	7/29/2010	$16 million annually through 2015
12/18/2009	Surcharge	$58.3 million	5yr. Demand Side Management Phase I (DSM)[(2)]	7/29/2010	Cost recovery
1/18/2013	Surcharge	DSIC: 5% of non-gas revenues	Distribution system repair, improvement & replacement	5/9/2013	5% of non-gas revenues from 2010 base year estimated to generate $22 million
December 2014	Surcharge	Automatic adjustment clause extension	DSM Phase II	11/01/2016	Range of $2.5 million to $2.8 million annually through Fiscal Year 2020 (excluding CRP Comfort which is pending for Fiscal Years 2018 to 2020); triennial reauthorization plans authorized for subsequent three-year periods
February 2015	Surcharge	$16 million annually	Continued OPEB funding	7/8/2015	$16 million annually
April 2015	Surcharge	$10.7 million	DSM Phase I; extended DSM Phase I until Order was rendered on Phase II	5/7/2015	$10.7 million through Fiscal Year 2016
September 2015	Surcharge	DSIC: 2.5% of non-gas revenues in addition to the existing 5% cap for a total of 7.5%[(3)]	Distribution system repair, improvement & replacement	1/28/2016	2.5% of non-gas revenues estimated to generate an additional $11 million for a total DSIC of $33 million
February 2016	Surcharge	$11.4 million	Recover under-collection	7/6/2016 Effective 10/1/2016	$11.4 million over two year period
2/27/2017	Base Rate	$70.0 million[(4)]	Rate relief	11/28/2017	Proposed partial settlement under review with the PUC

[(1)] Does not include GCR changes.
[(2)] "DSM" is a PGW program offering services to assist its customers to get the best value for their energy expenses.
[(3)] Beginning on October 1, 2016, PGW temporarily increased its DSIC surcharge to 8.84% as permitted by the PUC's July 6, 2016 Order which permits PGW to recover certain DSIC under collections for the year ending December 31, 2015 over the course of two years. On January 1, 2017, PGW further changed its temporarily increased DSIC surcharge percentage to 8.80%, where it remains following PGW's April 1, 2017 DSIC quarterly filing.
[(4)] The original amount sought in the February 27, 2017 filing was $70.0 million. Also see "**Rates** - *2017 General Rate Relief Filing*" below for further information including a description of the proposed partial settlement in the amount of $42.0 million of base rate increases submitted to the PUC on July 21, 2017.

PGW's current Gas Service Tariff sets forth the rules and regulations and practices for gas service and the rates PGW is allowed to charge for such service, including the Base Rate, the Gas Cost Rate (herein defined) and various adjustments and surcharges. See APPENDIX B – "INDEPENDENT CONSULTANT'S ENGINEERING REPORT – **Rates and Tariffs** – *Existing Rates*" and Table 7 within such section.

PGW's rates are unbundled such that any customer may choose a commodity supplier that is different from its distribution provider. As described under "PHILADELPHIA GAS WORKS – **Competition**," to date, there has not been a third-party natural gas supplier available to residential customers. PGW's rates generally include a customer charge component, distribution charge component and Gas Cost Rate. Under the unbundled rates, PGW's margin from firm customers is not materially impacted by whether a customer chooses a third-party supplier or elects to continue taking the fully bundled service. A customer will continue to pay the distribution, customer charges and surcharges to PGW even if the customer does not purchase gas service from PGW.

See Figure 3, "Components of PGW Gas Cost Rate" and Figure 4, "Components of PGW Surcharges," in APPENDIX B – "INDEPENDENT CONSULTANT'S ENGINEERING REPORT."

Rates

The following types of rates are set forth in the Gas Service Tariff. Each is discussed below in more detail.

- **Base Rate (Customer Charge):** the rate charged by PGW, using the cash flow method (as described under "*Base Rate*" below), to produce a targeted amount of revenue for PGW based on various assumptions, including projected revenues and expenses.

- **Gas Cost Rate ("GCR"):** the current cost of natural gas and all raw materials that are passed through to customers. GCR consists of the purchased gas costs, transportation costs and off-system storage costs, minus the cost directly paid by interruptible sales customers, all subject to various adjustments for actual versus projected values and certain credits.

- **Distribution Charge:** a component of a customer's rate regardless of whether a customer chooses to purchase its gas from PGW or an alternate supplier.

- **Surcharges:** Several surcharges are imposed for specific purposes:

    - Universal service and energy conservation (recovery of social program costs)
    - Restructuring and consumer education (recovery of transition costs to customer choice)
    - Efficiency cost recovery (recovery of energy efficiency programs)
    - Other postemployment benefits (recovery of OPEB trust contribution costs)
    - Distribution system improvement charge (DSIC – recovery of capital costs associated with a portion of PGW's main replacement program)

- **Weather Normalization Adjustment ("WNA")**. Since 2002, the delivery charge (not including GCR or surcharges) has been subject to a WNA which mitigates the risk of a warmer than normal winter season. The WNA adjusts the customer bills upward or downward to reflect differences between actual Heating Degree Days ("HDD") and normal HDDs. For PGW, a HDD is a measure of the deviation of daytime temperature from a predefined standard, which PGW has projected based on a standard that translates to a design day average temperature of 0° F. A "design day" is a 24-hour period of the greatest theoretical demand for gas.

Base Rate

The Base Rate is regulated by the PUC, which is obligated by the Gas Choice Act to use the cash flow methodology to determine PGW's "just and reasonable" rates. Pursuant to the PUC's April 2010 Order and

Final Policy Statement[8] (the "2010 PUC Policy Statement") with respect to PGW, the determination of just and reasonable rates includes satisfaction of the subsidiary obligation to provide revenue allowances from rates adequate to cover its reasonable and prudent operating expenses, depreciation allowances and debt service, as well as sufficient margins to meet bond coverage requirements and other internally generated funds over and above its bond coverage requirements, as the PUC deems appropriate and in the public interest, for purposes such as capital improvements, retirement of debt and working capital.

In determining just and reasonable rate levels for PGW, the PUC will consider, among other relevant factors: (1) PGW's test year-end and (as a check) projected future levels of non-borrowed year-end cash, (2) available short term borrowing capacity and internal generation of funds to fund construction, (3) debt to equity ratios and financial performance of similarly situated utility enterprises, (4) level of operating and other expenses in comparison to similarly situated utility enterprises, (5) level of financial performance needed to maintain or improve PGW's bond rating thereby permitting PGW to access the capital markets at the lowest reasonable costs to customers over time, (6) PGW's management quality, efficiency and effectiveness, (7) service quality and reliability and (8) the effect on universal service. See "GAS SERVICE TARIFF AND RATES – **Rates** – *Ratemaking Methodology to Account for Bond Covenants.*"

To effect any increase to the Base Rate, PGW files a proposed revision to its existing Gas Service Tariff with the PUC setting forth the proposed new rates and effective date, and detailing the data supporting the necessity of the proposed change. In any proceeding upon the motion of the PUC involving any proposed or existing PGW rate or in any proceedings involving any proposed increase in rates, PGW has the burden of proof to show that the rate involved is just and reasonable. A requested rate increase is initially suspended for 60 days and may be suspended for up to seven additional months while the PUC investigates and determines whether the increase is justified. Part of the investigation includes hearings in which interested parties can participate. After the end of the suspension period required by the Public Utility Code, in its discretion, the PUC may adjust PGW's rate increase request on the basis of the data submitted and consistent with the requirements of the Public Utility Code and, in particular, the Gas Choice Act. If the PUC approves the Base Rate increase, it will determine how to allocate the increase among the different classes of customers.

Since coming under the PUC's jurisdiction in 2000, and prior to Fiscal Year 2017, PGW had filed six requests seeking increases in the Base Rate totaling $337.0 million (which amount includes multiple requests for the same or similar costs) and the PUC has granted PGW Base Rate increases totaling approximately $155.0 million. Such increases have included requests to cover various financing costs incurred by PGW, including costs to improve its financial position, enhance its ability to access the financial markets, maintain its bond rating and provide liquidity and financial flexibility, and a portion of the costs of certain OPEB liabilities.

2017 General Rate Relief Filing

On February 27, 2017, PGW filed for an increase in its distribution base rates with the PUC. The filing sought a general rate increase calculated to produce $70.0 million (11.6%) in additional annual operating revenues, based upon a 10-year normal weather assumption. The proposed increase sought to increase the fixed customer charge component, as well as the volumetric delivery charge component of base rates. Consistent with its budget process, the base rate increase requested in this filing was based on a fully projected future test year starting on September 1, 2017 and ending on August 31, 2018.

The primary issue in this proceeding is what level of base rate increase is supportable by applying PGW's required ratemaking methodology – the Cash Flow Method – and complying with Section 2212(e) and (f) of the Public Utility Code (regarding PGW's bond covenants), as well as the 2010 PUC Policy Statement. Additional issues include 1) the appropriate allocation of the rate increase among the customer classes; 2) the utilization of a ten year average of heating degree days in order to calculate normal weather for fully projected future test year purposes; 3) PGW's proposed pilot programs: the Technology and Economic

[8] In the 2010 PUC Policy Statement, the PUC states that "unlike a regulation, [the 2010 PUC Policy Statement] is not enforceable and has no binding effect on [PUC], or on anyone else." However, it further states that the purpose of the 2010 PUC Policy Statement "is to provide guidance to PGW and all interested parties as to the Commission's view on the statutorily-mandated ratemaking criteria for PGW and the information that should be considered in determining just and reasonable rates" and, further, that the 2010 PUC Policy Statement "is grounded upon Pennsylvania case law."

Development ("TED") Rider and the Micro- CHP Incentive Program; and 4) PGW's tariff modifications which include (a) the elimination of three rate schedules, Cogeneration Service (Rate CG), Load Balancing Service (Rate LBS), and Boiler and Power Plant Service (Rate BPS), all of which have few or no customers and have adequate alternative rates; (b) revision to the rate formula for interruptible transportation ("IT") customers that better recognizes the value of the interruptible service compared to alternative energy options or firm services; and (c) the establishment of a new tariff provision to cover "back-up service," where a customer's primary energy source is something other than natural gas (e.g., steam or electricity).

Staff and intervener testimony in this proceeding was filed on May 16, 2017. Opposing parties' recommendations ranged from $28.0 million to $34.0 million in base rates (based on different assumptions of normal weather which vary from the assumptions upon which the rate increase filing was based). Hearings occurred on June 28, 2017. The PUC is statutorily required to render a decision by November 28, 2017. PGW and the parties have negotiated a Joint Petition for Partial Settlement ("Settlement Agreement") dated and filed July 21, 2017 with respect to most issues. There are two issues remaining to be litigated in the case related to the allocation of universal service charge and the posting of partial payments. These remaining issues are related to cost allocation and do not impact the overall revenue increase in the Settlement Agreement. The Settlement Agreement permits PGW to file rates designed to produce an increase in operating revenues of $42.0 million (based upon 20-year average heating degree days) and estimated total operating revenue of $680.8 million for FY 2018, calculated using the 20-year average of heating degree days experienced in PGW's service territory. The Settlement Agreement also provides for an increase in each customer class's fixed monthly customer charge. The Settlement Agreement has been submitted to the PUC for its consideration. The PUC will issue its final decision by early to mid-November 2017. The PUC could approve the Settlement Agreement without modification, approve the Settlement Agreement with modification, or reject the Settlement Agreement (PGW would have the option of withdrawing from the Settlement and demanding a full hearing if the PUC makes modifications to, or rejects, the Settlement Agreement). The PUC encourages parties in contested on-the-record proceedings to settle cases[9]. The PUC has indicated that settlement results are often preferable to those achieved at the conclusion of a fully litigated proceeding[10]. However, past results are not necessarily indicative of future outcomes. No assurance can be provided that the PUC will approve the Settlement Agreement.

See "PGW RATE CHANGE REQUESTS TO PUC" above. Also see APPENDIX B – "INDEPENDENT CONSULTANT'S ENGINEERING REPORT – **Rates and Tariffs** – *Regulation History*" for a description of cases and orders relating to PGW's Base Rate since 2008, including the requests for continuation of the annual OPEB surcharge.

Gas Cost Rate

The current cost of natural gas and all raw materials are passed through to customers through the Gas Cost Rate, which consists of the purchased gas costs, transportation costs and off-system storage costs, minus the cost directly paid by interruptible sales customers, all subject to various adjustments for actual versus projected values and certain credits. The Gas Cost Rate can change monthly and represents a substantial portion of a typical heating bill. The Gas Cost Rate factor is evaluated quarterly to reflect the cost PGW expects to pay its suppliers. Once actual gas supply costs are booked, any cost adjustments over or under are factored into the Gas Cost Rate factor, resulting in no profit to PGW. By law, the Gas Cost Rate factor is passed on to customers without any profit or markup. See APPENDIX B – "INDEPENDENT CONSULTANT'S ENGINEERING REPORT – **Rates and Tariffs** – *Gas Cost Rate*."

Weather Normalization Adjustment

PGW's approved commodity charges (exclusive of the cost of gas) is subject to the WNA pursuant to which a customer's bill is adjusted upwards or downwards to reflect differences between the customer's actual heating degree-days and the normal heating degree-days, as calculated from data collected at the Philadelphia International Airport. The application of the WNA facilitates the stabilization of annual earnings and cash flow during the winter heating season; it is revenue neutral to PGW. The WNA will remain in effect until discontinued

[9] 52 Pa. Code § 5.231.
[10] 52 Pa. Code § 69.401.

by the PUC. In its current rate case filed with the PUC on February 27, 2017, PGW has proposed changing the calculation of normal weather from a method based upon a 30-year calculation of average heating degree days to one based upon a 10-year calculation. If approved, this change is expected to reduce the variation in annual WNA charges. See APPENDIX B – "INDEPENDENT CONSULTANT'S ENGINEERING REPORT – **Rates and Tariffs** – *Weather Normalization Adjustment.*"

Surcharges

Several surcharges exist to fund various PGW programs and capital improvements. Depending on the surcharge, not all PGW customer classes are affected by the surcharge.

- Restructuring and Consumer Education Surcharge. Revenues from this surcharge finance the PUC approved costs incurred or to be incurred by PGW to meet requirements of the Gas Choice Act and applicable PUC regulations, orders, and other regulatory requirements.

- Universal Service and Energy Conservation Surcharge. Revenues generated from the application of this surcharge are used to finance discounts to customers in the CRP and the Senior Citizen Discount Program, the costs of the CRP Home Comfort program (the current iteration of the Low Income Usage Reduction Program (LIURP)) and past due arrearages forgiven to certain CRP customers. The Universal Service and Energy Conservation Surcharge is applicable to all PGW customers (excluding interruptible customers) who are delivered natural gas through PGW's distribution system. PGW automatically adjusts the surcharge quarterly in connection with its Gas Cost Rate filing. PGW's Demand Side Management program ("DSM") is financed principally from this surcharge.

- Efficiency Cost Recovery Surcharge. Revenues generated from the application of this surcharge are used to fund the program costs and the administrative costs of the energy efficiency programs for the firm customers (non-low income DSM).

- OPEB Surcharge. Revenues generated from the application of this surcharge are designated for payment of PGW's OPEB obligations (the incremental rate increase of $16.0 million annually is related to an OPEB surcharge which was initially approved in 2010 and then approved to continue beyond 2015 in PGW's 2015-2016 Cost Rate Proceeding; PGW also agreed to continue funding the OPEB liability at $18.5 million annually).

- DSIC Surcharge. Revenues generated from the application of this charge, which at 7.5% of PGW's non-gas revenues is expected to generate approximately $33.0 million per year, are used to supplement the acceleration of the replacement of at-risk mains which is part of PGW's Long Term Infrastructure Improvement Plan ("LTIIP"). See "THE CAPITAL IMPROVEMENT PROGRAM" and "PHILADELPHIA GAS WORKS —**Governmental Oversight** – *PUC April 2015 Report*."

Potential Gross Receipts Tax on Natural Gas Companies

As part of the Commonwealth budget process for the fiscal year ending June 30, 2018, on July 27, 2017, the Pennsylvania Senate approved a bill (House Bill 542) that would impose a tax, effective August 1, 2017, of 57 mills (5.7%) upon each dollar of the gross receipts received from the sale and delivery of natural gas to retail gas customers within the Commonwealth by every natural gas supply company and natural gas distribution company, including PGW, engaged in natural gas supply or natural gas distribution business in the Commonwealth. To become effective, the Pennsylvania House must also approve the legislation and it must become law. PGW cannot predict whether this legislation will ultimately be approved by both the Pennsylvania Senate and the Pennsylvania House, the final form such legislation might take or whether it will become law. If enacted into law in its present form, PGW estimates that it would be required to pay approximately $40.0 million annually in additional taxes, based upon currently projected sales. PGW anticipates that if imposed, the tax would be passed on to customers in their monthly bills. However, in order to do so, the PUC would need to authorize a tariff mechanism for collection of the taxed amount from customers, most likely through a "State Tax Adjustment Surcharge" which would appear as a line item on customer bills.

Beyond an estimate of the total amount of additional annual tax liability, at this time, PGW cannot predict the additional impacts of the potential imposition of the tax. The potential imposition of the tax has not been taken into account in the Independent Consultant's Engineering Report.

Ratemaking Methodology to Account for Bond Covenants

PGW's rates, as set forth in its Gas Service Tariff, are regulated by the PUC pursuant to Section 2212(b) of the Pennsylvania Public Utility Code. Pursuant to Section 2212(e), in determining PGW's revenue requirement and approving overall rates and charges, the PUC is required to follow the same ratemaking methodology and requirements as set forth the Management Agreement and the City's bond and note ordinances for PGW, and such obligation shall continue until the date on which all bonds, which are Approved Bonds (herein defined), issued thereunder have been paid in full, refunded or defeased. Section 2212(e) also states that (i) the PUC shall permit the City to impose, charge or collect rates or charges as necessary to permit the City to comply with its covenants to the holders of any Approved Bonds and (ii) the PUC shall not require the City to take action, or omit taking any actions, pursuant to the Pennsylvania Public Utility Code if such action or omission would have the effect of causing the interest on tax-exempt bonds issued by the City to be includable in the gross income of the holders of such bonds for federal income tax purposes.

"Approved Bonds" consist of (1) bonds issued by the City under The First Class City Revenue Bond Act or The City of Philadelphia Municipal Utility Inventory and Receivables Financing Act that were issued and outstanding as of July 1, 2000, (2) bonds issued on or after July 1, 2000 by the City, unless the City Council declares otherwise in the authorizing ordinance, (3) bonds issued for the purpose of refunding, redeeming, repaying or otherwise defeasing Approved Bonds and (4) bonds issued by a municipal authority for PGW's benefit for purposes other than refunding, redeeming, repaying or otherwise defeasing Approved Bonds unless the PUC determines, at the time of the registration of a securities certificate, that the bonds should not be Approved Bonds. The Bonds are Approved Bonds.

Further, Section 2212(f) permits PGW to impose, charge or collect rates and charges as necessary to permit PGW to transfer or pay to the City, on an annual basis, such amount as may be specified from time to time in the applicable ordinances of the City or agreements of the City approved by ordinances; provided that if the amount specified exceeds 110% of the amount that was authorized for transfer or payment to the City at the close of the Fiscal Year of the City ending June 30, 2000, such additional amount shall be subject to review and approval of the PUC, which approval shall be given unless such additional amount would not be just and reasonable. The amount currently specified is $18.0 million, which is the same amount as was authorized for transfer at the close of the City's Fiscal Year 2000. See "GAS SERVICE TARIFF AND RATES – **Rates** – *Base Rate*" for a description of the 2010 PUC Policy Statement setting forth the factors to be considered in determining PGW rates and revenue allowances. See also "PHILADELPHIA GAS WORKS – **Governmental Oversight** – *PUC April 2015 Report*."

Assistance Programs and Grants

PGW participates in, or partially funds, several assistance programs to, among other things, increase cash flow to PGW and decrease accounts receivables and write-offs. Pursuant to its Gas Service Tariff, PGW recovers the costs of the discounts provided to customers pursuant to the Customer Responsibility Program (the "CRP") and the senior citizen discount program (the "Senior Citizen Discount Program"), arrearage forgiveness provided to CRP customers and certain other costs through the Universal Service and Energy Conservation Surcharge, which is applicable to all PGW customers (excluding interruptible customers) who are delivered natural gas through PGW's distribution system.

On April 28, 2016, PGW filed a proposed Universal Service and Energy Conservation Plan for 2017-2020. In this plan PGW has proposed: increasing the time in which customers who are required to recertify for CRP can apply for recertification; allowing CRP LIHEAP recipients to recertify for CRP every three years instead of every other year; providing enhanced employee training on CRP recertification; improvements to its CRP outreach efforts; a pilot CRP consumption limit process; and a pilot health and safety program. Approval of PGW's Universal Service and Energy Conservation Plan 2017-2020 is currently pending before the PUC.

Customer Responsibility Program

CRP is a customer assistance program for low-income residential customers who are at or below 150% of the federal poverty level. PGW will forgive 1/36 of the customer's original pre-CRP debt each month for each CRP bill paid in full. Participants in the CRP are also required to apply for the Low-Income Home Energy Assistance Program (as further described below, "LIHEAP"), if eligible, and designate PGW as the grant recipient. Approximately 48,500 customers were enrolled in CRP as of May 2017. PGW projects that the number of CRP participants will increase to approximately 63,000 by the end of Fiscal Year 2018. The table below sets forth the approximate aggregate discount and approximate amount of debt forgiveness granted by PGW to CRP participants in Fiscal Years 2012-2016.

Table 8
PGW DISCOUNTS AND
DEBT FORGIVENESS GRANTED TO CRP PARTICIPANTS
(THOUSANDS OF U.S. DOLLARS)

Fiscal Year	Discounts to Participants	Debt Forgiveness
2016	$34,233	$8,805
2015	$54,485	$6,416
2014	$65,086	$6,183
2013	$70,598	$6,854
2012	$63,231	$8,309

Source: PGW's records.

Senior Citizen Discount Program

The Senior Citizen Discount Program has been closed to new participants since September 1, 2003. The Senior Citizen Discount Program provides qualifying residential senior citizens with a discounted General Service Rate approximately equal to a 20% reduction in the participant's total gas bill each month. The number of participants in the Senior Citizen Discount Program decreased from approximately 70,000 in 2004 to 15,000 as of May 2017. PGW projects that the average monthly enrollment will decrease to approximately 12,000 by the end of the Fiscal Year 2018, resulting in less supplemental revenue being required to fund the program over time. Discounts to participants in the Senior Citizen Discount Program are recovered through the Universal Service and Energy Conservation Surcharge. See APPENDIX B – "INDEPENDENT CONSULTANT'S ENGINEERING REPORT – **Rates and Tariffs** – *Senior Citizen Discount Program*" attached hereto.

Low-Income Home Energy Assistance Program

LIHEAP is a federally funded program that provides funds to households to ensure continued utility service available. Federal LIHEAP funds are allocated to individual states, which in turn allocate the amount to qualifying residents. PGW's share of LIHEAP funds allocated by the Commonwealth of Pennsylvania has ranged from approximately 12% to 17% since 2006. Funds received from LIHEAP are paid directly to PGW for a credit to the customer's account. Since 2006, LIHEAP funding has ranged from a low of $17.3 million in 2016 to a high of $41.5 million in 2010.

Additional Programs and Grants

See APPENDIX B – "INDEPENDENT CONSULTANT'S ENGINEERING REPORT – **Rates and Tariffs** – *Other Programs and Grants*" and "– Five-Year Gas Demand-Side Management Plan," for a description of hardship funds that are financed by customer contributions, the Utility Emergency Services Fund, PGW matching grants, available payment programs and PGW's portfolio of conservation programs. Also see "GAS SERVICE RATES AND TARIFFS – **Collections**."

Collections

PGW utilizes various programs designed to improve collections, including a landlord cooperation program, a commercial lien notification program and a risk-based collections strategy (see APPENDIX B – "INDEPENDENT CONSULTANT'S ENGINEERING REPORT – **Rates and Tariffs** – *Billings and Collections*"), in accordance with all applicable regulations with respect to collections, including Pennsylvania Act 201, entitled the "Responsible Utility Customer Protection Act" and codified in the Pennsylvania Public Utility Code under Title 66, Chapter 14, as amended ("Chapter 14"). See "PHILADELPHIA GAS WORKS – **Litigation**" for a description of certain cases relevant to PGW's collections relating to, inter alia, PGW's use of liens and certain billing matters.

Chapter 14 specifies, among other things, the circumstances pursuant to which natural gas service may be terminated. Pursuant to Section 1406 of Chapter 14, (i) utility service may be terminated subsequent to the giving of a written notice (which notice will be given at least ten days prior to the date of the proposed termination and remain effective for 60 days) for nonpayment of an undisputed delinquent account, failure to comply with the material terms of a payment arrangement, failure to complete payment of a deposit, provide a guarantee of payment or establish credit or failure to permit access to meters, service connections or other property of the public utility for the purpose of replacement, maintenance, repair or meter reading, and (ii) service may be immediately terminated, without notice, for customer actions such as the unauthorized use of the service delivered on or about the affected dwelling, fraud or material misrepresentation of the customer's identity for the purpose of obtaining service or tampering with meters or other public utility's equipment.

In addition, Chapter 14 specifies that during the winter, (a) after November 30 and before April 1, gas service may be terminated to customers with household incomes exceeding 250% of the federal poverty level, and (b) from January 1 and before April 1 service may be terminated to a customer whose household income exceeds 150% of the federal poverty level but does not exceed 250% of the federal poverty level, who has not paid at least 50% of his charges for each of the prior two months; provided however that termination may not occur if the customer has proven in accordance with the PUC rules that there is someone age 65 or over or 12 or younger in the household, if the customer has obtained a medical certificate in accordance with the PUC rules, or if the customer has paid to PGW at least 15% of the customer's monthly household income for each of the last 2 months. Chapter 14 provisions are scheduled to expire on December 31, 2024.

For additional information about PGW's collections see "PGW BUDGETS AND FINANCES – **Accounts Receivable**" and "MANAGEMENT'S DISCUSSION AND ANALYSIS OF RESULTS OF OPERATIONS AND FINANCIAL CONDITION FOR THE NINE MONTHS ENDED MAY 31, 2017 AND 2016 (UNAUDITED)."

THE CAPITAL IMPROVEMENT PROGRAM

Through its annual capital planning process, PGW identifies potential capital improvements based upon certain operating and economic assumptions, evaluates these requirements, and establishes priorities considering available financial resources. It considers these factors when developing its capital budget for a Fiscal Year. PGW then develops a Capital Improvement Program for a six-year period based upon the approved capital budget for that Fiscal Year and a forecast for the next five Fiscal Years.

The safety of PGW's operations and reliability of service are PGW's major concerns when establishing the priorities of need for capital resources. Also of major importance to PGW is ensuring funding to provide facilities to support new load opportunities. The highest two priorities are capital projects related to expenditures required for maintaining the safety and reliability of PGW's infrastructure. Priority 3 expenditures relate to enforced main relocations that are based on City, Commonwealth and Federal mandated underground infrastructure projects. Priority 4 expenditures relate to projects that will result in additional revenues from load growth opportunities, while Priority 5 are for those expenditures associated with business improvements that increase operational efficiencies and/or productivity.

PGW can make only those capital improvements that have been included in a PGW capital budget approved by the City Council.

PGW has been financing and expects to continue to finance its Capital Improvement Program through a combination of net proceeds of revenue bond and note sales (other than sales of refunding bonds), investment income, internally generated funds and DSIC surcharges. Internally generated funds consist of Gas Works Revenues available after payment of PGW Net Operating Expenses, principal and interest on bonds and notes issued by the City for PGW purposes, amounts due to Credit Facility issuers and under Qualified Swaps and Exchange Agreements, and City Charges. A decline in net revenues reduces internally generated funds available for capital projects and requires that the shortfall be funded from the issuance of bonds or other indebtedness or the incurrence of capital leases.

A significant part of the Capital Improvement Program is the replacement of PGW's cast iron mains, some of which date back to the 1890s, with more state-of-the-art plastic pipe at an estimated replacement cost of $1.0 million per mile for smaller diameter pipe, with cost increasing for larger diameter pipe and higher pressure pipe. At the end of Fiscal Year 2016, PGW's balance of cast iron mains was 1,409 miles, with a further reduction of 35.0 miles forecasted during Fiscal Year 2017. PGW estimates, based on the current replacement rate, that full replacement will be completed by 2063. PGW's Fiscal Year 2017 replacement rate is based upon a DSIC rate of 7.5% which was approved in Fiscal Year 2016. PGW's optimal replacement strategy is to enhance the safety and performance of underground distribution structures. Also see "PHILADELPHIA GAS WORKS — **Governmental Oversight** – *PUC April 2015 Report*."

Currently when PGW makes improvements and repairs to the System located in the public right of way or thoroughfare, it restores the same in accordance with existing City and Commonwealth specifications. PGW understands that there have been some preliminary discussions within the City Administration about requiring by regulation more extensive restoration (curb to curb) for certain road related construction. At this time, PGW cannot predict if such a change will occur or in what form and therefore cannot predict the impact that such a change would have on PGW's implementation of its capital improvement program and related costs. As such, PGW can provide no assurances that the impact would not be material to PGW.

For further discussion of the Capital Improvement Program, see "PGW BUDGETS AND FINANCES – Budget Approval," "GAS SERVICE TARIFF AND RATES – **Rates** – *Surcharges* • DSIC Surcharge," APPENDIX B – "INDEPENDENT CONSULTANT'S ENGINEERING REPORT – **Capital Improvement Program**," "– **Financial Feasibility for the Fifteenth Series Bonds** – *Capital Improvement Program Financing*" and "– **Assumptions and Opinions** – *Considerations and Principal Assumptions - Capital Improvement Program (2018-2022)*". As noted in the Independent Consultant's Engineering Report, the PUC approved PGW's original LTIIP petition for Fiscal Years 2013-2017 on April 4, 2013. The original LTIIP was modified by a PUC Order entered on June 9, 2016 and continues, by its terms, through August 31, 2017. PGW filed its second LTIIP petition with the PUC on May 3, 2017 for the prospective Fiscal Year 2018-2022 period. PGW's second LTIIP requires PUC approval to be applicable and is currently under evaluation by the PUC.

The following Table 9 represents information regarding actual net capital expenditures for each of the five Fiscal Years 2012-2016 as well as unaudited information for the periods September 1 through May 31 for Fiscal Years 2016 and 2017, respectively:

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Table 9
PHILADELPHIA GAS WORKS CAPITAL EXPENDITURES*
(THOUSANDS OF U.S. DOLLARS)

	PERIOD SEPTEMBER 1 THROUGH MAY 31 (UNAUDITED)		FISCAL YEARS ENDED AUGUST 31				
	2017	**2016**	**2016**	**2015**	**2014**	**2013**	**2012**
Uses							
Gas Processing	$ 3,499	$ 796	$1,726	$ 2,569	$ 5,350	$ 3,095	$ 3,675
Distribution	51,711	48,863	82,592	65,220	61,768	57,394	44,751
Field Services	5,845	6,079	6,384	6,055	5,393	3,727	3,441
Fleet	3,340	2,296	2,592	3,085	2,233	1,111	1,552
Facilities	760	882	2,642	4,177	7,646	2,440	1,675
Information Services	447	762	1,481	2,632	683	4,093	864
Other Departments	896	1,599	2,916	1,761	258	515	1,174
Total Uses[1]	$66,498	$61,277	$100,333	$85,499	$83,331	$72,375	$57,132
Sources							
Capital Fund Drawdowns	___	___	___	___	33,294	45,018	34,044
Restricted Fund	___	___	___	10,000	___	___	___
DSIC	7,821	17,888	26,253	13,764	13,914	681	
TXCP[2]	___	___	41,000	30,000	___	___	___
Internal Funds	58,677	43,389	33,080	31,735	36,123	26,676	23,088
Total Sources	$66,498	$61,277	$100,333	$85,499	$83,331	$72,375	$57,132

* Source: PGW's records.
(1) Net of reimbursements, contributions and salvage.
(2) Tax exempt commercial paper. Also see "PLAN OF FINANCE AND ESTIMATED SOURCES AND USES OF FUNDS" regarding PGW's plan to use a portion of the proceeds of the Bonds to redeem the entire outstanding balance of such commercial paper.

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POTENTIAL LNG FACILITIES EXPANSION

PGW is currently studying the feasibility of expanding the liquefaction capacity of its Richmond and Passyunk plants. PGW solicited non-binding expressions of interest from potential LNG buyers as to their interest in purchasing LNG in year-round direct sales, from its Richmond and Passyunk facilities, if LNG was available. Since the solicitation was non-binding, the responses of the surveyed potential customers may not reflect their future actual purchases. Based on the responses received, PGW has identified a potential annual market for up to 5 Bcf of direct LNG sales. If PGW were to address this interest, as well as provide redundancy for PGW's existing facilities and additional capacity to serve PGW's customers, PGW would need to increase the liquefaction capacity of its Richmond Plant and/or add liquefaction capacity to its Passyunk Plant.

Based on the non-binding expressions of interest and subsequent analysis, PGW issued a Request for Proposals ("RFP") in connection with a proposed PGW-financed expansion at the Richmond Plant with an option for proposer-financed (i.e., third-party) development at the Passyunk Plant.

PGW has engaged in preliminary discussions with two proposers who responded to the RFP and who would purchase LNG. Those discussions contemplate that the financing and construction of any facilities (to be operated by PGW) needed to provide liquefaction capacity and the financial liability therefor would be the sole obligation of the proposer, with PGW's sole obligation being to operate the facilities.

Effective July 5, 2017, PGW entered into a memorandum of understanding with a counterparty relating to expanding the liquefaction capacity at the Passyunk facility (the "Passyunk MOU") possibly through a leasing structure. The Passyunk MOU contemplates that PGW and the counterparty would for six months exclusively pursue development of a market for LNG sales from the Passyunk facility as well as evaluate and potentially negotiate definitive agreement(s). The Passyunk MOU does not require either party to ultimately enter into any definitive agreement and does not impose any financial penalty upon the parties for not entering into any final definitive agreement.

All discussions are preliminary. There is no assurance that the LNG facilities, as described above, will be built, or that the proposed structure will not change.

Black & Veatch has considered the matter of LNG expansion in connection with the preparation of the Independent Consultant's Engineering Report, and given the current state of discussions as described above, the Independent Consultant's Engineering Report does not take into account any costs or the potential revenue which might be generated from such expansion. Because at the present time, PGW does not anticipate a project for which it would incur debt or, in the normal course of business, incur expenses in excess of the revenue it estimates it will receive from the LNG expansion, the Independent Consultant's Engineering Report does not take into account any potential expansion of the LNG facilities. See "**Potential LNG Plant Expansion**" within APPENDIX B.

The Independent Consultant's Engineering Report states the Independent Consultant's opinion is based on a number of assumptions including the assumption that PGW will recover, in a timely manner, 100% of all gas supply costs (including LNG related costs). Any increases in Base Rate are subject to approval by the PUC. See "GAS SERVICE TARIFF AND RATES **- Rates -** *Base Rate.*"

Before PGW can proceed with any alternative, several reviews and approvals must occur, the principal of which would be required from the PFMC Board, the Gas Commission and the City Council. In addition, depending on the particular transaction, certain federal and Commonwealth approvals could be required.

See APPENDIX B, including "**Potential LNG Plant Expansion**" therein for additional information.

PGW BUDGETS AND FINANCES

PGW revenues used to pay debt service on its indebtedness and to fund its operations are derived primarily from the sale of gas distribution and related services to its customers. Rate and tariff charges for the sale of gas services are proposed by PGW based on, among other factors, anticipated revenues and expenses, required working capital, required debt service coverage and need for funds for capital expenditures. PGW has established several internal financial metric targets which it utilizes for long-term financial planning including: (i) capital expenditures financed approximately one-half from internally generated funds and one-half from proceeds of debt, (ii) a 2.0x or greater debt service coverage ratio under the 1998 General Ordinance, and (iii) a $100 million cash balance at the end of each Fiscal Year. These targets are subject to change by PGW in its discretion and PGW has no contractual or other obligation to pursue or meet these targets. PGW's current financial and other plans assume the approval of the Settlement Agreement by the PUC, as submitted, and PGW realizing $40.0 million in revenue enhancements, costs savings or base rate increases on a levelized basis beginning in Fiscal Year 2021 and the other assumptions discussed in the Independent Consultant's Engineering Report, in order to enable it to meet its financial metric targets, including debt service coverage, liquidity and pay-go capital funding through at least the projection period ending Fiscal Year 2022. No assurances can be provided that PGW will meet any of its financial metric targets or that such targets will not be revised or eliminated. Among other factors, the ability of PGW to achieve any of its financial metric targets may be impacted by economic, demographic, regulatory, market and technological factors which may be wholly or partially beyond the ability of PGW to control or influence.

Budget Approval

The Management Agreement requires PGW to prepare an annual operating budget and an operating forecast for the four years following the budget year. The operating budget and forecast are subject to the approval of the Gas Commission. PGW also prepares annually a proposed capital budget and a forecast for the five years following the budget year. The Gas Commission and the Director of Finance of the City review the capital budget and forecast and forward it, together with their recommendations, to the City Council for its approval by ordinance.

The Gas Commission holds public hearings on the budgets at which PGW and other interested parties are permitted to present evidence to support their positions. Community Legal Services of Philadelphia, Inc. has been appointed by the Gas Commission to serve as Public Advocate and represents residential customers in budget proceedings. The Gas Commission considers a number of factors before determining whether to accept, modify or reject the budgets proposed by PGW. Based on its findings, the Gas Commission issues an order regarding the operating budget. The Gas Commission order regarding the operating budget and the City Council ordinance regarding the capital budget may direct PGW to reduce expenses in certain areas or increase spending on certain items or to undertake specific projects. This process remains unchanged since passage of the Gas Choice Act which provides that the City continues to determine PGW's budget function.

Operating Budget

The Approved Fiscal Year 2017 Operating Budget and Five-Year Forecast Fiscal Years 2018 through 2022, presented actual information for the Fiscal Year ending August 31, 2015 and budgeted information for the Fiscal Years 2016 and 2017 and forecasted information for Fiscal Years 2018-2022. The budget includes a statement of income with itemizations of the different categories of PGW operating revenues, expenses and interest income. It also includes a cash flow statement showing both sources and uses of expenditures, a debt service coverage analysis and a balance sheet reflecting assets and equity and liabilities. It also describes the principal business assumptions that PGW made when preparing the budget and forecast. These assumptions included certain rate increases, weather–related costs projections, costs of certain commodities and personnel, increased LNG sales and capital improvement expenditures.

On May 19, 2017, PGW submitted its "Fiscal 2017-2018 Operating Budget" to the Gas Commission for its review and approval. Currently, a schedule for the review process is being finalized, with Gas Commission approval expected by December 2017.

Pending its final decision, the Gas Commission has authorized interim spending through November 2017, premised upon (with limited exceptions) approved budgeted expenditures in the Fiscal Year 2017 Operating Budget.

Capital Budget

PGW's Fiscal Year 2018 Capital Budget was approved by the City on June 15, 2017. It sets out budgeted and forecasted amounts for the capital expenditures that PGW expected to make in its classes of operations, a detailed breakdown of uses within each class of operations and identification of the expected sources of payment for the described capital expenditures. The FY 2018 Capital Budget, as well as approved carryover spending from prior approved Capital Budgets, reflects net total capital expenditures in Fiscal Year 2018 of approximately $108.4 million. The capital funding sources in 2018 include proceeds from 1998 Ordinance Bonds of approximately $52.0 million, DSIC receipts of approximately $33.4 million and internally generated funds of approximately $23.0 million.

The following is excerpted from PGW's Fiscal 2018 Capital Budget.

Table 10
CAPITAL BUDGET
FISCAL YEAR 2018 AND FORECAST 2019 THROUGH 2023[1]
(THOUSANDS OF U.S. DOLLARS)

	2018 CAPITAL BUDGET	2019 - 2023 FORECAST	TOTAL 6 YEARS
GAS PROCESSING			
Additions	$1,923	$3,028	$4,951
Replacements	3,985	24,889	28,874
TOTAL	$5,908	$27,917	$33,825
DISTRIBUTION			
Additions	$12,245	$61,231	$73,476
Replacements	79,969	416,007	495,976
GROSS TOTAL	$92,214	$477,238	$569,452
FIELD SERVICES			
Additions	$2,040	$11,138	$13,178
Replacements	5,288	28,332	33,620
GROSS TOTAL	$7,328	$39,470	$46,798
FLEET OPERATIONS			
Additions	$ 289	$0	$289
Replacements	4,250	16,530	20,780
GROSS TOTAL	$4,539	$16,530	$21,069
OTHER DEPARTMENTS			
Additions	$1,209	$5,314	$6,523
Replacements	3,211	68,098	71,309
TOTAL	$4,420	$73,412	$77,832
TOTAL			
Additions	$17,706	$80,711	$98,417
Replacements	96,703	553,856	650,559
GROSS TOTAL	$114,409	$634,567	$748,976

(1) Reimbursement to PGW for relocating structures and equipment and/or load growth are not included in this Table 10.

Accounts Receivable

Net accounts receivable were $73.6 million at the end of Fiscal Year 2016, a decrease of $13.3 million or 15.3% from Fiscal Year 2015 due to lower gas revenues and an increase in the collection rate. The collection rate in Fiscal Year 2016 was 98.4% as compared to 97.1% in Fiscal Year 2015. The accumulated provision for uncollectible accounts, totaling $74.3 million, decreased by $27.7 million at the end of Fiscal Year 2016, compared to the end of Fiscal Year 2015. The reserve for bad debt is for accounts that have not yet been written off. When a receivable is written-off, the bad debt reserve will be reduced by the same amount.

Net accounts receivable were $117.3 million at May 31, 2017, an increase of $10.6 million or 9.9% from May 31, 2016 due to higher gas revenues and a decrease in the collection rate. The collection rate for the twelve months ended May 31, 2017 was 95.0% as compared to 99.0% for the comparable period ended May 31, 2016. The accumulated provision for uncollectible accounts, totaling $70.5 million, decreased by $31.6 million for May 31, 2017 compared to May 31, 2016.

Table 11
ACCOUNTS RECEIVABLE, RESERVE FOR BAD DEBT EXPENSE, NET WRITE-OFF EXPENSES, COLLECTION FACTORS AND REVENUE STATISTICS (THOUSANDS OF U.S. DOLLARS)[1]

	FISCAL YEAR ENDED AUGUST 31				
	Actual 2016	Actual 2015	Actual 2014	Actual 2013	Actual 2012
Billed Gas Revenues[2]	$555,991	$690,766	$729,741	$687,005	$629,911
Accounts Receivable	147,849	188,882	208,806	203,326	179,754
Less: Reserve for Bad Debt	(74,286)	(102,029)	(107,349)	(105,577)	(97,757)
Net Accounts Receivable	$73,563	$86,853	$101,457	$ 97,749	$ 81,997
Bad Debt Reserve/Accounts Receivable	50.2%	54.0%	51.4%	51.9%	54.4%
Net Write-Offs	$54,610	$ 40,153	$ 38,056	$ 29,028	$ 38,401
Receivable/Billed Gas Revenues	26.59%	27.34%	28.61%	29.60%	28.54%
Bad Debt	$27,133	$ 34,833	$ 38,848	$ 39,971	$ 36,702
Bad Debt/Billed Gas Revenues	4.9%	5.0%	5.3%	5.8%	5.8%
Bad Debt/Accounts Receivable	18.4%	18.4%	18.6%	19.7%	20.4%
Total Customer Receipts	$571,544	$700,933	$724,622	$657,125	$633,497
Total Customer Billings	$580,801	$721,833	$763,077	$715,196	$655,711
Collection Factor	98.41%	97.10%	94.96%	91.88%	96.61%
Five-Year Average Collection Factor (2012-2016)	95.67%				

(1) Source: PGW's records.

(2) This is calculated based on information in APPENDIX B – INDEPENDENT CONSULTANT'S ENGINEERING REPORT: Adjusted Total Gas Revenues (Table 11, Line 38) less Prior Year's Gas Cost Recovery (Table 11, Lines 15 and 26). Accounts receivable is partly driven by sales revenue. Higher sales revenue pushes higher accounts receivable balances. During the five year period between Fiscal Year 2012 and Fiscal Year 2016, the year-end net accounts receivable balance averaged 13.4% of billed revenue, with a low of 12.6% in Fiscal Year 2015 and the high of 14.2% in Fiscal Year 2013. Along with billed revenue, accounts receivable is influenced by the collection rate. PGW calculates the collection rate by dividing the total gas receipts collected in a Fiscal Year by the total gas billings that were applied to PGW customers' accounts during the same time period. During the five-year period between Fiscal Year 2012 and Fiscal Year 2016 PGW averaged a 95.7% collection rate, with a high of 98.4% in Fiscal Year 2016 and the low of 91.9% in Fiscal Year 2013.

PGW calculates the provision for uncollectible accounts based on a financial analysis and a collectability study performed as of each Fiscal Year-end. The same methodology was used for all Fiscal Years between Fiscal Year 2012 and Fiscal Year 2016. This analysis is used to determine the adequacy of the accumulated provision for uncollected accounts. For each Fiscal Year during the stated period, management has provided an accumulated provision for uncollectible accounts in excess of the collectability study results based on its analysis of historical aging data. The actual results of the PGW's collection efforts could differ significantly from PGW's estimate. Net write-offs historically have been less than the reserve for bad debt each year due to the effects of the assistance programs and grants described under "GAS SERVICE TARIFF AND RATES – **Assistance Programs and Grants**."

Also see "GAS SERVICE RATES AND TARIFFS – **Collections**."

Selected Operating Data Regarding Customers and Gas Sales

The following table sets forth certain information regarding PGW customers, gas sales by classification and demand for gas.

Table 12
SELECTED OPERATING DATA
REGARDING CUSTOMERS AND GAS SALES[1]

	PERIOD SEPTEMBER 1 THROUGH MAY 31		FISCAL YEARS ENDED AUGUST 31				
	2017	**2016**	**2016**	**2015**	**2014**	**2013**	**2012**
Summary of Customers At End Of Period							
Residential	483,481	482,092	474,115	475,561	471,706	472,066	471,272
Industrial and Commercial:							
Firm	25,581	25,536	22,443	25,193	21,652	21,957	24,745
Interruptible	2	2	4	2	7	12	38
Municipal and PHA	2	2	2	2	2	2	2
Total Customers	509,066	507,632	496,564	500,758	493,367	494,037	496,057
Gas Sales by Classification (Mmcf)							
Residential:							
Heating	29,710	27,829	30,180	38,523	38,635	35,193	29,476
Non-Heating	339	367	426	503	529	559	585
Industrial and Commercial:							
Firm	6,760	6,328	7,078	9,390	9,370	8,994	8,284
Interruptible	16	27	38	514	1,096	890	192
Other (FT)	3,965	3,619	4,123	4,294	4,087	3,427	2,483
Total Gas Sales & Transport	40,790	38,170	41,845	53,224	53,717	49,063	41,020
Average Monthly Usage of Residential Customers (Mcf):							
Heating	7.2	5.6	5.6	7.1	7.3	6.7	5.6
Non-Heating	1.9	1.6	1.7	1.8	1.8	1.7	1.7
Average Monthly Bill of Residential Customers:							
Heating $	$115.37	$84.33	$86.50	$107.48	$114.99	$109.97	$99.92
Non-Heating $	$38.48	$32.73	$31.26	$37.87	$38.37	$37.36	$35.66
Degree Days	3,546	3,354	3,356	4,444	4,405	3,889	3,037
Normal Degree Days	4,237	4,237	4,237	4,256	4,268	4,332	4,360
	90%	79%	79%	104%	103%	90%	70%
Maximum 24-Hour Sendout (Mcf)	528,423	583,377	583,377	645,370	607,062	542,095	466,478
Peak-day Avg. Temperature (Degrees)	21	16	16	11	13	21	24

(1) Source: PGW's records.

Summary of Statements of Revenue and Expenses

Information for each of the past five Fiscal Years should be read in conjunction with and was derived from the audited financial statements and notes thereto. As discussed in "PHILADELPHIA GAS WORKS – **Pension Plans and Other Postemployment Benefits**," GASB Statement No. 68, Accounting and Financial Reporting for Pensions, was effective for PGW's Fiscal Year beginning September 1, 2014, and its provisions were retrospectively applied as of September 1, 2013.

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Table 13
SUMMARY OF STATEMENTS OF REVENUES AND EXPENSES
(THOUSANDS OF U.S. DOLLARS)

	PERIOD SEPTEMBER 1 THROUGH MAY 31 (UNAUDITED)		FISCAL YEARS ENDED AUGUST 31[1]				
	2017	2016	2016	2015	2014	2013	2012
Operating revenues:							
Gas revenues:							
Nonheating	$17,212	$17,581	$21,873	$30,753	$39,610	$35,262	$37,054
Gas transport service	38,653	35,102	41,008	39,588	41,217	37,078	29,324
Heating	480,764	436,155	509,467	605,686	655,311	602,814	562,009
Total gas revenues	536,629	488,838	572,348	676,027	736,138	675,154	628,387
Appliance and other revenues	6,082	5,644	7,961	8,727	8,317	8,333	8,240
Other operating revenues	7,527	8,258	10,928	12,493	14,681	9,984	8,356
Total operating revenues	550,238	502,740	591,237	697,247	759,136	693,471	644,983
Operating expenses:							
Natural gas	174,463	138,927	146,524	252,169	304,051	255,501	233,713
Gas processing	11,270	12,388	17,948	18,180	19,637	17,592	15,640
Field services	28,113	27,052	36,277	36,874	37,577	34,926	33,883
Distribution	29,518	26,318	37,173	38,629	36,929	30,259	27,750
Collection and account management	7,804	7,587	10,913	11,192	11,273	11,297	11,491
Provision for uncollectible accounts	26,146	28,591	27,133	34,833	38,848	39,971	36,702
Customer services	9,889	9,127	12,432	12,262	11,187	11,102	11,946
Marketing	2,798	2,566	3,671	6,956	7,783	6,789	6,664
Administrative and general	70,243	72,710	99,652	93,347	85,872	78,206	81,161
Pensions	39,777	37,688	62,336	43,748	27,214	23,614	23,972
Other postemployment benefits	5,406	4,086	9,929	6,726	11,228	16,492	20,119
Taxes	5,880	5,608	7,521	7,823	7,687	7,220	7,122
Total operating expenses before depreciation	411,307	372,648	471,509	562,739	599,286	532,969	510,163
Depreciation	39,681	37,903	51,679	49,371	47,428	45,912	45,045
Less depreciation expense included in operating expenses above	5,078	3,877	6,231	5,584	5,771	4,870	4,870
Net depreciation	34,603	34,026	45,448	43,787	41,657	41,042	40,175
Total operating expenses	445,910	406,674	516,957	606,526	640,943	574,011	550,338
Operating income	104,328	96,066	74,280	90,721	118,193	119,460	94,645
Interest and other income	1,240	907	1,393	3,784	3,597	1,147	4,659
Income before interest expense	105,568	96,973	75,673	94,505	121,790	120,607	99,304
Interest expense:							
Long-term debt	28,553	30,322	40,296	45,756	48,261	49,655	53,012
Other	1,932	4,640	8,443	11,548	9,380	10,740	16,824
Allowance for funds used during construction	(1,050)	(716)	(1,120)	(781)	(506)	(430)	(292)
Total interest expense	29,435	34,246	47,619	56,523	57,135	59,965	69,544
Excess of revenues over (under) expenses prior to City Payment	76,133	62,727	28,054	37,982	64,655	60,642	29,760
Distribution to the City of Philadelphia	(13,500)	(13,500)	(18,000)	(18,000)	(18,000)	(18,000)	(18,000)
Excess of revenues over expenses	62,633	49,227	10,054	19,982	46,655	42,642	11,760
Net position, beginning of the period	288,038	277,984	277,984	258,002	211,347	315,945	304,185
Net position, end of the period	$350,671	$327,211	$288,038	$277,984	$258,002	$358,587	$315,945

[1] During 2015, PGW implemented GASB Statements No. 68 and 71 as further described in "PHILADELPHIA GAS WORKS – **Pension Plans and Other Postemployment Benefits,**" retroactive to September 1, 2013.

DEBT SERVICE COVERAGE RATIO

The annual operating budgets approved by the Gas Commission have estimated the level of revenues required to reach at least the minimum rates and charges mandated by the General Gas Works Revenue Bond Ordinance of 1975, as amended and supplemented, and under which no debt remains outstanding as of August 18, 2015 (the "Retired 1975 General Ordinance") and the 1998 General Ordinance. The following table presents the historical revenues and regularly scheduled debt service coverage calculated under the Retired 1975 General Ordinance and the 1998 General Ordinance for the last five Fiscal Years. Payment of City Charges is subordinate to the payment of debt service on bonds issued under the 1998 General Ordinance (and was similarly subordinated to the payment of debt service on bonds issued under the Retired 1975 General Ordinance). See also Table 19 – "Projected Debt Service Coverage" in APPENDIX B – "INDEPENDENT CONSULTANT'S ENGINEERING REPORT" with respect to projected debt service coverage for Fiscal Years 2017 through 2022, inclusive.

Table 14
DEBT SERVICE COVERAGE[1]
(THOUSANDS OF U.S. DOLLARS)

	FISCAL YEARS ENDED AUGUST 31				
	2016	2015	2014	2013	2012
FUNDS PROVIDED					
Total Gas Revenues	$572,348	$676,027	$736,138	$675,154	$628,387
Other Operating Revenues	18,889	21,220	22,998	18,317	16,596
Total Operating Revenues	591,237	697,247	759,136	693,471	644,983
Other Income Incr. / (Decr.) Restricted Funds	1,416	10,836	4,079	196	8,311
City Grant	-	-	-	-	-
AFUDC (Interest)	1,120	781	506	430	292
TOTAL FUNDS PROVIDED	593,773	708,864	763,721	694,097	653,586
FUNDS APPLIED					
Fuel Costs	146,524	252,169	304,051	255,501	233,713
Other Operating Costs	370,433	354,357	336,892	318,510	316,625
Total Operating Expenses	516,957	606,526	640,943	574,011	550,338
Less: Non-Cash Expenses	89,059	74,535	53,039	48,103	47,619
TOTAL FUNDS APPLIED	427,898	531,991	587,904	525,908	502,719
Funds Available to Cover Debt Service	$165,875	$176,873	$175,817	$168,188	$150,867
1975 Ordinance Bonds Debt Service	-	$26,904	$28,592	$30,163	$31,754
Debt General Service Coverage 1975 General Ordinance Bonds	-	**6.57**	**6.15**	**5.58**	**4.75**
Net Available after Prior Debt Service	$165,875	$149,969	$147,225	$138,026	$119,113
Equipment Leasing Debt Service	-	-	-	-	-
Net Available after Prior Capital Leases	$165,875	$149,969	$147,225	$138,026	$119,113
Senior 1998 Ordinance Bonds Debt Service	$77,867	$70,139	$69,749	$47,668	$67,874
Debt Service Coverage Senior 1998 Ordinance Bonds	**2.13**	**2.14**	**2.11**	**2.90**	**1.75**
Net Available after Senior 1998 Ordinance Debt Service	$88,008	$79,830	$77,476	$90,358	$51,239
Subordinate 1998 Ordinance Bond Debt Service	-	-	-	-	-
Debt Service Coverage Subordinate 1998 Ordinance Bonds	-	-	-	-	-
Aggregate Debt Service[2]	$77,867	$97,043	$98,341	$77,831	$99,628
Debt Service Coverage (Combined liens)[3]	2.13	1.82	1.79	2.16	1.51
Debt Service Coverage (Combined liens with $18.0M City Fee)[4]	1.90	1.64	1.60	1.93	1.33

(1) Source: Comprehensive Annual Financial Report for Fiscal Years Ended August 31, 2016 and 2015 of the Philadelphia Gas Works (attached as APPENDIX A) and PGW's records.
(2) Aggregate Debt Service = (Debt Service Coverage 1975 Ordinance Bonds + Debt Service Coverage 1998 Ordinance Bonds + Debt Service Coverage 1998 Subordinate Bonds)
(3) Debt Service Coverage (Combine liens) = Funds Available to Cover Debt Service / Aggregate Debt Service
(4) Debt Service Coverage (Combine liens with $18.0M City Fee) = Funds Available to Cover Debt Service - $18.0M / Aggregate Debt Service

MANAGEMENT'S DISCUSSION AND ANALYSIS OF RESULTS OF OPERATIONS AND FINANCIAL CONDITION FOR THE NINE MONTHS ENDED MAY 31, 2017 AND 2016 (UNAUDITED)

The narrative overview and analysis of the financial statements of PGW for the nine months ended May 31, 2017 and 2016 have been prepared by PGW's management. The information presented below is unaudited and should be read in conjunction with additional information contained in PGW's audited financial statements as of and for the years ended August 31, 2016 and 2015 included in the attached APPENDIX A.

As discussed in "PHILADELPHIA GAS WORKS – **Pension Plans and Other Postemployment Benefits**," GASB 68 and 71 were effective for PGW's Fiscal Year beginning September 1, 2014 and retrospectively applied as of September 1, 2013. The primary initial impact of GASB 68 and 71 was the recognition, as of September 1, 2013, of a net pension liability of $148.7 million and a corresponding decrease in unrestricted net position. The analysis below reflects the impact of GASB 68 and 71 for periods subsequent to September 1, 2013.

The analysis below does not reflect the impact of GASB 75, which is effective for years beginning after June 15, 2017 and requires recognition of the full amount of the net OPEB liability on the balance sheet. Similar to the impact of GASB 68, implementation of GASB 75 is anticipated to result in an increase in liabilities and a decrease in unrestricted net position. PGW has not yet determined its net OPEB liability in accordance with GASB 75, but anticipates that it will be similar to the unfunded actuarial liability determined in accordance with the existing requirements, which was $357.9 million at August 31, 2016.

PGW has taken steps to mitigate the impact of GASB 75. The Company 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 the Company's expense and can elect to pay toward a more expensive plan. Retirees may also contribute toward enhanced dental plan and life insurance coverage. PGW pays 100% of the cost for the prescription drug plan after drug co-pays. Union employees hired on or after May 21, 2011 and Non-Union employees hired on or after December 21, 2011 are entitled to receive postretirement medical, prescription, and dental benefits for five years only. Currently, the Company provides for the cost of healthcare and life insurance benefits for retirees and their beneficiaries on a pay-as-you-go basis. Also, PGW continues to fund the OPEB Trust with an annual deposit of $18.5 million.

Financial Highlights

The nine month period ended May 31, 2017 was 16.3% warmer than normal (PGW's 30-year average temperature during the same period to date) and 5.7% cooler than the nine month period ended May 31, 2016. As a result, firm gas sales for the comparable period increased 6.6%. The WNA, which was in effect from October 2016 through May 2017, resulted in heating customers receiving charges totaling $29.9 million due to the warmer than normal temperatures experienced during the period. The nine month period ended May 31, 2016 was 20.8% warmer than normal and 24.3% warmer than the same period the prior year. As a result, firm gas sales for the comparable period decreased 23.9%. In addition, the WNA, which was in effect from October 2015 through May 2016, resulted in heating customers receiving charges totaling $41.6 million as a result of the warmer than normal temperatures experienced during the period. The nine month period ended May 31, 2015 was 4.1% colder than normal and customers were credited $11.6 million in WNA for the period. PGW achieved a collection rate of 95.0% during the rolling twelve months ended May 31, 2017, as compared to 99.0% for the comparable period ended May 31, 2016. The collection rate of 95.0% is calculated by dividing the total gas receipts collected in a rolling twelve-month period by the total gas billings that were applied to PGW customers' accounts during the same period. PGW achieved a collection rate of 98.3% for the rolling twelve month period ended May 31, 2015. The same methodology was utilized for all comparative periods.

Table 15
UNAUDITED
CONDENSED STATEMENTS OF REVENUES AND EXPENSES
(THOUSANDS OF U.S. DOLLARS)

	NINE MONTHS ENDED MAY 31		
	2017	**2016**	**2015**
Total gas revenues	$542,711	$494,482	$618,184
Other revenues	7,527	8,258	10,402
Total operating revenues	550,238	502,740	628,586
Fuel expense	174,463	138,927	242,685
All other operating expenses	271,447	267,747	279,059
Total operating expenses	445,910	406,674	521,744
Operating income	104,328	96,066	106,842
Interest and other income	1,240	907	2,870
Total interest expense	(29,435)	(34,246)	(40,354)
Distribution to the City of Philadelphia	(13,500)	(13,500)	(13,500)
Excess of revenues over expenses	$62,633	$49,227	$55,858

Operating Revenues

Operating revenues for the nine month period ended May 31, 2017 were $550.2 million, an increase of $47.5 million or 9.4% compared to the same period ended May 31, 2016, due to higher commodity natural gas prices and higher natural gas usage. Operating revenues for the nine month period ended May 31, 2016 were $502.7 million, a decrease of $125.9 million or 20.0% from the same period ended May 31, 2015, primarily due to lower commodity natural gas prices and lower natural gas usage.

Total sales volumes, including gas transportation deliveries, for the nine month period ended May 31, 2017 increased by 2.3 Bcf to 60.6 Bcf or 3.9% from the same period ended May 31, 2016. For the nine month period ended May 31, 2016 total sales volumes, including gas transportation deliveries, decreased by 14.7 Bcf to 58.5 Bcf or 20.1% from the same period ended May 31, 2015.

The number of customers served by PGW as of May 31, 2017 and May 31, 2016 was approximately 509,000 and 508,000, respectively. Both periods had approximately 25,000 commercial accounts and 700 industrial accounts. Residential customers as of May 31, 2017 and May 31, 2016 were 483,000 and 482,000, respectively.

Operating Expenses

Total operating and maintenance expenses, including fuel costs, for the nine month period ended May 31, 2017 were $445.9 million, an increase of $39.2 million or 9.6% from the same period ended May 31, 2016. This was primarily due to higher natural gas utilization and higher commodity prices. Total expenses decreased by $115.0 million or 22.0% for the nine month period ended May 31, 2016 compared to the same period ended May 31, 2015, primarily due to lower natural gas utilization and lower natural gas commodity prices.

Fuel Expense

The cost of natural gas increased by $35.6 million or 25.6% to $174.5 million for the nine month period ended May 31, 2017 compared to $138.9 million in the same period ended May 31, 2016. The average commodity price per Mcf increased by $0.70 or $29.0 million, the volume of natural gas utilized increased by 3.3 Bcf, 8.8% or $7.4 million and demand charges decreased by $0.8 million. The nine month period ended May 31, 2017 included a refund of less than $0.1 million.

The cost of natural gas utilized decreased by $103.8 million or 42.8% to $138.9 million for the nine month period ended May 31, 2016, compared to $242.7 million for the same period ended May 31, 2015. The average commodity price per Mcf decreased by $1.69 or $64.0 million; the volume of natural gas utilized decreased by 10.7 Bcf or $41.6 million; and demand charges increased by $1.9 million. The nine month period ended May 31, 2016 included a refund less than $0.1 million. Variations in the cost of purchased gas are passed through to customers under the GCR provision of PGW's rate schedules. Over recoveries or under recoveries of purchased gas costs are subtracted from or added to gas revenues and are included in current assets or current liabilities, thereby eliminating the effect that recovery of gas costs would otherwise have on net income.

The average natural gas commodity prices for utilized gas for the nine month periods ended May 31, 2017, 2016 and 2015 were $2.91, $2.21, and $3.90 per Mcf, respectively.

All Other Operating Expenses

Expenditures for street operations, infrastructure improvements, and plant operations for the nine month period ended May 31, 2017 totaled $68.9 million compared to $65.8 million for the same period ended May 31, 2016, mainly a result of higher labor costs. In addition, the cost for customer services, collections, account management, marketing, health insurance and the administrative areas decreased by $1.3 million or 1.4% in the nine month period ended May 31, 2017, primarily due to lower costs associated with healthcare. Expenditures for street operations, infrastructure improvements, and plant operations for the nine month period ended May 31, 2016 totaled $65.8 million compared to $69.7 million for the same period ended May 31, 2015. This decrease is mainly as a result of lower labor costs. In addition, the cost for customer services, collections, account management, marketing, health insurance and the administrative areas increased by $1.2 million or 1.3% in the nine month period ended May 31, 2016.

Pension costs increased $2.1 million for the nine month period ended May 31, 2017 as compared to the period ended May 31, 2016 due to changes in the plan assumptions and actual results experienced during this interim period. Pension costs decreased a modest $0.6 million for the nine month period ended May 31, 2016 as compared to the period ended May 31, 2015 due to changes in the plan assumptions and actual results experienced during this interim period. OPEB costs increased $1.3 million for the nine month period ended May 31, 2017 when compared to the same period ended May 31, 2016, primarily due to changes in the plan assumptions. OPEB costs decreased $3.6 million for the nine month period ended May 31, 2016 when compared to the same period ended May 31, 2015 due to higher OPEB Trust investment income and lower unfunded liabilities, which are amortized over a 30-year period. These factors combined to lower OPEB costs.

Provision for Uncollectible Accounts

Based on the most recent accounts receivable collectability evaluation, the provision for uncollectible accounts for the nine month period ended May 31, 2017 totaled $26.1 million, a decrease of $2.4 million or 8.6% compared to the same period ended May 31, 2016, which totaled $28.6 million. The accumulated provision for uncollectible accounts at May 31, 2017 reflects a balance of $70.5 million, compared to the $102.1 million balance as of May 31, 2016. The provision for uncollectible accounts for the nine month period ended May 31, 2016 totaled $28.6 million, a decrease of $6.7 million or 19.0% compared to the same period ended May 31, 2015, which totaled $35.3 million. The accumulated provision for uncollectible accounts at May 31, 2016 reflects a balance of $102.1 million compared to the $114.3 million balance as of May 31, 2015.

Net Depreciation Expense

Net depreciation expense was $34.6 million for the nine month period ended May 31, 2017, an increase of $0.6 million as compared to the same period ended May 31, 2016. Net depreciation expense was $34.0 million for the nine month period ended May 31, 2016, an increase of $2.7 million as compared to the same period ended May 31, 2015. The change between periods is caused by increased utility plant balances.

Interest and Other Income

Interest and other income for the nine month period ended May 31, 2017 was $0.3 million higher than the same period ended May 31, 2016, primarily due to higher earnings associated with the Sinking Fund. Interest and other income for the nine month period ended May 31, 2016 was $2.0 million lower than the same period ended May 31, 2015. This increase was primarily due to credits associated with PGW's interstate pipeline capacity release program. Due to an accounting change these credits are now classified as part of operating revenues.

Total Interest Expense

Total interest expense was $29.4 million for the nine month period ended May 31, 2017, a decrease of $4.8 million when compared to the same period ended May 31, 2016. Interest expense was lower for the nine month period ended May 31, 2017, primarily due to the bond refunding completed in August 2016 and lower principal debt balances. Total interest expense was $34.2 million for the nine month period ended May 31, 2016, a decrease of $6.2 million when compared to the same period ended May 31, 2015. Interest expense was lower for the nine month period ended May 31, 2016, primarily due to lower principal debt balances.

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Table 16
UNAUDITED
CONDENSED BALANCE SHEETS
(THOUSANDS OF U.S. DOLLARS)

	NINE MONTHS ENDED MAY 31		
Assets	**2017**	**2016**	**2015**
Current assets:			
Cash and cash equivalents	$118,022	$132,583	$159,581
Cash designated for capital expenditures	-	-	-
Accounts receivable (net of provision for uncollectible accounts of $70,453, $102,051 and $114,274 for 2017, 2016, and 2015, respectively)	117,300	106,744	127,549
Gas inventories, materials, and supplies	40,381	38,408	38,827
Workers' compensation escrow fund	2,610	2,599	2,597
Health insurance escrow fund	-	-	3,223
Other current assets	13,834	12,896	7,453
Total current assets	292,147	293,230	339,230
Non-current Assets:			
Utility plant, at original cost:			
In service	2,205,204	2,121,072	2,037,624
Under construction	106,927	94,864	90,695
Total	2,312,131	2,215,936	2,128,319
Less accumulated depreciation	1,000,745	957,400	913,845
Utility plant, net	1,311,386	1,258,536	1,214,474
Unamortized bond insurance costs	422	3,253	12,996
Sinking fund, revenue bonds	87,311	90,586	106,268
Other non-current assets	34,488	37,386	36,882
Total non-current assets	1,433,607	1,389,761	1,370,620
Total assets	1,725,754	1,682,991	1,709,850
Deferred outflows of resources			
Accumulated fair value of hedging derivatives	15,829	22,013	19,944
Unamortized losses on reacquired debt	50,102	31,522	31,489
Deferred outflows related to pension	88,043	78,129	46,131
Total assets and deferred outflows of resources	$1,879,728	$1,814,655	$1,807,414
Liabilities			
Current liabilities:			
Current portion of long-term revenue bonds	62,536	51,141	57,091
Other current liabilities	157,500	104,348	81,705
Total current Liabilities	220,036	155,489	138,796
Non-current liabilities:			
Long-term revenues bonds	853,332	902,981	968,026
Other non-current liabilities	141,151	158,612	173,073
Net pension liabilities	296,093	239,869	164,256
Total non-current liabilities	1,290,576	1,301,462	1,305,355
Total liabilities	1,510,612	1,456,951	1,444,151
Deferred inflows of resources			
Deferred inflows related to pension	18,445	30,493	31,808
Total liabilities and deferred inflows of resources	1,529,057	1,487,444	1,475,959
Net position			
Net investment in capital assets	395,518	304,415	189,356
Restricted (debt service)	89,921	93,185	112,088
Unrestricted	(134,768)	(70,389)	30,011
Total net position	350,671	327,211	331,455
Total liabilities, deferred inflows of resources, and net position	$1,879,728	$1,814,655	$1,807,414

Assets

Utility Plant

Utility plant, net of depreciation, totaled $1,311.4 million as of May 31, 2017, an increase of $52.9 million or 4.2% compared with the May 31, 2016 balance of $1,258.5 million. Capital expenditures for construction of distribution facilities, purchase of equipment, information technology enhancements, and other general improvements were $66.5 million for the nine month period ended May 31, 2017, compared to $61.3 million for the same period ended May 31, 2016. Utility plant, net of depreciation, totaled $1,258.5 million as of May 31, 2016, an increase of $44.0 million or 3.6% compared with the May 31, 2015 balance of $1,214.5 million. Capital expenditures for construction of distribution facilities, purchase of equipment, information technology enhancements, and other general improvements were $61.3 million for the nine month period ended May 31, 2016, compared to $54.7 million for the same period ended May 31, 2015.

Accounts Receivable

At May 31, 2017, accounts receivable (net) totaled $117.3 million, an increase of $10.6 million or 9.9% from the May 31, 2016 total of (net) $106.7 million. The accumulated provision for uncollectible accounts totaling $70.5 million decreased by $31.6 million for May 31, 2017 compared to May 31, 2016. The increase in accounts receivable (net) was caused by higher revenues for the nine month period ended May 31, 2017 as compared to the same period ended May 31, 2016. The May 31, 2016 accounts receivable (net) total of $106.7 million was $20.8 million lower than the May 31, 2015 balance. This decrease was caused by lower revenues during the nine month period ended May 31, 2015 as compared to the same period ended May 31, 2014. The accumulated provision for uncollectible accounts totaled $102.1 million and $114.3 million on May 31, 2016 and May 31, 2015, respectively.

Cash and Cash Equivalents; Gas Inventories, Materials, and Supplies; Other Current Assets,

As of May 31, 2017, cash and cash equivalents were $118.0 million, a decrease of $14.6 million from May 31, 2016. As of May 31, 2017, the value of natural gas in storage increased by $2.5 million or 8.6% compared to May 31, 2016. The increase in gas inventory reflects a 1.1 Bcf increase in the volume of natural gas in storage offset by a $0.07 drop in commodity cost per Mcf of natural gas. Materials and supplies of $40.4 million, which principally include gas inventory, maintenance spare parts, and material increased by $2.0 million compared to May 31, 2016. Other current assets totaled $13.8 million as of May 31, 2017, up $0.9 million from the same period the prior year, primarily due to an increase in the assets associated with accrued reimbursables, deferred GCR, excess liability insurance offset by a decrease in the receivable associated with the pension fund. As of May 31, 2016, cash and cash equivalents were $132.6 million, a decrease of $27.0 million from May 31, 2015. As of May 31, 2016, the value of natural gas in storage increased by $0.4 million or 1.4% compared to May 31, 2015. The increase in gas inventory reflects a 2.3 Bcf increase in the volume of natural gas in storage as well as a $0.80 drop in commodity cost per Mcf of natural gas. Materials and supplies of $38.4 million, which principally include gas inventory, maintenance spare parts, and material decreased by $0.4 million compared to May 31, 2015. Other current assets totaled $12.9 million as of May 31, 2016, up $5.4 million from the same period the prior year, primarily due to a receivable associated with the pension fund recorded as an asset.

Other Non-Current Assets; Unamortized Bond Issuance Costs, and Sinking Fund

As of May 31, 2017, other non-current assets, unamortized bond insurance costs, and the Sinking Fund totaled $122.2 million, a decrease of $9.1 million from May 31, 2016. This decrease was primarily caused by a lower amount required to be deposited in the Sinking Fund Reserve as a result of a lower outstanding principal amount of debt and lower unamortized bond insurance costs. As of May 31, 2016, other non-current assets, unamortized bond insurance costs, and the Sinking Fund totaled $131.3 million, a decrease of $24.9 million from May 31, 2015. This decrease was primarily caused by a lower amount required to be deposited in the Sinking Fund Reserve as a result of a lower outstanding principal amount of debt.

Deferred Outflows of Resources

Deferred outflows of resources represent amounts that relate to items that will result in a reduction of net income in the subsequent period, and consist of an amount offsetting PGW's interest rate swap liability related to variable rate debt, the unamortized loss on reacquired bonds, and deferred outflows related to the pension. Deferred outflows of resources increased to $153.9 million at May 31, 2017 as compared to $131.7 million at May 31, 2016.

Liabilities

Long-Term Revenue Bonds

Long-term debt, including the current portion and unamortized discount and premium, totaled $915.8 million for the period ended May 31, 2017, $38.3 million less than the same period ended May 31, 2016. Long-term debt, including the current portion and unamortized discount and premium, totaled $954.1 million for the nine month period ended May 31, 2016, $71.0 million less than the same period ended May 31, 2015. The decrease in both periods is primarily the result of the scheduled amortization of bond principal.

Other Current Liabilities

In the period ended May 31, 2017, accounts payable totaling $43.6 million increased $11.5 million or 35.8% compared with the same period ended May 31, 2016. The increase between fiscal years is due to higher natural gas payables balances. In the period ended May 31, 2016, accounts payable totaling $32.1 million decreased $6.3 million or 16.4% compared with the same period ended May 31, 2015.

In the period ended May 31, 2017, other current liabilities totaling $157.5 million increased $53.2 million or 51.0% compared with the period ended May 31, 2016. The increase was primarily caused by an increase in outstanding commercial paper. In the period ended May 31, 2016, other current liabilities totaling $104.3 million increased $22.6 million or 27.7% compared with the same period ended May 31, 2015.

Other Non-Current Liabilities

As of May 31, 2017, other liabilities totaling $141.2 million decreased $17.4 million compared to May 31, 2016 due primarily to a decrease in the OPEB liability and liabilities associated with the interest rate swap. As of May 31, 2016 other liabilities totaling $158.6 million decreased $14.5 million compared to May 31, 2015 primarily due to a decrease in the OPEB liability.

Net Pension Liabilities

The net pension liability at May 31, 2017 of $296.1 million reflects an increase of $56.2 million or 23.4% from May 31, 2016 and was primarily driven by a decrease in the discount rate from 7.65% to 7.30%, adoption of a new mortality table, and an adjustment made for actual investment performance.

Deferred Inflows of Resources

Deferred inflows of resources represent amounts that will result in an increase of net position in a subsequent period. Deferred inflows were recognized as a result of the implementation of GASB 68 and GASB 71 and represent the difference between actual and expected earnings on pension plan investments. The decrease in deferred inflows of $12.1 million or 39.7% between May 31, 2017 and May 31, 2016 is related to changes in investment performance.

Net Position

Net position as of September 1, 2013 was restated due to the implementation of GASB 68 and GASB 71 to reflect a total net position of $211.3 million, including a negative unrestricted net position of $12.4 million. Total net position increased $20.0 million or 7.8% to $278.0 million at August 31, 2015 and $10.0 million to $288.0 million at August 31, 2016, primarily due to increases in PGW's net investment in capital assets. Unrestricted net position decreased $79.3 million or over 100.0% to negative $92.6 million at August 31, 2015 and $124.0 million or over 100.0% to negative $216.8 million at August 31, 2016, primarily due to the recognition of the net pension liability in accordance with GASB 68 and GASB 71. Negative unrestricted net position indicates that liabilities to be paid from unrestricted assets exceed the unrestricted assets available to pay them. Due to the long term nature of PGW's net pension liability, this negative unrestricted net position is not indicative of PGW's near term liquidity. Net position as of May 31, 2017 was $350.7 million as compared to $327.2 million as of May 31, 2016. Unrestricted net position was a negative $134.8 million as of May 31, 2017 as compared to negative $70.4 million as of May 31, 2016.

Liquidity/Cash Flow

PGW had $71.0 million of commercial paper (consisting entirely of CP Capital Project Notes) outstanding as of May 31, 2017 and has the ability to issue up to $120.0 million of commercial paper. The unrestricted cash balance as of May 31, 2017 was $118.0 million as compared to $132.6 million as of May 31, 2016.

PGW Payment to City

PGW made a payment of $18.0 million to the City in each of the City's Fiscal Years 2017, 2016 and 2015. The City has the right to obtain such payment from PGW in any lawful manner, including set off against payments the City would otherwise make to PGW. The obligation of PGW to make the payment to the City is subject and subordinate to the pledge and application of "Gas Works Revenues" and "Project Revenues," as such terms are defined in the 1998 General Ordinance and the Act, respectively. See "SECURITY AND SOURCES OF PAYMENT FOR THE 1998 ORDINANCE BONDS – **Order of Application of Revenues**" herein.

Short-Term Debt

Due to the highly seasonal nature of PGW's business, short-term debt may be utilized to meet working capital requirements. Pursuant to the provisions of the Note Ordinance, the City may currently sell Gas Works Notes for working capital purposes in a principal amount, which together with interest, may not exceed $150.0 million outstanding at any one time. Pursuant to the provisions of the 1998 General Ordinance, the City may currently sell CP Capital Project Notes in an aggregate principal amount which may not exceed $120.0 million outstanding at any one time. $71.0 million in short-term notes (consisting entirely of CP Capital Project Notes) were outstanding as of May 31, 2017. There was $30.0 million in short-term notes (consisting entirely of CP Capital Project Notes) outstanding as of May 31, 2016 and no short-term notes outstanding as of May 31, 2015. Payment of principal of and interest on short-term notes has been secured by two letters of credit which will expire on October 13, 2017. A portion of the proceeds of the Bonds will be used to refund all outstanding CP Capital Project Notes in the amount of $101.0 million (inclusive of an additional $30.0 million in CP Capital Project Notes issued since May 31, 2017). The City is in the process of obtaining the Notes Line of Credit to fund advances for working capital requirements to be evidenced by Gas Works Notes and/or advances for capital purposes to be evidenced by CP Capital Project Notes. Under no circumstances will the City issue notes, together with interest thereon, in excess of $120.0 million, unless the stated amount of the related facility is increased by the applicable bank. See also "COMMERCIAL PAPER PROGRAM – Notes Line of Credit" above.

THE PGW CAFR

The "COMPREHENSIVE ANNUAL FINANCIAL REPORT FOR FISCAL YEARS ENDED AUGUST 31, 2016 AND 2015 OF THE PHILADELPHIA GAS WORKS" (the "PGW CAFR") is attached as APPENDIX A. The PGW CAFR includes audited Financial Statements (as defined below), required supplemental information and unaudited Introductory and Statistical Sections as reflected in the Table of Contents in APPENDIX A.

PGW is owned by the City, and is accounted for in the City's audited financial statements as a component unit of the City. See APPENDIX C – "THE CITY OF PHILADELPHIA GOVERNMENT AND FINANCIAL INFORMATION." The City Controller has examined and expressed opinions on the basic financial statements of the City contained in the City's Comprehensive Annual Financial Reports for Fiscal Year 2016 (the "City FY 2016 CAFR") but not those contained in the PGW 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 City FY 2016 CAFR. Some of the information set forth in APPENDIX C – "THE CITY OF PHILADELPHIA GOVERNMENT AND FINANCIAL INFORMATION" was derived from the City FY 2016 CAFR.

Independent Auditors

The basic financial statements of the Philadelphia Gas Works as of and for the fiscal years ended August 31, 2016 and August 31, 2015, included in APPENDIX A to this Official Statement (the "Financial Statements"), have been audited by KPMG LLP, as stated in their report appearing therein, dated December 28, 2016. Any financial information regarding the Philadelphia Gas Works other than in the Financial Statements has not been audited by any firm of independent auditors and no opinion on such information is expressed in this Official Statement.

Unaudited Statistical Section

PGW prepared the Statistical Section of the PGW CAFR to present comparative information to assist readers to better understand the Financial Statements, note disclosure and required supplementary information that appear elsewhere in the PGW CAFR and to more fully comprehend PGW's overall financial health. The information in the Statistical Section is presented for the past ten Fiscal Years.

The Statistical Section contains information regarding PGW's financial trends, revenue capacity, debt capacity, certain demographic and economic information and operating information.

TAX MATTERS

Federal

Exclusion of Interest from Gross Income

In the opinion of Co-Bond Counsel, under existing statutes, regulations, rulings and court decisions, interest on the Bonds will not be includible in the gross income of the holders thereof for federal income tax purposes, assuming continuing compliance by the City with the requirements of the Internal Revenue Code of 1986, as amended (the "Code"). Interest on the Bonds will not be a specific preference item for purposes of computing the federal alternative minimum tax ("AMT"); however, interest on the Bonds held by corporations is included in the computation of "adjusted current earnings," a portion of which is taken into account in determining the AMT imposed on corporations.

In rendering its opinion, Co-Bond Counsel have assumed compliance by the City with the covenants contained in the 1998 General Ordinance and the Tax Compliance Agreement that are intended to comply with the provisions of the Code relating to actions to be taken by the City in respect of the Bonds after issuance thereof to the extent necessary to effect or maintain the exclusion from federal gross income of the interest on the Bonds. These covenants relate to, inter alia, the use of and investment of proceeds of the Bonds and the rebate to the United States Treasury of specified arbitrage earnings, if any. Failure to comply with such covenants could result in interest on the Bonds becoming includible in gross income for federal income tax purposes from the date of issuance of the Bonds.

Other Federal Tax Matters

Ownership or disposition of the Bonds may result in other federal tax consequences to certain taxpayers, including, without limitation, certain S corporations, foreign corporations with branches in the United States, property and casualty insurance companies, taxpayers who have an initial basis in the Bonds greater or less than the principal amount thereof, individual recipients of Social Security or Railroad Retirement benefits, and taxpayers, including banks, thrift institutions and other financial institutions subject to Section 265 of the Code, who may be deemed to have incurred or continued indebtedness to purchase or to carry the Bonds.

Co-Bond Counsel are not rendering any opinion as to any federal tax matters other than those described under the caption "Exclusion of Interest from Gross Income" and expressly stated in the form of the opinions of Co-Bond Counsel included as APPENDIX H hereto. Prospective purchasers of the Bonds should consult their independent tax advisors with regard to all federal tax matters.

Pennsylvania

In the opinion of Co-Bond Counsel, under the laws of the Commonwealth of Pennsylvania as presently enacted and construed, interest on the Bonds is exempt from Pennsylvania personal income tax and Pennsylvania corporate net income tax and the Bonds are exempt from personal property taxes in Pennsylvania; however, under the laws of the Commonwealth, as enacted and construed on the date hereof, any profits, gains or income derived from the sale, exchange or other disposition of the Bonds will be subject to Pennsylvania taxes and local taxes within the Commonwealth.

Co-Bond Counsel are not rendering any opinion as to any Commonwealth of Pennsylvania tax matters other than those described under the caption "TAX MATTERS – **Pennsylvania**" and expressly stated in the form of the opinions of Co-Bond Counsel included as APPENDIX H hereto. Prospective purchasers of the Bonds should consult their independent tax advisors with regard to all Commonwealth of Pennsylvania tax matters.

Other

The Bonds and interest thereon may be subject to state and local taxes in jurisdictions other than the Commonwealth of Pennsylvania under applicable state or local tax laws.

Purchasers of the Bonds should consult their independent tax advisors with regard to all state and local tax matters.

Changes in Federal and Pennsylvania Tax Law

From time to time, there are legislative proposals in the Congress and in state legislatures that, if enacted, could alter or amend the treatment of the Bonds for federal and state tax purposes or adversely affect the market value or marketability of the Bonds. It cannot be predicted whether or in what form any such proposal might be enacted or whether, if enacted, it would apply to bonds issued prior to enactment. In addition, from time to time regulatory actions are announced or proposed, and litigation is threatened or commenced, which, if implemented or concluded in a particular manner, could adversely affect the market value or marketability of the Bonds. It cannot be predicted whether any such regulatory action will be implemented, whether any particular litigation or judicial action will be commenced or, if commenced, how it will be resolved, or whether the Bonds or the market value or marketability thereof would be affected thereby.

General

The foregoing is only a general summary of certain provisions of the Code and Pennsylvania law as enacted and in effect on the date of this Official Statement and does not purport to be complete. Holders and prospective purchasers of the Bonds, especially those subject to special rules, should consult their own tax advisors as to the effects, if any, of the Code and state and local tax matters, including 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 delivery of the Bonds, and Co-Bond Counsel will express no opinion as of any date subsequent thereto or with respect to any pending legislation, regulatory initiatives or litigation.

RATINGS

Moody's, S&P and Fitch have assigned the Bonds ratings of "A3," (stable outlook), "A," (stable outlook), and "BBB+," (stable outlook), respectively.

A rating, including any related outlook with respect to potential changes in such rating, reflects only the view of the rating agency giving such rating and is not a recommendation to buy, sell or hold the Bonds. An explanation of the procedure and methodology used by each rating agency and the significance of the rating it assigns to the Bonds may be obtained only from the rating agency furnishing the rating.

Ratings may be changed at any time, and no assurance can be given that they will not be revised downward or withdrawn entirely by any rating agency. Any such downward revision or withdrawal of a rating may have an adverse effect on the market price of the Bonds.

None of the City, PGW and the Underwriters has undertaken any responsibility to assure the maintenance of any particular rating on the Bonds and shall have no liability if a rating is lowered, withdrawn or suspended.

The City has agreed, in the Continuing Disclosure Agreement, to report actual rating changes on the Bonds. See "CONTINUING DISCLOSURE" herein.

NO LITIGATION

To the knowledge of the City of Philadelphia Law Department and, solely with respect to (E) below, based upon certain representations from PGW's General Counsel, after customary inquiry, no litigation is pending against the City before any court, public board or agency, or threatened in writing against the City (A) to restrain or enjoin the issuance, sale, execution or delivery of the Bonds, (B) which contests the validity or enforceability of the Bonds or any proceedings of the City taken with respect to the issuance, sale, execution or delivery thereof, (C) which contests the pledge or application of any moneys or security provided for the payment of the Bonds, (D) challenges the existence or powers of the City or (E) other than the named cases described in detail under "PHILADELPHIA GAS WORKS –**Litigation**" in which a final adverse determination, singly or in the aggregate, would have a material and adverse effect on PGW's operations or financial condition.

CERTAIN LEGAL MATTERS

All legal matters incident to the authorization, issuance and sale of the Bonds are subject to approval of the legality of the issuance of the Bonds by Eckert Seamans Cherin & Mellott, LLC and Andre C. Dasent, P.C., both of Philadelphia, Pennsylvania, Co-Bond Counsel. The proposed form of such opinions are included herein as APPENDIX H. Certain legal matters will be passed upon for the Underwriters by Greenberg Traurig LLP, of Philadelphia, Pennsylvania, Counsel to the Underwriters. Certain legal matters will be passed upon for the City by the City Solicitor. Certain legal matters will be passed upon for PGW by the Office of General Counsel of Philadelphia Gas Works and Eckert Seamans Cherin & Mellott, LLC of Harrisburg, Pennsylvania. Cozen O'Connor and Ahmad Zaffarese LLC, both of Philadelphia, Pennsylvania, as Co-Disclosure Counsel to the City for PGW, will each deliver an opinion to the City and the Underwriters regarding certain matters related to PGW. Hawkins Delafield & Wood LLP, of Washington, D.C., as Disclosure Counsel to the City, will deliver an opinion to the City and the Underwriters regarding certain matters relating to the information contained in APPENDIX C and APPENDIX D.

The various legal opinions to be delivered concurrently with the delivery of the Bonds express the professional judgment of the law firms rendering the opinions as to the legal issues explicitly addressed therein. In rendering a legal opinion, the law firm does not become an insurer or guarantor of that expression of professional judgment, of the transaction opined upon, or of the future performance of parties to the transaction. Nor does the rendering of an opinion guarantee the outcome of any legal dispute that may arise out of the transaction. These legal opinions, generally, are based on existing law and fact and each law firm expressly disclaims any obligation to update its opinions if there are changes in law or facts subsequent to the date of such opinions.

CO-FINANCIAL ADVISORS

PFM Financial Advisors LLC and Phoenix Capital Partners, LLP both of Philadelphia, Pennsylvania, have served as financial advisors (the "Financial Advisors") to the City in respect of the issuance of the Bonds.

The Financial Advisors assisted in the preparation of this Official Statement and in other matters relating to the planning, structuring and issuance of the Bonds.

The Financial Advisors have received and reviewed but have not independently verified information in this Official Statement for accuracy or completeness (except, as to each Financial Advisor, the information in this section). Investors should not draw any conclusions as to the suitability of the Bonds from, or base any investment decisions upon, the fact that the Financial Advisors have advised the City with respect to the Bonds. The Financial Advisors' fees for this issue are contingent upon the sale and issuance of the Bonds.

The Financial Advisors are financial advisory and consulting organizations and are registered municipal advisors and are not engaged in the business of underwriting, marketing or trading of municipal securities or any other negotiable instruments.

CERTAIN RELATIONSHIPS

PFM Financial Advisors LLC financial advisor to the City, acts as a consultant to PGW on certain management and labor relations issues and has provided testimony before the PUC on several PGW rate cases. Eckert Seamans Cherin & Mellott, LLC and Andre C. Dasent, P.C. each provides certain legal services to the City and to PGW. Cozen O'Connor and Ahmad Zaffarese LLC each provides certain legal services to the City on unrelated matters. Greenberg Traurig LLP provides certain legal services to the City on unrelated matters. Black & Veatch provides certain professional services (unrelated to the Independent Consultant's Engineering Report) to PGW.

UNDERWRITING

The underwriters listed on the cover page to this Official Statement (the "Underwriters") have agreed to purchase the Bonds from the City, subject to the terms and conditions of the Bond Purchase Agreement between the City and Underwriters, at a purchase price of $314,643,858.73 (which is equal to the par amount of $273,140,000.00 plus original issue premium of $42,696,822.50 less the Underwriters' discount of $1,192,963.77.

The Underwriters may offer and sell the Bonds to certain dealers and others (including sales for deposit into investment trusts, certain of which may be sponsored or managed by one or more of the underwriters) at prices lower than the public offering prices stated on the inside cover page hereof. The Bonds may be offered and sold to certain dealers (including the Underwriters and other dealers depositing Bonds into investment trusts) at prices lower than such offering prices, and such public offering prices may be changed from time to time by the Underwriters without prior notice.

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 activities and 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.

In the 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 trade securities, derivatives, loans, commodities, currencies, credit default swaps and other financial instruments for their own accounts and for the accounts of their customers, and such investment 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 or PGW. 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.

The City intends to use a portion of the proceeds from the Bonds to redeem, refund or defease the Refunded Bonds and to refund outstanding CP Capital Project Notes. To the extent an Underwriter or an affiliate thereof is an owner of the Refunded Bonds or CP Capital Project Notes, such Underwriter or its affiliate, as applicable, would receive a portion of the proceeds from the issuance of the Bonds contemplated herein in connection with such Refunded Bonds and CP Capital Project Notes being redeemed, refunded or defeased, as applicable, by the City.

Morgan Stanley & Co. LLC, an Underwriter of the Bonds, has entered into a retail distribution arrangement with its affiliate Morgan Stanley Smith Barney LLC. As part of this arrangement, Morgan Stanley & Co. LLC may distribute municipal securities to retail investors through the financial advisor network of Morgan Stanley Smith Barney LLC. As part of this arrangement, Morgan Stanley & Co. LLC may compensate Morgan Stanley Smith Barney LLC for its selling efforts with respect to the Bonds.

Loop Capital Markets LLC, an Underwriter of the Bonds, has entered into a distribution agreement with UBS Financial Services Inc. ("UBSFS") for the retail distribution of certain securities offerings at the original issue prices. Pursuant to the distribution agreement, UBSFS will purchase such Bonds from Loop Capital Markets LLC at the original issue prices less a negotiated portion of the selling concession applicable to any Bonds that the firm sells.

CONTINUING DISCLOSURE

In order to assist the Underwriters in complying with the requirements of Rule l5c2-12 promulgated by the Securities and Exchange Commission under the Securities Exchange Act of 1934, as amended, the City will enter into a Continuing Disclosure Agreement with Digital Assurance Certification, L.L.C., as dissemination agent for the benefit of the Registered Owners (as defined in such agreement) of the Bonds, to be dated the date of delivery of the Bonds, the form of which is attached hereto as APPENDIX F.

During the previous five years, the City has failed on occasion to timely file event notices related to certain changes to enhanced ratings assigned to bonds issued by or on behalf of the City (related to changes to the credit quality of banks providing credit and liquidity support for certain variable rate bonds). In one other instance, the City timely filed notice of a rating change but did not associate the notice with all specific relevant outstanding obligations and 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.

In February 2016, the City filed the following documents on the Municipal Securities Rulemaking Board's Electronic Municipal Market Access ("EMMA") system in connection with the continuing disclosure agreement relating to the Thirteenth Series Bonds (the "2015 CDA"): (i) PGW's Fiscal Year 2015 Audited Financial Statements, (ii) the City FY 2015 City CAFR, (iii) the City's Fiscal Year 2015 Annual Report of Bonded Indebtedness and Other Long Term Obligations, and (iv) the City's most recent official statement, dated January 13, 2016 (which was incorporated by reference). Under the 2015 CDA, such annual filings are due by April 26 of each year. The February 2016 filings did not include the PGW CAFR or updates to certain tables in the official statement for the Thirteenth Series Bonds, as required by the 2015 CDA. On August 2, 2016, the City filed the PGW CAFR and the updated official statement tables, along with a failure to file notice.

The City and PGW are reviewing the City's disclosure policies and procedures with respect to PGW to assist the City in complying with its continuing disclosure undertakings in the future.

CERTAIN REFERENCES

All summaries of the provisions of the Bonds and the security therefor, the Act, the Inventory and Receivables Financing Act, the Gas Choice Act, the Constitution and other laws of the Commonwealth, the 1998 General Ordinance, the Thirteenth Supplemental Ordinance, the Fourteenth Supplemental Ordinance and the Bond Committee Authorization, set forth herein, including APPENDIX E hereto, 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. Copies of the Act, the 1998 General Ordinance, the Thirteenth Supplemental Ordinance and the Fourteenth Supplemental Ordinance are available from the Office of the Director of Finance, Municipal Services Building, 1401 John F. Kennedy Boulevard, Suite 1330, Philadelphia, Pennsylvania 19102. Reference is made hereby to the complete documents relating to such matters for the complete terms and provisions thereof. So far as statements are made in this Official Statement involving matters of opinion, whether or not expressly so stated, they are made merely as such and not as representations of fact.

MISCELLANEOUS

This Official Statement is made available only in connection with the sale of the Bonds and may not be used in whole or in part for any other purpose. This Official Statement is not to be construed as a contract or agreement between the City, PGW or the Underwriters and the purchasers or owners of any of the Bonds. Any statements made in this Official Statement involving matters of opinion, whether or not expressly so stated, are intended merely as opinions and not as representations of fact. No representation is made that any opinions or estimates herein will be realized. The information and expressions of opinion herein are subject to change without notice, and neither the 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 PGW or the City since the date hereof. The City will provide financial and other information regarding PGW from time to time to S&P, Moody's and Fitch in connection with securities ratings assigned by those rating agencies to obligations payable from Gas Works Revenues.

The attached Appendices are an integral part of this Official Statement and should be read in their entirety together with the foregoing statements.

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

CITY OF PHILADELPHIA, PENNSYLVANIA

By:	/s/ Rob Dubow
Name:	Rob Dubow
Title:	Director of Finance

APPENDIX A

COMPREHENSIVE ANNUAL FINANCIAL REPORT
FOR FISCAL YEARS ENDED AUGUST 31, 2016 AND 2015
OF THE PHILADELPHIA GAS WORKS

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RENEWED ENERGY IN PHILADELPHIA

PGW

www.pgworks.com
800 West Montgomery Avenue
Philadelphia, PA 19122

Philadelphia Gas Works
(A Component Unit of the City of Philadelphia)
Comprehensive Annual Financial Report
For Fiscal Years Ended August 31, 2016 and 2015

Photo by C. Smyth for VISIT PHILADELPHIA®

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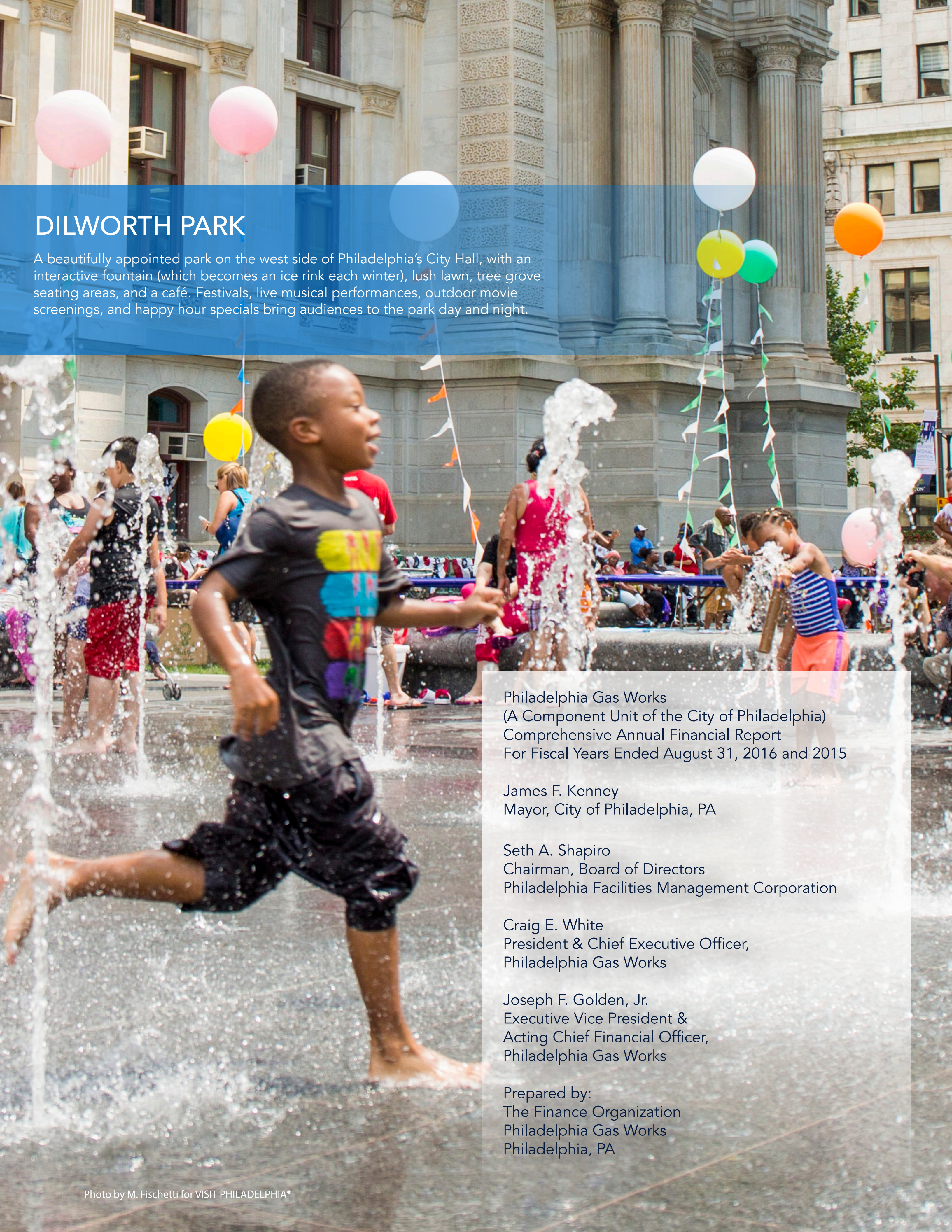

DILWORTH PARK

A beautifully appointed park on the west side of Philadelphia's City Hall, with an interactive fountain (which becomes an ice rink each winter), lush lawn, tree grove seating areas, and a café. Festivals, live musical performances, outdoor movie screenings, and happy hour specials bring audiences to the park day and night.

Philadelphia Gas Works
(A Component Unit of the City of Philadelphia)
Comprehensive Annual Financial Report
For Fiscal Years Ended August 31, 2016 and 2015

James F. Kenney
Mayor, City of Philadelphia, PA

Seth A. Shapiro
Chairman, Board of Directors
Philadelphia Facilities Management Corporation

Craig E. White
President & Chief Executive Officer,
Philadelphia Gas Works

Joseph F. Golden, Jr.
Executive Vice President &
Acting Chief Financial Officer,
Philadelphia Gas Works

Prepared by:
The Finance Organization
Philadelphia Gas Works
Philadelphia, PA

Photo by M. Fischetti for VISIT PHILADELPHIA®

PHILADELPHIA GAS WORKS
(A Component Unit of the City of Philadelphia)
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PHILADELPHIA HISTORY MUSEUM

Since 1938, this museum has engaged visitors with extraordinary collections that reflect Philadelphia's rich history and the diversity of its people and their neighborhoods through exhibitions, educational programs and technology which explore the past to better understand the present.

Introductory Section

Photo by J. Fusco for VISIT PHILADELPHIA®

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PHILADELPHIA GAS WORKS
Joseph F. Golden, Jr. • Executive Vice President and Acting Chief Financial Officer
800 West Montgomery Avenue • Philadelphia, PA 19122
Phone: 215-684-6464 • Fax: 215-684-6564
Email: JGolden@pgworks.com

The Chairman and Members of the Philadelphia Facilities Management Corporation
Philadelphia, Pennsylvania:

The Comprehensive Annual Financial Report (CAFR) of the Philadelphia Gas Works (PGW) for the years ended August 31, 2016 and 2015 is hereby submitted. The financial statements were prepared in accordance with Generally Accepted Accounting Principles in the United States of America (U.S. GAAP). Responsibility for both the accuracy of the data and the completeness and fairness of the presentation, including all disclosures, rests with PGW management.

The financial statements were audited by KPMG, a firm of licensed certified public accountants. The annual audit was conducted in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that KPMG plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of PGW's internal control over financial reporting. Accordingly, no such opinion was expressed. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. The audit provides a reasonable basis for KPMG's opinion.

KPMG's opinion states that, the financial statements present fairly, in all material respects, the financial position of PGW as of August 31, 2016 and 2015, and the changes in its financial position and its cash flows for the years then ended, in conformity with U.S. GAAP. Accordingly, an unmodified opinion was rendered. This independent auditor's report is presented as the first component of the financial section of this report.

Management is responsible for establishing and maintaining internal controls designed to protect the assets of PGW from loss, theft or misuse and to ensure that adequate accounting data are compiled to allow for the preparation of financial statements in conformity with U.S. GAAP. The internal controls are subject to periodic evaluation by management in order to determine its adequacy. The concept of reasonable assurance recognizes that: (1) the cost of a control should not exceed the benefits to be derived; and (2) the valuation of costs and benefits requires estimates and judgments by management.

Management has provided a narrative to accompany the basic financial statements. This narrative is known as Management's Discussion and Analysis (MD&A). This letter of transmittal is designed to complement the MD&A and should be read in conjunction with it.

PROFILE OF PHILADELPHIA GAS WORKS

PGW began providing gas service to the City of Philadelphia (the City) in 1836, when the City's first gas lights were turned on along Second Street, between Vine and South Streets. In 1841, PGW came under City ownership. In 1897, the City contracted for PGW to be managed by UGI Corporation (then United Gas Improvement Company). Effective January 1, 1973 the City contracted with Philadelphia Facilities Management Corporation to operate and manage PGW.

Prior to July 1, 2000, PGW was under the regulatory jurisdiction of the Philadelphia Gas Commission (PGC). The PGC had the authority to set PGW's rates and tariffs. The PGC also approved PGW's annual Operating Budget and reviewed PGW's Capital Budget prior to approval by the City Council of Philadelphia (City Council).

Effective July 1, 2000, and pursuant to the passage of the Pennsylvania Natural Gas Choice and Competition Act (the Act), PGW came under the regulatory jurisdiction of the Pennsylvania Public Utility Commission (PUC). Under the PUC's jurisdiction, PGW filed a restructuring plan on July 1, 2002, which among other things, provided for an unbundled tariff permitting customer choice of the commodity supplier by September 1, 2003. Under the Act, the PUC is required to follow the "same ratemaking methodology and requirements" that were previously applicable to the PGC when determining PGW's revenue requirements and approving overall rates and charges. The PGC continues to approve PGW's Operating Budget and review its Capital Budget. PGW's Capital Budget must be approved by City Council.

PGW, as of September 1, 2003, is operating under its Restructuring Compliance Tariff. The Restructuring Compliance Tariff Rates are designed to maintain revenue neutrality and the Tariff Rules and Regulations are designed to comport with the Pennsylvania Public Utility Code.

DISASTER RECOVERY AND BUSINESS CONTINUITY PLANNING

In order to promote coordination and integration of all emergency planning responsibilities, PGW has an emergency management program focused on safety, security, preparedness, disaster recovery, and business continuity. This program offers support for safety and security assessments, incident response, business continuity, and recovery. The program is designed to provide PGW with the necessary tools and expertise to respond and recover quickly to any potential emergency.

One of the responsibilities of the Business Continuity Program is to facilitate the creation of Business Continuity Plans at corporate and departmental levels. Plans are inclusive of associated trainings and exercises. PGW's Business Continuity Plans cover several types of events that would require the immediate and coordinated use of Plan guidelines. The planned scenarios include loss of gas supply to the City, sudden reduction of the workforce, or the loss of access to the corporate campus.

Business Continuity Plans provide organizational structures, roles, responsibilities, and protocols for providing emergency support. Additionally, they designate functional roles in the Incident Command System (ICS) to facilitate responsive and collaborative incident management. Use of ICS for emergency services is required by the United States Department of Homeland Security and Federal Emergency Management Agency as a condition for federal preparedness funding and emergency response reimbursement.

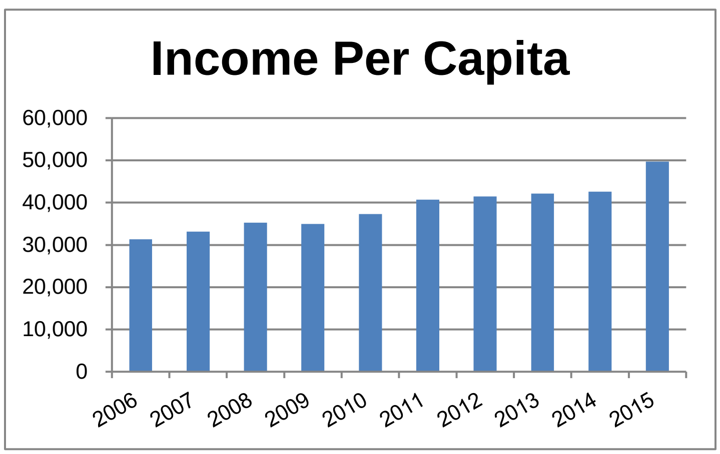
SAFETY AND RELIABILITY

PGW is committed to achieving the highest standards of safety and reliability. For more than 180 years it has successfully fostered and supported a utility-wide culture that puts safety first. As part of PGW's strong commitment to achieving the highest standards of safety and reliability PGW continually allocates the majority of its capital budget towards the replacement of mains and services.

PGW recently completed a new 2,200 square foot Gas Control Center which manages a complex natural gas distribution system. The Gas Control Center gives PGW new tools to be even more effective in providing safe and reliable service.

PGW is committed to being a responsible member of the community and invested in a new Mobile Command Center. Having this command center allows PGW to deploy emergency response teams to projects and incidents quickly and keep them fully equipped for as long as necessary.

THE LOCAL ECONOMY



The local economy is showing progress on several fronts. During the ten-year period between 2006 and 2015 (calendar years) the population of the City grew 3.1% from 1,520,000 to 1,567,000. This growth reverses a trend over the past few decades of declining population. During such period, per capita income grew 58.9% from $31,288 in 2006 to $49,701 in 2015. Unemployment numbers have also improved. As of 2015, unemployment stood at 6.9%, slightly higher than the 6.2% level in 2006. However, this represents a 3.9% improvement from the 10.8% unemployment rate recorded in both 2010 and 2011.

PGW CARES ABOUT OUR COMMUNITY

While the local economy has improved, PGW recognizes the challenges faced by its customers and has taken responsible action to assist those customers in need. PGW provides a discount on gas rates for certain senior citizens. There are approximately 16,700 customers receiving this discount on their current gas bills. PGW also provides a discounted payment structure with a possible forgiveness of arrearages over a three-year time period. This program is offered to low income customers. There were approximately 51,000 customers enrolled in this program at the end of FY 2016.

Another program PGW sponsors is the EnergySense portfolio of energy efficiency programs to help customers conserve gas and save money. Since launching EnergySense in January 2011, PGW has completed over 18,300 projects at a cost of $34.8 million. Included in the EnergySense portfolio are rebates for the purchase of new high efficiency natural gas equipment for homes and businesses and for home energy efficiency upgrades. PGW also offers grants for energy saving designs and upgrades at new and existing commercial buildings. Over their lifetimes, these projects are estimated to save approximately 9.7 billion British Thermal Units of natural gas and reduce CO_2 emissions by 654,742 short tons.

Additionally, PGW launched its Purchase of Receivable/Consolidated Billing program in February 2016, to support supplier choice in the local market. For program participants, PGW purchases their customers' receivables and sends a commodity payment to suppliers each month. With consolidated billing, customers still receive one utility bill that displays both supplier commodity charges and PGW distribution charges. Three natural gas suppliers are currently participating in the program. Nine more are in the process of entering the market.

PGW is also committed to finding and nurturing the next generation of workers. In FY 2016, PGW was involved in developing the curriculum for the Gas Distribution Pipeline Mechanic Introduction Program at Delaware County Community College. This hands-on program prepares students for entry-level employment installing and maintaining natural gas distribution systems.

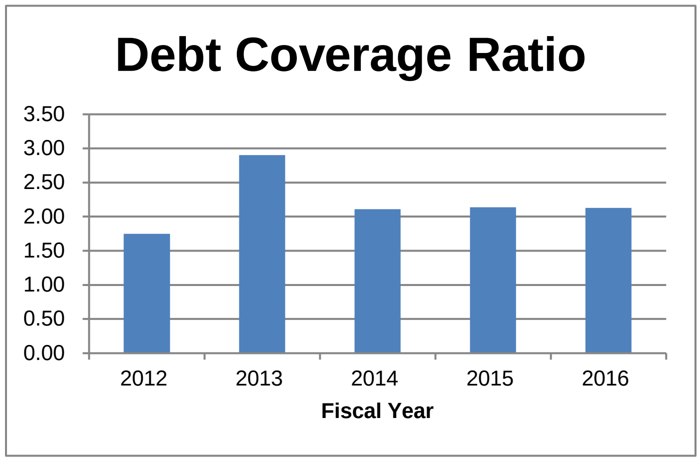
PGW also has a college intern program that provides real life working opportunities for full time students enrolled in various colleges and universities in the area. To date, PGW has provided over 200 job opportunities in this program and has provided full time employment to over 25 college interns who were successful participants in the college intern program. PGW actively participates in the Workready/Philadelphia Youth Network Summer High School Intern program. PGW has provided opportunities for over 110 high school students in this program. Through these internship programs, PGW is providing real world work experience for the students and helping to prepare them for their future, and in some cases, providing a starting career.

Looking forward, PGW will adopt a 9th Grade class at a nearby high school in FY 2017. PGW employees will mentor students, aiming to inspire them to complete their education and also highlight opportunities at PGW in careers such as science, technology, engineering, and math.

FACTORS AFFECTING FINANCIAL CONDITION

The information presented in this report is best understood in the context of the environment in which PGW operates. A more comprehensive analysis of these factors is available in PGW's Operating Budget and Five-Year Forecast and Capital Budget and Five-Year Forecast. These documents can be obtained online at www.pgworks.com.

For FY 2016, PGW reported net income of $10.1 million, 49.5% lower than net income reported in FY 2015. The lower net income was primarily the result of the implementation of Governmental Accounting Standards Board Statement No. 68, *Accounting and Financial Reporting for Pensions,* which caused higher pension costs to be recorded on the income statement. These costs were somewhat offset by lower costs associated with uncollectable accounts in FY 2016 as compared to FY 2015. PGW saw further reductions to long-term debt. Going forward, the challenge is to reduce the dependency on heating degree days, while continuing to increase top line revenue and provide positive cash flow. PGW's objective is to increase demand for natural gas by exploring new markets, which produce new revenue streams.

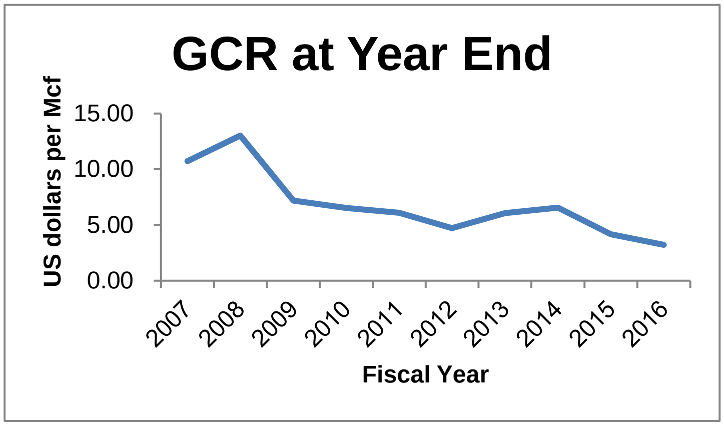


Standard & Poor's Financial Services has upgraded PGW's bond rating to A from A-, citing strengthened fixed coverage and an expectation of additional improvement over the next five years. Moody's Investors Service maintained PGW's bond rating at Baa1 but raised its outlook to positive, citing PGW's strengthened financial position as rationale for the upgrade in outlook. Fitch Ratings maintained PGW's bond rating at BBB+. Upgraded bond ratings and outlooks may potentially lower interest rates on future borrowing.

PGW has created a Capital Projects Commercial Paper Program to take advantage of low short-term borrowing rates. By borrowing at lower interest rates, PGW lowers expenses and ultimately lowers costs for ratepayers. PGW short-term notes may not exceed $120.0 million outstanding at any time. Notes issued pursuant to the Capital Projects Commercial Paper Program are supported by one of two irrevocable letters of credit.

During FY 2016, the City issued Gas Works Revenue Bonds, Fourteenth Series (1998 General Ordinance) in the amount of $312.4 million for the purpose of redeeming, refunding, or defeasing certain existing bonds. The bonds have fixed interest rates that range from 2.0% to 5.0% and have maturity dates through 2038. This transaction provided net present value debt service savings of $38.2 million. The savings as a percentage of the refunded bonds was 10.9%.

The single greatest operating expense for PGW is the cost of natural gas. The rate charged to PGW's customers to recover these costs is called the Gas Cost Rate (GCR). The GCR reflects the increases or decreases in natural gas costs and other costs. These costs represented 31.1% and 44.8% of total operating expenses in FY 2016 and FY 2015, respectively. This GCR mechanism provides the flexibility to rapidly reflect current conditions without the time delay inherent in full base rate alteration. The intent is to achieve an annual balance between the costs incurred for fuel and their pass through to customers.



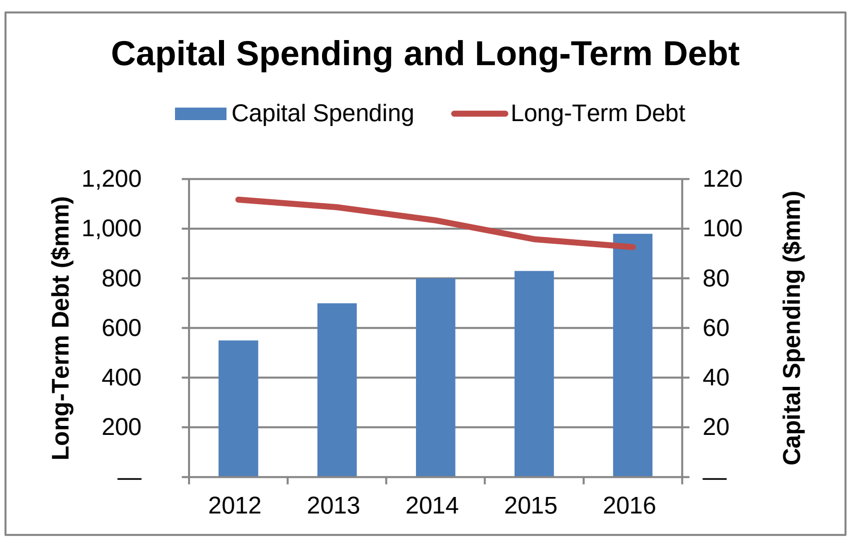
In FY 2016, the average commodity price of natural gas was $2.20 per thousand cubic feet (Mcf). This marks a 42.7% decrease in price from the prior fiscal year and is reflected in lower monthly bills to customers. PGW has increased sourcing of natural gas from the lower priced Appalachian Basin which includes the Marcellus shale region. Approximately 50% of PGW's gas supply was purchased from this region in FY 2016.

The temperature and other weather conditions greatly affect the gas usage of heating customers of PGW. Colder than normal weather conditions results in a greater demand for natural gas and warmer than normal weather conditions results in a lower demand for natural gas. In FY 2016, the temperature in Philadelphia was much warmer (20.8%) than normal resulting in decreased demand for natural gas.

Recognizing the need to stabilize and normalize revenue due to variations in weather from one fiscal year to another fiscal year, PGW requested and received approval from the PUC in 2002 for a Weather Normalization Adjustment Clause (WNA) to address fluctuating revenue due to weather conditions. The purpose of the WNA is to neutralize the impact of weather on PGW's revenues. This allows PGW to achieve the recovery of appropriate costs as authorized by the PUC. The WNA results in neither a rate increase nor a rate decrease, but acts as a billing adjustment. The main benefits of the WNA are the stabilization of cash flow and the need for less short-term borrowing from year to year. The WNA is applied to customer bills rendered during the period of October 1 through May 31 of each year for each billing cycle. During FY 2016, PGW billed its customers $41.5 million in WNA charges.

LONG-TERM PLANNING

PGW's long-term financial planning is performed on a rolling five-year forward basis. Consistent with PGC regulations, updates to the five-year operating forecast and five-year capital forecast are annually reviewed by the PGC and input from the public is sought and welcomed. PGW's forecasts provide estimates of rate impacts on projected



spending and compliance with debt service coverage and fund balance reserve requirements. PGW's budget is aligned with its long-term strategic goals and objectives, providing funding for operating programs. PGW has identified key initiatives which will increase efficiency and create greater value for ratepayers.

PGW has recently completed an assessment of its properties in order to evaluate PGW's current facility space utilization and develop optimum use. Also evaluated were the current conditions and cost estimates to bring the facilities uniformly up to good condition.

A review of gas infrastructure replacement efforts, particularly those related to the replacement of cast iron mains, including a review and assessment of PGW's efforts to comply with the Distribution Integrity Management Program has recently been completed. The FY 2017 goal is to remove 34.8 miles of cast iron main from service with estimated program spending of $54.0 million.

UPGRADING PGW INFRASTRUCTURE

PGW's annual capital program primarily supports an infrastructure investment plan to replace existing plant and facilities to ensure that PGW continues to operate its assets at a high standard of safety and reliability. The capital budget also supports PGW's efforts to provide for new load additions that offer economic advantages. This helps to spread PGW's fixed costs over a larger volume of customer usage, thereby positively impacting customer rates. Additionally, funds are requested for investment in systems and technology to improve customer service and the efficiency of its delivery. The vast majority of PGW's capital program is dedicated to maintaining the integrity of underground distribution facilities. As part of PGW's capital improvement program, PGW is replacing portions of its mains with more state-of-the-art plastic pipe. Based on reports submitted annually by PGW to the US Department of Transportation, PGW experienced an average of 2,849 main leaks permanently repaired per year from FY 2012 through FY 2016. The Philadelphia Office of Sustainability currently includes the methane released during PGW's main leaks in the City's carbon budget. On February 14, 2012, Act 11 was signed into law, providing Pennsylvania utility companies with a supplemental recovery mechanism (a Distribution System Improvement Charge, or DSIC) for costs related to incremental/accelerated distribution system repair, improvement and replacement. Act 11 permits gas utilities to recover from customers 5.0% of their non-gas revenues via the recovery mechanism. In order for a utility company to establish such a recovery mechanism, it must submit, along with other requirements, a Long-Term Infrastructure Improvement Plan (LTIIP) and a DSIC petition to the PUC for review and approval. Accordingly, PGW submitted its LTIIP in December 2012, and filed its DSIC petition in January 2013. The PUC approved PGW's DSIC

petition with an effective date of June 1, 2013 and PGW implemented the DSIC surcharge on July 1, 2013. This mechanism allows PGW to increase its main replacement program by up to $22.0 million per year without incurring long-term debt. Actual DSIC billings were $22.6 million and $14.0 million in FY 2016 and FY 2015, respectively. In September 2015, the PUC approved an increase in the DSIC rate to 7.5% that will allow PGW to recover up to $33.0 million for main replacement. In February 2016 the PUC approved an increase in the DSIC recovery percentage to allow PGW to recover an additional $11.4 million over two years. The $11.4 million represents an under-recovery of DSIC related expenditures from prior fiscal years.

PGW continues to utilize internally generated funds (IGF) for capital construction, thereby reducing its dependence on long-term debt financing. Using IGF to pay for capital projects instead of long-term debt has saved PGW approximately $12.5 million in interest costs over the past five fiscal years.

GREEN INITIATIVES

PGW's Green Initiative Program was established as a way to meet federal, state, and city goals and also to reduce PGW's carbon footprint.

As part of the program, PGW actively promotes Compressed Natural Gas (CNG) technology to its customers, particularly those with fleet operations. The benefits of Natural Gas Vehicles (NGV) include PGW's lower NGV fuel rate and the reduced environmental impact of CNG fuel. PGW also assists its customers with project development by identifying grant opportunities and putting them in touch with other potential resources.

In August 2016, the City received a Congestion Mitigation and Air Quality Improvement grant from the Delaware Valley Regional Planning Commission. The City is using $2.0 million of grant money to purchase natural gas powered trash trucks for use in collecting municipal trash. These 'near-zero' emission vehicles will have the latest engine technology, reducing harmful nitrogen oxide emissions by 90.0% per truck. The new vehicles will also support PGW's efforts to expand the local gas vehicle market and promote clean natural gas technologies. The vehicles are expected to be placed in service in December 2017.

MARKETING EFFORTS

PGW's Marketing department is focused on natural gas market growth and retention in the City. Natural gas is Philadelphia's clean energy solution and Marketing is dedicated to promoting natural gas as the best value in today's competitive energy market. PGW promotes viable solutions for the energy needs of all its customers.

Large commercial and industrial sales are managed by the Major Accounts sales group, which is responsible for 1.0 billion cubic feet of new natural gas load in FY 2016. Major Accounts is focused on developing new business and promoting energy solutions with operational and economic advantage for PGW and its customers. Major Accounts actively promotes commercial and industrial customers to convert to natural gas fueled Combined Heat and Power (CHP) applications. Amongst the successful CHP conversion projects during FY 2016 were two hospitals and a senior living community generating a combined 170,000 Mcf in new sales.

Small commercial and residential sales are managed by the Residential and Commercial sales group, which is responsible for approximately 343,000 Mcf of new natural gas load in FY 2016. A highpoint in FY 2016 was a residential project in South Philadelphia which added 8,000 Mcf annually. The project consists of 96 luxury townhomes and features all-gas appliances.

The Marketing team also oversees the advertising and sales of PGW's Parts and Labor Plan (PLP) and residential conversion incentives. PLP serves to protect customers from parts and labor costs associated with the repair of covered equipment. The program generated $5.9 million in revenue with over 42,500 plans sold in FY 2016. The residential conversion program incentivizes qualified customers to convert their home heaters from an alternative fuel to natural gas fuel. The residential conversion program accounted for 5,600 Mcf in new load for FY 2016.

ACKNOWLEDGEMENTS

The Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to PGW for its CAFR for the fiscal year ended August 31, 2015. This was the fourth straight year that PGW received this prestigious award. In order to be awarded a Certificate of Achievement, a government must publish a CAFR that satisfies both GAAP and legal requirements. The Certificate of Achievement is valid for a period of one year only. PGW believes our current report continues to conform to the Certificate of Achievement program requirements and is submitting it to the GFOA for consideration for another certificate. This report for FY 2016 is PGW's fifth submission to the program. The preparation of the CAFR on a timely basis was made possible by the dedicated service of the entire staff of the Finance organization as well as various other departments within PGW. Each has my sincere appreciation for their valuable contributions.

Respectfully submitted,

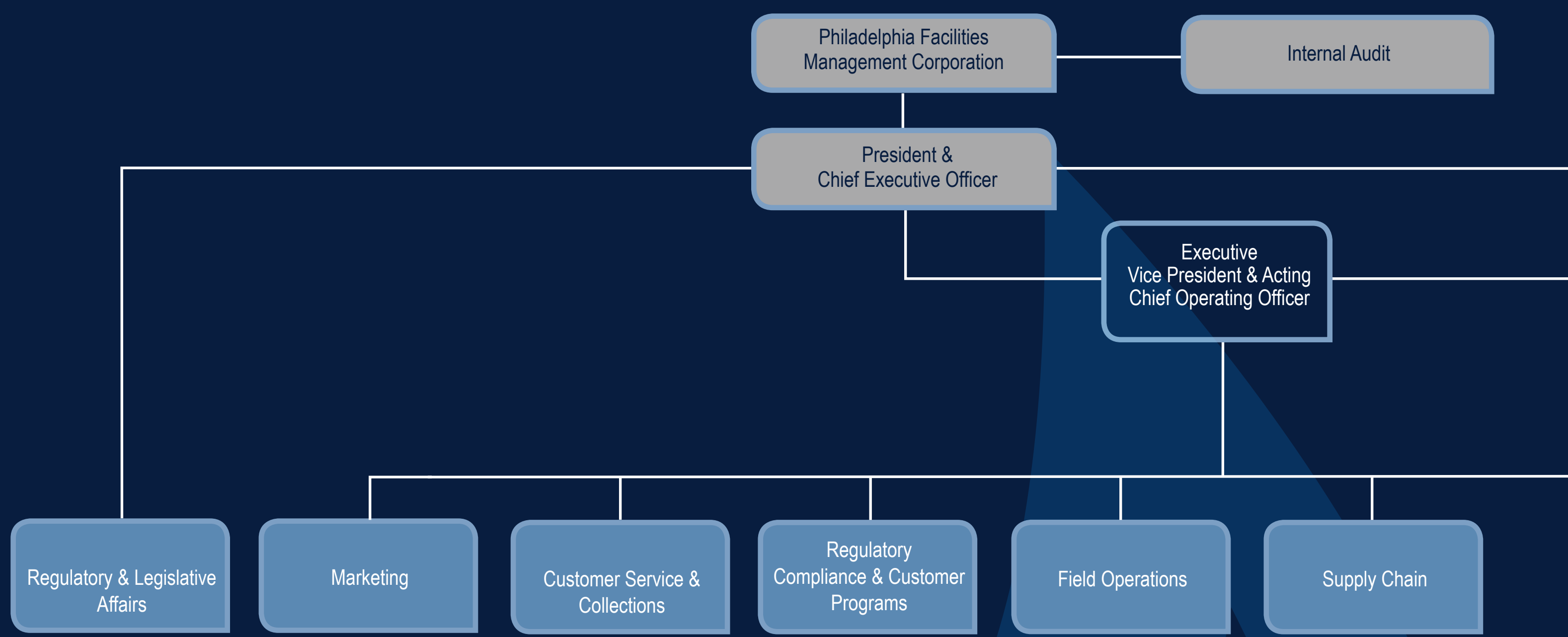
Joseph F. Golden, Jr.

Joseph F. Golden, Jr.

Executive Vice President and Acting Chief Financial Officer

February 23, 2017

PHILADELPHIA GAS WORKS ORGANIZATIONAL CHART



LEADERSHIP

Craig E. White
President & Chief Executive Officer

Douglas A. Moser
Executive Vice President &
Acting Chief Operating Officer

Joseph F. Golden, Jr.
Executive Vice President &
Acting Chief Financial Officer

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Senior Vice President,
Human Resources, Labor, &
Corporate Communications

Raymond M. Snyder
Senior Vice President,
Gas Management

Eloise N. Young
Senior Vice President,
Strategic Planning &
Information Services

Denise Adamucci
Vice President,
Regulatory Compliance &
Customer Programs

Bernard L. Cummings
Vice President,
Customer Service & Collections

William J. Gallagher
Vice President,
Budget & Strategic Development

Raquel N. Guzmán, Esquire
Vice President,
Legal & General Counsel

Michael H. Jones
Vice President,
Technical Compliance

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Vice President,
Supply Chain

Paul A. Mondimore
Vice President,
Strategic Initiatives
Operations

Gregory Stunder
Vice President,
Regulatory & Legislative
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Lorraine S. Webb
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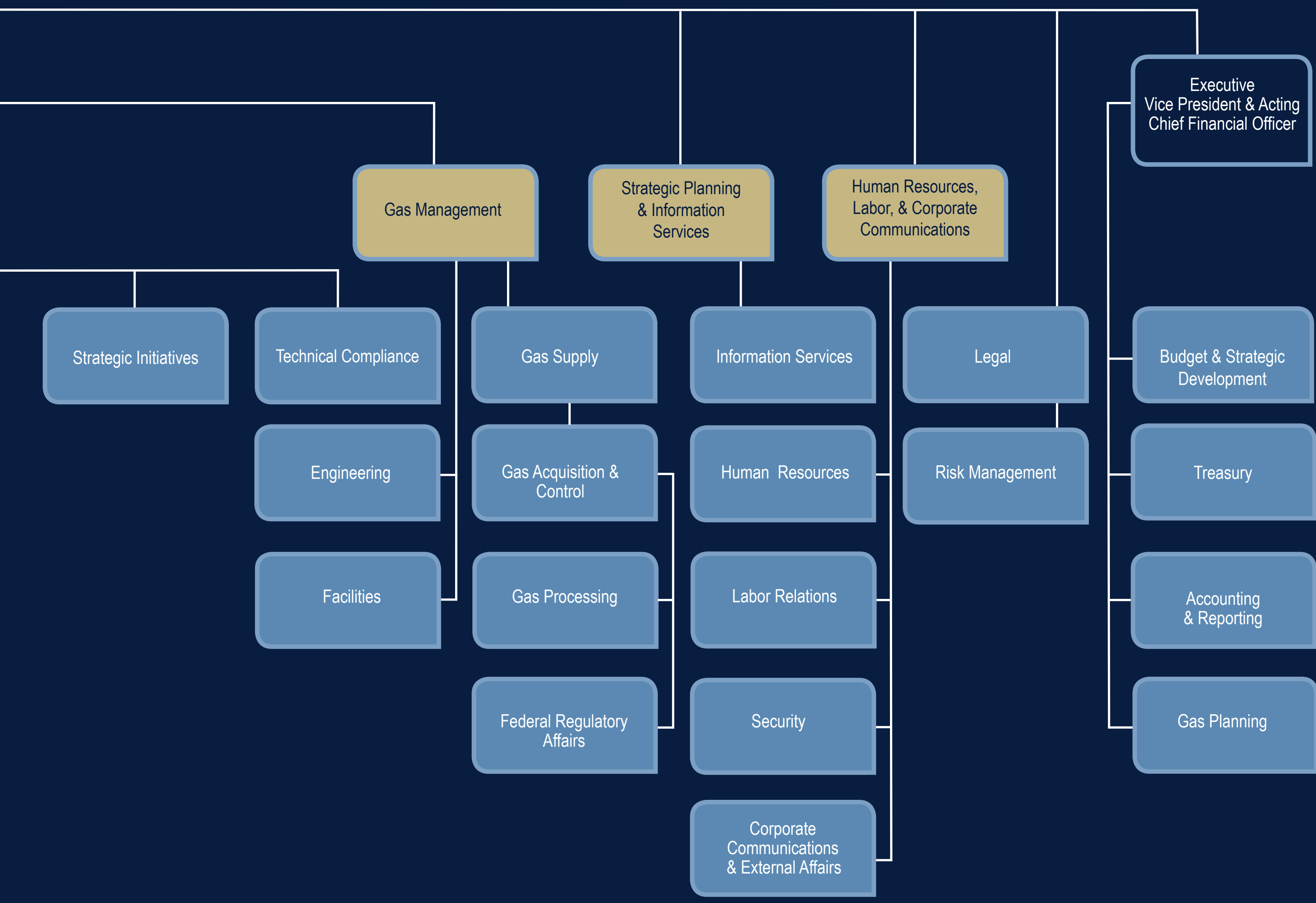
Human Resources &
Organizational
Development

Frank Weigert
Chief Information Officer
& Vice President,
Information Services

Raymond J. Welte
Acting Vice President,
Field Operations

John C. Zuk
Vice President,
Gas Supply



Philadelphia Facilities Management Corporation

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The Goldenberg Group
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Audit/Finance Committee

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City of Philadelphia
Board Treasurer
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James Engler

Deputy Mayor for Policy
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Rodriguez Consulting LLC
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Committee

Albert Mezzaroba, Esq.

Of Counsel,
Genova Burns
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Leigh Whitaker

Vice President for
Communications,
Sugar House Casino
Board Secretary
Chair, Workforce Development
Committee

Government Finance Officers Association

Certificate of Achievement for Excellence in Financial Reporting

Presented to

Philadelphia Gas Works

Pennsylvania

For its Comprehensive Annual
Financial Report
for the Fiscal Year Ended

August 31, 2015

Executive Director/CEO

SPRUCE STREET HARBOR PARK

Lauded as one of the best urban beaches in America, this pop-up park invites visitors to lounge on its signature hammocks, enjoy food on its floating restaurant, cool off with drinks from the garden, and hang out and play games along its waterfront boardwalk. Visitors also enjoy the vibrant LED lighting hanging from the treetops, and a packed schedule of entertainment throughout the season.

Financial Section

Photo by M. Edlow for VISIT PHILADELPHIA®

KPMG LLP
1601 Market Street
Philadelphia, PA 19103-2499

Independent Auditors' Report

The Controller of the City of Philadelphia and
Chairman and Members of the Philadelphia
Facilities Management Corporation
Philadelphia, Pennsylvania:

We have audited the accompanying financial statements of Philadelphia Gas Works (the Company), a component unit of the City of Philadelphia, Pennsylvania, as of and for the years ended August 31, 2016 and 2015, and the related notes to the financial statements, which collectively comprise the Company's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with U.S. generally accepted accounting principles; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of Philadelphia Gas Works, as of August 31, 2016 and 2015, and the changes in its financial position, and its cash flows for the years then ended, in accordance with U.S. generally accepted accounting principles.

KPMG

Emphasis of Matter

As discussed in note 1(u) to the financial statements, in 2015 the Company adopted GASB Statement No. 68, *Accounting and Financial Reporting for Pensions*, and GASB Statement No. 71, *Pension Transition for Contributions Made Subsequent to the Measurement Date*, and applied the provisions of those standards retrospectively as of September 1, 2013. Our opinion is not modified with respect to this matter.

Other Matters

Required Supplementary Information

U.S. generally accepted accounting principles require that management's discussion and analysis on pages 3-15 and the schedules of changes in net pension liability and related ratios, pension contributions, and other postemployment benefits funding progress on pages 69-71 be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audits of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Information

The introductory and statistical sections have not been subjected to the auditing procedures applied in the audits of the basic financial statements and, accordingly, we do not express an opinion or provide any assurance on them.

KPMG LLP

Philadelphia, Pennsylvania
December 28, 2016

The narrative overview and analysis of the financial statements of Philadelphia Gas Works (the Company or PGW) for the years ended August 31, 2016 and 2015 have been prepared by PGW's management. The information presented here is unaudited and should be read in conjunction with additional information contained in PGW's financial statements.

Financial Highlights

- The Fiscal Year (FY) 2016 reflected a 20.8% warmer than normal winter. The FY 2016 period was 24.5% warmer than the prior year and firm gas sales decreased by 10.7 billion Cubic Feet (Bcf). In addition, the Weather Normalization Adjustment (WNA) Clause, which was in effect from October 2015 through May 2016, resulted in heating customers receiving charges totaling $41.5 million as a result of the temperatures experienced during the period. The FY 2015 reflected a 4.4% colder than normal winter. The FY 2015 period was 0.9% colder than the prior year; however, firm gas sales decreased by 0.1 Bcf. In addition, the WNA Clause, which was in effect from October 2014 through May 2015, resulted in heating customers receiving credits totaling $10.7 million as a result of the temperatures experienced during the period.
- PGW achieved a collection rate of 98.4% in the current period, 97.1% in FY 2015, and 95.0% in FY 2014. The increase in the collection rate of 1.3% between FY 2016 and FY 2015 was primarily driven by lower gas billings. Total gas billings are down primarily due to lower commodity prices for natural gas and significantly warmer than normal temperatures. Over the past 10 years, the cost of fuel has fallen approximately 72.8%. The cost of natural gas is a significant portion of total gas billings. The collection rate is calculated by dividing the total gas receipts collected in FY 2016 by the total gas billings that were applied to PGW customers' accounts from September 1, 2015 through August 31, 2016. The same methodology was utilized in FY 2015 and FY 2014.
- PGW continues to have various business initiatives that pertain to improving collections, productivity, and operational efficiencies throughout the Company. PGW, at the end of FY 2016 had $71.0 million of tax-exempt capital project commercial paper outstanding. At the end of FY 2015, there was $30.0 million of tax-exempt capital project commercial paper outstanding. There was no tax-exempt capital project commercial paper in FY 2014. The cash balances at the end of FY 2016 and FY 2015 were $91.7 million and $114.3 million, respectively. PGW had a cash balance of $105.7 million at the end of FY 2014.
- *Liquidity/Cash Flow* – At December 15, 2016, $49.0 million was available from the commercial paper program. The cash balance at December 15, 2016 was $68.9 million.
- The Company's FY 2017 Capital Budget was approved by the City Council of the City of Philadelphia in an amount not to exceed $118.3 million and funding was provided to continue the implementation of an 18-mile Cast Iron Main Replacement (CIMR) Program. Main replacement cost for this program in FY 2017 is expected to be $24.4 million. The total six-year cost of the CIMR Program is forecasted to be $154.9 million.
- On August 30, 2016, the City of Philadelphia (the City) issued Gas Works Revenue Bonds, Fourteenth Series (1998 General Ordinance) in the amount of $312.4 million for the purpose of redeeming, refunding, or defeasing City of Philadelphia Gas Works Revenue Bonds. The proceeds of the bonds were used to defease portions of the outstanding Seventh Series Bonds (1998 General Ordinance), Eighth Series A Bonds (1998 General Ordinance), and Ninth Series Bonds (1998 General Ordinance), and were used to

pay the costs of issuing the Fourteenth Series Bonds. The Fourteenth Series Bonds, with fixed interest rates that range from 2.0% to 5.0%, have maturity dates through 2038. The loss on this refunding of $33.5 million will be amortized over the life of the Fourteenth Series Bonds. This transaction provided net present value debt service savings of $38.2 million utilizing an arbitrage yield of 2.11%. The savings as a percentage of refunded bonds was 10.86%.

- In FY 2015, the Company retrospectively adopted new required pension accounting standards, Governmental Accounting Standards Board (GASB) Statement No. 68, *Accounting and Financial Reporting for Pensions* (GASB 68), and GASB Statement No. 71, *Pension Transition for Contributions Made Subsequent to the Measurement Date* (GASB 71), as of September 1, 2013. The adoption of these standards resulted in the following:

  – Recognition of a net pension liability for the single-employer Philadelphia Gas Works Pension Plan (Pension Plan) of $148.7 million at September 1, 2013, which increased to $164.3 million at August 31, 2014, $239.9 million at August 31, 2015 and $296.1 million at August 31, 2016. The net pension liability represents the total actuarially determined liability less the Pension Plan's fiduciary net position.

  – A decrease in unrestricted net assets as of September 1, 2013 of $147.2 million, which resulted in a negative unrestricted net position of $12.4 million.

  – Recognition of deferred inflows and outflows related to the pension resulting in balances of $0.0 million and $11.7 million in deferred inflows and $88.0 million and $78.1 million in deferred outflows at August 31, 2016 and 2015, respectively. These deferred inflows and outflows of resources are related to differences between actual and expected investment returns, assumption changes, differences between expected and actual experience, and pension contributions made after the measurement date. GASB 68 requires changes in expected versus actual investment returns to be amortized into pension expense over five years, and actuarial assumption changes and experience differences to be amortized over the average remaining years of active employment for Pension Plan participants. The impact of this amortization over time will increase volatility in annual amounts recognized as pension expense compared to amounts recognized under prior accounting standards.

  – Pension expense was restated for the year ended August 31, 2014 resulting in an additional $2.7 million of expense to a total of $27.2 million.

  – Pension expense was $62.3 million for the year ended August 31, 2016 as compared to $43.7 in FY 2015.

Overview of the Financial Statements

The discussion and analysis are intended to serve as an introduction and overview of PGW's basic financial statements. PGW's financial statements comprise the following:

Financial statements provide both long-term and short-term information about PGW's overall financial condition, results of operations, and cash flows.

The notes to basic financial statements provide additional information that is essential to a full understanding of the data presented in PGW's financial statements. The notes can be found immediately following the basic financial statements.

The financial statements report information about PGW as a whole using accounting methods similar to those used by private sector business. The three statements presented are as follows:

The statements of revenues and expenses and changes in net position present revenues and expenses and their effects on the change in net position during the fiscal year. These changes in net position are recorded as soon as the underlying event giving rise to the change occurs, regardless of when cash is received or paid.

The balance sheets include all of PGW's assets, liabilities, and deferred inflows/outflows of resources, with the difference between the assets and deferred outflows and liabilities and deferred inflows reported as net position. Over time, increases or decreases in net position are indicators of whether PGW's financial position is improving or deteriorating.

The statements of cash flows provide relevant information about the cash receipts and cash payments of an enterprise during a period and the impact on PGW's financial position.

Condensed Statements of Revenues and Expenses

(Thousands of U.S. dollars)

	Years ended August 31		
	2016	**2015**	**2014***
Total gas revenues	$ 572,348	676,027	736,138
Other revenues	18,889	21,220	22,998
Total operating revenues	591,237	697,247	759,136
Fuel expense	146,524	252,169	304,051
All other operating expenses	370,433	354,357	336,892
Total operating expenses	516,957	606,526	640,943
Operating income	74,280	90,721	118,193
Interest and other income	1,393	3,784	3,597
Total interest expense	(47,619)	(56,523)	(57,135)
Distribution to the City of Philadelphia	(18,000)	(18,000)	(18,000)
Excess of revenues over expenses	$ 10,054	19,982	46,655

* FY 2014 has been restated as a result of the implementation of GASB 68 and GASB 71 (see note 10 to the basic financial statements.)

Operating Revenues

Operating revenues in FY 2016 were $591.2 million, a decrease of $106.0 million or 15.2% from FY 2015. The decrease was caused by lower natural gas sendout, which was approximately 17.2% lower in FY 2016 when compared to FY 2015. Operating revenues in FY 2015 were $697.2 million, a decrease of $61.9 million or 8.2% from FY 2014. The decrease in FY 2015 was due to a lower Gas Cost Rate (GCR). Please see the discussion of the cost of fuel in the *Operating Expenses* Section below.

Total sales volumes, including gas transportation deliveries, in FY 2016 decreased by 13.3 Bcf to 65.9 Bcf or 16.8% from FY 2015 sales volumes of 79.2 Bcf. Total sales volumes, including gas transportation deliveries, in FY 2015 increased by 0.1 Bcf to 79.2 Bcf or 0.1% from FY 2014 sales volumes of 79.1 Bcf. In FY 2016, firm gas sales of 37.7 Bcf were 10.7 Bcf or 22.1% lower than FY 2015. In FY 2015, firm gas sales of 48.4 Bcf were 0.1 Bcf or 0.2% lower than FY 2014. Interruptible customer sales decreased by 0.5 Bcf compared to FY 2015. The decrease in FY 2016 interruptible sales was caused by decreased opportunities for Liquefied Natural Gas (LNG) sales. Gas transportation sales in FY 2016 decreased by 2.1 Bcf to 28.2 Bcf from the 30.3 Bcf level experienced in FY 2015. Gas transportation sales in FY 2015 increased by 0.9 Bcf to 30.3 Bcf from the 29.4 Bcf level experienced in FY 2014.

In FY 2016, the number of customers served by PGW increased from the previous year and was approximately 502,000 customers. The number of customers served by PGW at the end of FY 2015 and FY 2014 was approximately 501,000 and 500,000, respectively. There were approximately 25,000 Commercial accounts, reflecting no change from the previous two fiscal years. Industrial accounts were unchanged from the previous two fiscal years at approximately 700 customers. The number of residential accounts in FY 2016 increased to approximately 476,300 customers, an increase of 1,000 customers from the FY 2015 level, and 2,000 higher from the 2014 level.

Operating Expenses

Total operating expenses, including fuel costs, in FY 2016 were $517.0 million, a decrease of $89.5 million or 14.8% from FY 2015. The decrease for FY 2016 was mainly caused by lower natural gas volumes and lower natural gas commodity prices, which was partially offset by higher costs associated with the pension. Total operating expenses, including fuel costs, in FY 2015 were $606.5 million, a decrease of $34.4 million or 5.4% from FY 2014. The decrease for FY 2015 reflects lower natural gas commodity prices.

Cost of Fuel – The cost of natural gas utilized decreased by $105.7 million or 41.9% to $146.5 million in FY 2016 compared with $252.2 million in FY 2015. The average commodity price per Thousand Cubic Feet (Mcf) decreased by $1.64 or $66.2 million, while the volume of gas utilized decreased by 10.3 Bcf, 20.2% or $39.4 million. There were less than $0.1 million of pipeline supplier refunds in FY 2016 as compared to none in FY 2015 while demand charges increased by $0.1 million, compared to FY 2015. Cost of fuel includes all commodity charges and demand charges net of pipeline refunds.

The cost of natural gas utilized decreased by $51.9 million or 17.1% to $252.2 million in FY 2015 compared with $304.1 million in FY 2014. The average commodity price per Mcf decreased by $0.79 or $39.8 million, while the volume of gas utilized decreased by 2.4 Bcf, 4.5% or $11.1 million. In addition, there were no pipeline supplier refunds in FY 2015 as compared to $4.4 million in FY 2014 while demand charges decreased by $5.4 million, compared to FY 2014.

Variations in the cost of purchased gas are passed through to customers under the GCR provision of PGW's rate schedules. Over recoveries or under recoveries of purchased gas costs are subtracted from or added to gas revenues and are included in other current assets or other current liabilities, thereby eliminating the effect that recovery of gas costs would otherwise have on net income.

The average natural gas commodity prices for utilized gas for FY 2016, FY 2015, and FY 2014 were $2.20, $3.84, and $4.63 per Mcf, respectively.

Other Operating Expenses – Expenditures for street operations, infrastructure improvements, and plant operations in FY 2016 were $91.4 million, a $2.3 million or 2.5% decrease from the FY 2015 total of $93.7 million. The decrease in FY 2016 was mainly caused by lower labor costs associated with the Distribution department. The FY 2015 total of $93.7 million was $0.4 million lower than the FY 2014 total of $94.1 million as a result of lower labor costs associated with running the LNG plants.

Additionally, expenses of $126.7 million related to collection and account management, customer services, marketing, and the administrative area increased by $2.9 million or 2.3% in FY 2016 primarily due to higher administrative and healthcare expenses, offset by lower expenses associated with marketing. This category increased by $7.6 million or 6.5% in FY 2015 compared to FY 2014 primarily due to higher healthcare expenses, costs of customer programs, and an increase in customer services.

Pension costs increased in FY 2016 due to a number of factors including a decrease in the discount rate from 7.65% to 7.30%, and lower than anticipated earnings in FY 2016. Pension costs increased by $18.6 million or 42.6% to $62.3 million in FY 2016 as compared to FY 2015. Pension costs increased by $16.5 million or 60.7% to $43.7 million in FY 2015 as compared to FY 2014.

Other Postemployment Benefits (OPEB) costs increased $3.9 million in FY 2016 when compared to FY 2015. OPEB costs increased in FY 2016 due to increased normal costs and increased insurance expenses. OPEB costs remained the same in FY 2015 when compared to FY 2014. For FY 2016, FY 2015, and FY 2014, the Company utilized a discount rate of 7.95%. The higher OPEB Trust Fund (the Trust) balances created higher investment income and lower unfunded liabilities. These factors lowered OPEB costs.

The annual OPEB cost is recorded in the statements of revenues and expenses and changes in net position. For the year ended August 31, 2016, approximately $9.9 million was recorded to other postemployment benefits expense and $31.1 million was allocated to administrative and general expense. For the year ended August 31, 2015, approximately $6.7 million was recorded to other postemployment benefits expense and $30.3 million was allocated to administrative and general expense.

The net OPEB obligation was $81.4 million for the fiscal year ended August 31, 2016, an $8.6 million decrease from the $90.0 million obligation at August 31, 2015. The net OPEB obligation was $90.0 million for the fiscal year ended August 31, 2015, an $11.8 million decrease from the $101.8 million obligation at

(Continued)

August 31, 2014. This decrease was caused by a decrease in the annual OPEB cost and an increase of contributions made during the year.

Provision for Uncollectible Accounts – The provision for uncollectible accounts in FY 2016 totaled $27.1 million, a decrease of $7.7 million or 22.1% from FY 2015. The provision for uncollectible accounts in FY 2015 totaled $34.8 million, a decrease of $4.0 million or 10.3% from FY 2014. The decrease in the provision for uncollectible accounts is mainly due to higher collection rates achieved in FY 2016 and FY 2015, and lower gas revenues. The accumulated provision for uncollectible accounts at August 31, 2016 reflects a balance of $74.3 million, compared to the $102.0 million balance in FY 2015 and $107.3 million in FY 2014. Net write-offs for FY 2016 were $54.9 million as compared to $40.2 million and $38.1 million in FY 2015 and FY 2014, respectively. PGW is committed to continuing its collection efforts in an attempt to reduce outstanding delinquent account balances and to provide assistance to those customers who qualify for low-income grants and payment programs to help those customers maintain their gas service.

Net Depreciation Expense – Net depreciation expense increased by $1.6 million in FY 2016 compared with FY 2015. Net depreciation expense increased by $2.1 million in FY 2015 compared with FY 2014. The effective composite depreciation rates were 2.2% for FY 2016, FY 2015, and FY 2014. Cost of removal is charged to expense as incurred.

Interest and Other Income – Interest and other income in FY 2016 was $2.4 million lower than FY 2015, primarily due to a change in accounting for revenue from pipeline capacity releases. In FY 2016, pipeline capacity release revenues are classified as other operating revenues. Interest and other income in FY 2015 was $0.2 million higher than FY 2014, primarily due to an increase in income from pipeline capacity releases.

Interest Expense – Total interest expense was $47.6 million in FY 2016 a decrease of $8.9 million or 15.8% when compared with FY 2015. Interest expense was lower in FY 2016 primarily due to lower principal debt balances. Total interest expense was $56.5 million in FY 2015 a decrease of $0.6 million or 1.1% when compared with FY 2014. Interest expense was lower in FY 2015 primarily due to lower principal debt balances. Other interest costs decreased in FY 2016 by $3.1 million or 27.0%, primarily due to the amortization of bond premium related to the Thirteenth Series bonds. Other interest costs increased in FY 2015 by $2.1 million or 22.3%, primarily due to the issuance expenses related to the Thirteenth Series bonds.

(Continued)

Excess of Revenues over Expenses – In FY 2016, the Company's excess of revenues over expenses was $10.1 million, a decrease of $9.9 million from FY 2015. This decrease is primarily due to the items noted above. In FY 2015, the Company's excess of revenues over expenses was $20.0 million, a decrease of $26.7 million from FY 2014. This decrease is primarily due to the additional pension expenses recognized in FY 2015 as a result of the implementation of GASB 68.

Condensed Balance Sheets

(Thousands of U.S. dollars)

		Years ended August 31		
Assets		**2016**	**2015**	**2014***
Current assets:				
Accounts receivable (net of accumulated provision for uncollectible accounts of $74,286, $102,029, and $107,349 for 2016, 2015, and 2014, respectively)	$	73,563	86,853	101,457
Restricted investment funds		2,603	5,820	5,820
Cash and cash equivalents, cash designated for capital expenditures, gas inventories, materials, and supplies and other current assets		170,651	178,831	204,944
Total current assets		246,817	271,504	312,221
Noncurrent assets:				
Utility plant, net		1,284,810	1,232,370	1,193,552
Unamortized bond insurance costs		512	3,473	14,136
Sinking fund, revenue bonds		86,652	90,141	105,909
Other assets		34,789	37,646	37,528
Total noncurrent assets		1,406,763	1,363,630	1,351,125
Total assets		1,653,580	1,635,134	1,663,346
Deferred Outflows of Resources				
Accumulated fair value of hedging derivatives		14,763	20,948	18,879
Unamortized losses on reacquired debt		57,175	37,471	37,051
Deferred outflows related to pension		88,043	78,128	46,131
Total deferred outflows		159,981	136,547	102,061
Total assets and deferred outflows of resources	$	1,813,561	1,771,681	1,765,407

Condensed Balance Sheets

(Thousands of U.S. dollars)

Net Position, Liabilities, and Deferred Inflows	Years ended August 31 2016	2015	2014*
Net position	$ 288,038	277,984	258,002
Long-term revenue bonds	881,620	914,719	980,749
Other noncurrent liabilities	149,621	168,399	179,265
Net pension liability	296,093	239,869	164,256
Total noncurrent liabilities	1,327,334	1,322,987	1,324,270
Current liabilities:			
Current portion of revenue bonds	44,803	43,030	53,227
Notes payable	71,000	30,000	—
Other current liabilities	82,386	86,027	98,100
Total current liabilities	198,189	159,057	151,327
Deferred inflows related to pension	—	11,653	31,808
Total net position, liabilities, and deferred inflows	$ 1,813,561	1,771,681	1,765,407

* FY 2014 has been restated as a result of the implementation of GASB 68 and GASB 71 (see note 10 to the basic financial statements)

Assets

Accounts Receivable – In FY 2016, accounts receivable (net) of $73.6 million decreased by $13.3 million or 15.3%, from FY 2015 due to lower gas billings during FY 2016, which resulted from lower volumes and lower commodity prices for natural gas. In FY 2015, accounts receivable (net) of $86.9 million decreased by $14.6 million or 14.4%, from FY 2014 due to lower gas billings during FY 2015, which resulted from lower commodity prices for natural gas. The accumulated provision for uncollectible accounts, totaling $74.3 million decreased by $27.7 million in FY 2016 and totaled $102.0 million in FY 2015 and $107.3 million in FY 2014.

Cash and Cash Equivalents, Gas Inventories, Materials, and Supplies, and Other Current Assets – In FY 2016, cash and cash equivalents totaled $91.7 million, a decrease of $22.6 million from the FY 2015 total of $114.3 million and totaled $105.7 million in FY 2014. In FY 2016, gas inventories, materials, and supplies totaled $47.9 million, a decrease of $3.0 million from the FY 2015 total of $50.9 million. In FY 2015, gas inventories, materials, and supplies totaled $50.9 million, a decrease of $19.1 million from the FY 2014 total of $70.0 million. In FY 2016, gas storage totaled $38.6 million, a decrease of $2.2 million or 5.5% when compared to FY 2015. The decrease in gas inventory reflects a decrease in the cost per Mcf of gas stored. Actual volumes in storage as of August 31, 2016 were 14.9 Bcf, an increase of 8.8% compared to the prior year. In FY 2015, gas storage decreased by $19.3 million or 32.1% when compared to FY 2014. The decrease in gas inventory reflects lower volumes of gas in storage and a decrease in the cost per Mcf. Other current assets totaled $31.0 million in FY 2016, an increase of $17.4 million from FY 2015, primarily as a result of an increase in the deferred GCR. Other current assets totaled $13.6 million in FY 2015, a decrease of $5.6 million from FY 2014, primarily as a result of a decrease in the deferred GCR.

Restricted Investment Funds – Restricted Investment Funds include the Workers Compensation Escrow Fund and the Health Insurance Escrow Fund. Interest income on all funds, to the extent not drawn, is reflected as an increase of $0.0 million in FY 2016, $0.5 million in FY 2015, and $0.4 million in FY 2014. Pursuant to the Pennsylvania Department of Labor and Industry Bureau of Workers' Compensation Self-Insurance policy, the Company has established and maintained a restricted trust account. As of August 31, 2016, 2015, and 2014, the trust account balances were $2.6 million. PGW is self-insured for the healthcare of active employees and retirees under the age of 65. Retirees over the age of 65 are insured on an experience-rated basis. Prior to FY 2016, PGW had a Health Insurance Escrow Fund that, as of August 31, 2015 and 2014, was funded in the amount of $3.2 million. The Health Insurance Escrow Fund was closed in September 2015. PGW negotiated the closing of this account by providing an advance deposit of $0.8 million to the healthcare provider.

Utility Plant and Other Noncurrent Assets – In FY 2016, noncurrent assets including utility plant, net, and unamortized bond insurance costs totaled $1,406.8 million, an increase of $43.2 million from FY 2015. In FY 2015, noncurrent assets including utility plant, net, and unamortized bond insurance costs totaled $1,363.6 million, an increase of $12.5 million from FY 2014. Utility plant, net, totaled $1,284.8 million in FY 2016, an increase of $52.4 million or 4.3% compared with the FY 2015 balance of $1,232.4 million. Utility plant, net, totaled $1,232.4 million in FY 2015, an increase of $38.8 million or 3.3% compared with the FY 2014 balance of $1,193.6 million. Capital expenditures for construction of distribution facilities, purchase of equipment, information technology enhancements, and other general improvements were $97.9 million in FY 2016 compared to $82.6 million in FY 2015 and $80.2 million in FY 2014. PGW funded capital expenditures through drawdowns from the Capital Improvement Fund in the amount of $34.1 million in FY 2014. There were no Capital Improvement Fund drawdowns in FY 2016 or FY 2015. The major capital expenditures are associated with PGW's gas supply infrastructure, namely, gas mains, and customer service lines, including capital expenditures for the Long-Term Infrastructure Improvement Plan.

In early 2012, Act 11 was enacted by the Pennsylvania Legislature, which permitted public utilities to file a request with the Pennsylvania Public Utility Commission (PUC) for the implementation of a Distribution System Improvement Charge (DSIC). A DSIC permits natural gas distribution companies to recover the costs related to main and service replacement not already recovered in base rates. This legislation provides utility companies with a supplemental recovery mechanism for costs related to incremental/accelerated distribution system repair, improvement, and replacement. Act 11 permits gas utilities to recover 5.0% of their nongas revenues via the recovery mechanism and permits greater percentage increases if approved by the PUC. The Company started billing customers a DSIC surcharge as of July 1, 2013. In FY 2016, the Company billed customers $22.6 million for the DSIC surcharge. In FY 2015, the Company billed customers $14.0 million for the DSIC surcharge. The DSIC surcharge is fully reconcilable on a calendar-year basis and at the fiscal year-end, the over billed or under billed amount is recorded as an adjustment to revenue. For additional information, see note 1(h) *Revenue Recognition* of the basic financial statements.

Deferred Outflows of Resources – Deferred outflows of resources represent amounts that will result in a reduction of net position in a subsequent period. Deferred outflows include the accumulated fair value of hedging derivatives that will be recognized in the statement of revenues and expenses and changes in net position upon termination of the hedging relationship; unamortized losses on reacquired debt; and increases in the pension liability that will be amortized into pension expense in future periods. Deferred outflows increased $23.5 million or 17.2% from FY 2015 to FY 2016, and $34.5 million or 33.8% from FY 2014 to FY 2015 primarily due to increased unamortized losses on reacquired debt and the recognition of deferred outflows of resources related to pension due to the implementation of GASB 68 and GASB 71 as described above.

Liabilities

Long-Term Revenue Bonds – Long-term revenue bonds, including the current portion and unamortized discount and premium, totaled $926.4 million in FY 2016. This was $31.3 million less than the previous year primarily as a result of normal debt principal payments, refunding, and advanced payments. This represents 76.3% of total capitalization in FY 2016. Long-term revenue bonds, including the current portion and unamortized discount and premium, totaled $957.7 million in FY 2015. This was $76.3 million less than the previous year primarily as a result of normal debt principal payments. Long-term revenue bonds, including the current portion and unamortized discount and premium, totaled $1,034.0 million in FY 2014. Long-term debt represented 77.5% of total capitalization in FY 2015 and 80.0% of total capitalization in FY 2014. For additional information, see note 8, *Long-Term Debt and Other Liabilities* of the basic financial statements.

Debt Service Coverage Ratio and Ratings – PGW has a mandatory debt service coverage ratio of 1.50 times debt service on both the 1975 and 1998 Ordinance Bonds. At August 31, 2016, only Senior 1998 Ordinance Bonds were outstanding. At August 31, 2016, debt service coverage on Senior 1998 Ordinance Bonds was 2.13 times, compared to 2.14 and 2.11 times at August 31, 2015 and 2014, respectively. At the time of the refunding in August 2015, debt service coverage on 1975 Ordinance Bonds was 6.57 times as compared to 6.15 times at August 31, 2014. PGW's current bond ratings are "Baa1" from Moody's Investors Service (Moody's), "A" from Standard & Poor's Rating Service (S&P), and "BBB+" from Fitch Ratings.

Current Portion of Revenue Bonds and Notes Payable – Pursuant to the provisions of the City of Philadelphia Note Ordinances, PGW may sell short-term notes to either support working capital requirements or pay the costs of certain capital projects and other project costs. PGW may issue short-term notes in a principal amount, which, together with interest, may not exceed $150.0 million outstanding to support working capital requirements. PGW may also sell additional short-term notes in an aggregate principal amount, which may not exceed $120.0 million outstanding at any time to pay the costs of certain capital projects and other project costs. All notes are supported by two irrevocable letters of credit and a security interest in PGW's revenues. The letter of credit supporting PGW's combined commercial paper programs set the maximum level of outstanding notes plus interest at $120.0 million in FY 2016, FY 2015, and FY 2014. There was $71.0 million of tax-exempt capital project commercial paper outstanding at August 31, 2016. At the end of FY 2015, there was $30.0 million of tax-exempt capital project commercial paper outstanding and no tax-exempt capital project commercial paper outstanding in FY 2014.

Other Current Liabilities – In FY 2016, other current liabilities totaled $13.8 million, a decrease of $0.3 million from FY 2015, mainly due to a change in the value of natural gas deferred refunds. In FY 2015, the total was $14.1 million, and $19.3 million in FY 2014. In FY 2016, accounts payable totaled $55.9 million, a decrease of $0.1 million or 0.2% compared with FY 2015 primarily due to a decrease in natural gas payables of $0.2 million. In FY 2015, accounts payable totaled $56.0 million, a decrease of $2.9 million or 4.9% compared with FY 2014 primarily due to a decrease in natural gas payables of $2.5 million and a decrease in trade payables of $0.4 million.

Other Noncurrent Liabilities – In FY 2016, other noncurrent liabilities totaled $149.6 million, a decrease of $18.8 million compared to FY 2015. The decrease in FY 2016 is primarily due to the change in the value of the OPEB liability and a change in value of the interest rate swap. In FY 2015, other noncurrent liabilities totaling $168.4 million, a decrease of $10.9 million compared to FY 2014. The decrease in FY 2015 is primarily due to the change in the value of the OPEB liability.

Net Pension Liability – The increase in the net pension liability of $56.2 million or 23.4% in FY 2016 as compared to FY 2015 was primarily driven by a decrease in the discount rate from 7.65% to 7.30%, and lower than anticipated earnings in FY 2016. The increase in the net pension liability of $75.6 million or 46.0% in FY 2015 as compared to FY 2014 was primarily driven by a decrease in the discount rate from 7.95% to 7.65%, adoption of a new mortality table, and an unusually large number of retirees at the end of calendar year 2014. Net pension liability totaled $164.3 million in FY 2014.

Deferred inflows of resources – Deferred inflows of resources represent amounts that will result in an increase of net position in a subsequent period. Deferred inflows were recognized as a result of the implementation of GASB 68 and GASB 71 and represent the difference between actual and expected earnings on pension plan investments. The decrease in deferred inflows of $11.7 million or 100.0% between FY 2015 and FY 2016 is related to changes in investment performance and an accounting reclassification. There was $31.8 million in deferred inflows of resources at August 31, 2014.

Net position – Net position as of September 1, 2013 was restated due to the implementation of GASB 68 and GASB 71 to reflect a total net position of $211.3 million, including a negative unrestricted net position of $12.4 million. Total net position increased $20.0 million to $278.0 million at August 31, 2015 and $10.0 million to $288.0 million at August 31, 2016, primarily due to increases in the Company's net investment in capital assets. Unrestricted net position decreased $79.3 million or over 100.0% to negative $92.6 million at August 31, 2015 and $124.0 million or over 100.0% to negative $216.8 million at August 31, 2016, primarily due to the recognition of the net pension liability in accordance with GASB 68 and GASB 71. Negative unrestricted net position indicates that liabilities to be paid from unrestricted assets exceed the unrestricted assets available to pay them. Due to the long-term nature of the Company's net pension liability, this negative unrestricted net position is not indicative of the Company's near-term liquidity.

Other Financial Factors

Recent Rate Filings

On December 18, 2009, PGW submitted a base rate filing with the PUC (1) to maintain the $60.0 million base rate increase that the PUC granted in 2008; and (2) to fund PGW's OPEB liability in the amount of

$42.5 million. PGW also moved to consolidate the Company's Demand Side Management Program, an energy efficiency and conservation plan, into the base rate filing. On May 19, 2010, PGW, along with all active parties to the proceeding, submitted a Petition for Proposed Settlement of the proceeding (the Settlement) and the PUC approved the Settlement on July 29, 2010. Under the Settlement, PGW was permitted to maintain virtually all of the extraordinary base rate relief, received an incremental rate increase of $16.0 million annually, and was required to fund $18.5 million of the OPEB liability in each of the fiscal years 2011 through 2015 (the incremental rate increase of $16.0 million annually is related to an OPEB surcharge, which was approved to continue beyond 2015). PGW also agreed to continue funding the OPEB liability at $18.5 million annually. The Settlement also permitted the implementation of the Demand Side Management Program.

Additionally, on May 9, 2013, the PUC entered an order approving PGW's DSIC. The DSIC permitted PGW to recover reasonable and prudent costs incurred to repair, improve, or replace certain eligible distribution property that is part of the utility's distribution system, in an amount up to 5.0% of distribution revenues. On September 1, 2015, PGW proposed an increase in the DSIC from 5.0% to 7.5% of distribution revenues and to levelize and annualize the DSIC. The PUC issued an Opinion and Order granting PGW's request to increase its DSIC to 7.5% on January 28, 2016 (January 28 Order). The increase, from $22.0 million to $33.0 million per year, will generate approximately $11.0 million in additional revenue to fund PGW's accelerated pipeline replacement program. The January 28 Order also permits PGW to levelize and annualize DSIC recovery, which will provide PGW with more predictable cash flow and may help mitigate overcollections and undercollections. PGW's increased DSIC charge of 7.5% became effective on February 1, 2016.

On July 6, 2016, the PUC issued an Opinion and Order that permitted PGW to recover an additional $11.4 million in DSIC undercollections for the year ended December 31, 2015, over the course of two years. This results in a temporary increase in the DSIC of an additional $5.7 million a year for two years, for a total DSIC rate of 8.84%. PGW intends to implement the temporary increase on October 1, 2016, which will terminate on September 30, 2018. PGW is considering requesting future increases to the DSIC once the 7.5% DSIC has been in place for a period of two years and PGW has had the opportunity to evaluate the effect of such increase on risk and customers and PGW's ability to effectively implement the level of accelerated pipeline replacement associated with the 7.5% DSIC (or higher levels).

Refunding, Defeasance, and Redeeming of Debt

On August 30, 2016, the City issued Gas Works Revenue Bonds, Fourteenth Series (1998 General Ordinance) in the amount of $312.4 million for the purpose of redeeming, refunding, or defeasing City of Philadelphia Gas Works Revenue Bonds. The proceeds of the bonds were used to defease portions of the outstanding Seventh Series Bonds (1998 General Ordinance), Eighth Series A Bonds (1998 General Ordinance), and Ninth Series Bonds (1998 General Ordinance), and were used to pay the costs of issuing the Fourteenth Series Bonds. The Fourteenth Series Bonds, with fixed interest rates that range from 2.0% to 5.0%, have maturity dates through 2038.

Contacting the Company's Financial Management

This financial report is designed to provide the citizens of Philadelphia, customers, investors, and creditors with a general overview of PGW's finances and to demonstrate PGW's accountability for the money it receives. If you have questions pertaining to this report or need additional financial information, please contact Philadelphia Gas Works, 800 W. Montgomery Avenue, Philadelphia, PA 19122 or on the Web at www.pgworks.com.

PHILADELPHIA GAS WORKS
(A Component Unit of the City of Philadelphia)

Balance Sheets

August 31, 2016 and 2015

(Thousands of U.S. dollars)

Assets		**2016**	**2015**
Current assets:			
Cash and cash equivalents	$	91,743	114,327
Accounts receivable (net of provision for uncollectible accounts of $74,286 and $102,029 for 2016 and 2015, respectively)		73,563	86,853
Gas inventories, materials, and supplies		47,891	50,908
Workers' compensation escrow fund		2,603	2,597
Health insurance escrow fund		—	3,223
Other current assets		31,017	13,596
Total current assets		246,817	271,504
Noncurrent assets:			
Utility plant, at original cost:			
In service		2,178,632	2,093,112
Under construction		73,531	64,254
Total		2,252,163	2,157,366
Less accumulated depreciation		967,353	924,996
Utility plant, net		1,284,810	1,232,370
Unamortized bond insurance costs		512	3,473
Sinking fund, revenue bonds		86,652	90,141
Deferred environmental		28,425	29,609
Other noncurrent assets		6,364	8,037
Total noncurrent assets		1,406,763	1,363,630
Total assets		1,653,580	1,635,134
Deferred Outflows of Resources			
Accumulated fair value of hedging derivatives		14,763	20,948
Unamortized losses on reacquired debt		57,175	37,471
Deferred outflows related to pension		88,043	78,128
Total deferred outflows of resources		159,981	136,547
Total assets and deferred outflows of resources	$	1,813,561	1,771,681

(Continued)

PHILADELPHIA GAS WORKS
(A Component Unit of the City of Philadelphia)

Balance Sheets

August 31, 2016 and 2015

(Thousands of U.S. dollars)

Liabilities		**2016**	**2015**
Current liabilities:			
Current portion of revenue bonds	$	44,803	43,030
Notes payable		71,000	30,000
Accounts payable		55,870	56,027
Customer deposits		3,308	2,858
Other current liabilities		13,791	14,091
Accrued accounts:			
Interest, taxes, and wages		6,417	10,051
Distribution to the City		3,000	3,000
Total current liabilities		198,189	159,057
Noncurrent liabilities:			
Long-term revenue bonds		881,620	914,719
Other noncurrent liabilities		149,621	168,399
Net pension liability		296,093	239,869
Total noncurrent liabilities		1,327,334	1,322,987
Total liabilities		1,525,523	1,482,044
Deferred Inflows of Resources			
Deferred inflows related to pension		—	11,653
Total liabilities and deferred inflows of resources		1,525,523	1,493,697
Net Position			
Net investment in capital assets		415,561	274,621
Restricted (debt service)		89,255	95,962
Unrestricted		(216,778)	(92,599)
Total net position		288,038	277,984
Total liabilities, deferred inflows of resources, and net position	$	1,813,561	1,771,681

See accompanying notes to basic financial statements.

PHILADELPHIA GAS WORKS
(A Component Unit of the City of Philadelphia)

Statements of Revenues and Expenses and Changes in Net Position

Years ended August 31, 2016 and 2015

(Thousands of U.S. dollars)

		2016	2015
Operating revenues:			
Gas revenues:			
Nonheating	$	21,873	30,753
Gas transport service		41,008	39,588
Heating		509,467	605,686
Total gas revenues		572,348	676,027
Appliance and other revenues		7,961	8,727
Other operating revenues		10,928	12,493
Total operating revenues		591,237	697,247
Operating expenses:			
Natural gas		146,524	252,169
Gas processing		17,948	18,180
Field services		36,277	36,874
Distribution		37,173	38,629
Collection and account management		10,913	11,192
Provision for uncollectible accounts		27,133	34,833
Customer services		12,432	12,262
Marketing		3,671	6,956
Administrative and general		99,652	93,347
Pensions		62,336	43,748
Other postemployment benefits		9,929	6,726
Taxes		7,521	7,823
Total operating expenses before depreciation		471,509	562,739
Depreciation		51,679	49,371
Less depreciation expense included in operating expenses above		6,231	5,584
Net depreciation		45,448	43,787
Total operating expenses		516,957	606,526
Operating income		74,280	90,721
Interest and other income		1,393	3,784
Income before interest expense		75,673	94,505
Interest expense:			
Long-term debt		40,296	45,756
Other		8,443	11,548
Allowance for funds used during construction		(1,120)	(781)
Total interest expense		47,619	56,523
Distribution to the City of Philadelphia		(18,000)	(18,000)
Excess of revenues over expenses		10,054	19,982
Net position, beginning of year		277,984	258,002
Net position, end of year	$	288,038	277,984

See accompanying notes to basic financial statements.

PHILADELPHIA GAS WORKS
(A Component Unit of the City of Philadelphia)

Statements of Cash Flows

Years ended August 31, 2016 and 2015

(Thousands of U.S. dollars)

		2016	2015
Cash flows from operating activities:			
Receipts from customers	$	570,700	700,500
Payments to suppliers		(328,006)	(430,729)
Payments to employees		(112,068)	(113,275)
Claims paid		(3,041)	(2,042)
Other receipts		12,300	17,700
Net cash provided by operating activities		139,885	172,154
Cash flows from noncapital financing activities:			
Income from nonutility operations		3,844	3,177
Interest and fees		710	1,011
Distribution to the City of Philadelphia		(18,000)	(18,000)
Net cash used in noncapital financing activities		(13,446)	(13,812)
Cash flows from investment activities			
Sinking fund reserve deposits		—	(16,644)
Sinking fund reserve withdrawals		4,133	33,042
Interest income from short-term investments		117	96
Interest income on sinking fund		655	511
Net cash provided by investment activities		4,905	17,005
Cash flows from capital and related financing activities:			
Issuance of commercial paper		41,000	30,000
Redemption, refunding, or defeasance of long-term debt		(373,632)	(319,687)
Proceeds from long-term debt issued		369,613	294,267
Long-term debt issuance costs		(16,274)	(2,467)
Purchases of capital assets		(97,888)	(82,606)
Principal paid on long-term debt		(38,215)	(50,975)
Interest paid on long-term debt		(39,652)	(46,067)
Drawdowns on restricted capital expenditures		—	10,000
Allowance for funds used during construction		1,120	781
Net cash used in capital and related financing activities		(153,928)	(166,754)
Net (decrease) increase in cash and cash equivalents		(22,584)	8,593
Cash and cash equivalents at beginning of year		114,327	105,734
Cash and cash equivalents at end of year	$	91,743	114,327
Reconciliation of operating income to net cash provided by operating activities:			
Operating income	$	74,280	90,721
Adjustments to reconcile operating income to net cash provided by operating activities:			
Depreciation and amortization expense		45,448	43,787
Provision for uncollectible accounts		27,133	34,833
Change in assets and liabilities:			
Receivables, net		(13,849)	(20,229)
Gas inventories, materials, and supplies		3,017	19,081
Other current assets		(17,422)	5,626
Other assets		2,857	(119)
Accounts payable		(157)	(2,861)
Customer deposits		450	614
Other current liabilities		(299)	(5,230)
Accrued accounts		(3,634)	(4,595)
Other liabilities		22,061	10,526
Net cash provided by operating activities	$	139,885	172,154

See accompanying notes to basic financial statements.

(1) Summary of Significant Accounting Policies

The accounting methods employed by the Philadelphia Gas Works (the Company or PGW) are in accordance with U.S. generally accepted accounting principles (U.S. GAAP) and are in conformity with City of Philadelphia (the City) reporting requirements.

As described in note 2, the Company is accounted for as a component unit of the City, and consequently follows accounting principles promulgated by the Governmental Accounting Standards Board (GASB) as they apply to business type activities. Under the Regulated Operations guidance within GASB Statement No. 62, *Codification of Accounting and Financial Reporting Guidance Contained in Pre-November 30, 1989 FASB and AICPA Pronouncements* (GASB 62), assets or liabilities may be created by certain actions of regulatory bodies.

The principal accounting policies within this framework are described as follows:

(a) Regulation

Prior to July 1, 2000, the Company was under the regulatory jurisdiction of the Philadelphia Gas Commission (PGC). The PGC had the authority to set the Company's rates and tariffs. The PGC also approved the Company's annual Operating Budget and reviewed the Company's Capital Budget prior to approval by the City Council of the City (City Council).

Effective July 1, 2000, and pursuant to the passage of the Pennsylvania Natural Gas Choice and Competition Act (the Act), the Company came under the regulatory jurisdiction of the Pennsylvania Public Utility Commission (PUC). Under the PUC's jurisdiction, the Company filed a restructuring plan on July 1, 2002, which among other things, provided for an unbundled tariff permitting customer choice of the commodity supplier by September 1, 2003. Under the Act, the PUC is required to follow the "same ratemaking methodology and requirements" that were previously applicable to the PGC when determining the Company's revenue requirements and approving overall rates and charges. The PGC continues to approve the Company's Operating Budget and review its Capital Budget. The Company's Capital Budget must be approved by City Council.

The Company, as of September 1, 2003, is operating under its Restructuring Compliance Tariff. The Restructuring Compliance Tariff Rates are designed to maintain revenue neutrality and the Tariff Rules and Regulations are designed to comport with the Pennsylvania Public Utility Code.

(b) Operating Budget

On May 27, 2016, PGW filed a proposed Fiscal Year (FY) 2017 Operating Budget with the PGC. The PGC Hearing Examiners conducted Informal Discovery (ID) sessions in June and July 2016. On July 25, 2016, a public hearing was convened by the Hearing Examiners to address PGW's Operating Budget. On August 18, 2016, a recommended decision was rendered by the Hearing Examiners, which proposed adjustments to the Operating Budget as filed. On September 20, 2016, the PGC approved, with adjustments, PGW's FY 2017 Operating Budget. PGW filed a Compliance Budget with the PGC on October 4, 2016.

On May 22, 2015, PGW filed a proposed FY 2016 Operating Budget. After appropriate discovery and hearings, the PGC approved the FY 2016 Operating Budget on October 20, 2015.

On May 23, 2014, PGW filed a proposed FY 2015 Operating Budget. After appropriate discovery and hearings, the PGC approved the FY 2015 Operating Budget on September 23, 2014.

(c) Capital Budget

On January 4, 2016, PGW filed with the PGC its proposed FY 2017 Capital Budget in the amount of $139.4 million. After a due diligence review and related ID process in January and February 2016, a public hearing was held on February 23, 2016. The PGC's review culminated in deliberations taken at a public meeting held on April 26, 2016 whereby the PGC endorsed a FY 2017 Capital Budget in an amount not to exceed $118.3 million. The endorsed budget was approved by City Council on June 16, 2016 and signed by the Mayor on June 28, 2016.

On January 2, 2015, PGW filed with the PGC its proposed FY 2016 Capital Budget in the amount of $181.6 million. The PGC staff initiated its customary due diligence review and related ID process on January 23, 2015 and February 9, 2015. A public hearing was then held on February 24, 2015. The PGC's review culminated in deliberations taken at a public meeting held on April 27, 2015 whereby the PGC endorsed a FY 2016 Capital Budget in an amount not to exceed $115.0 million.

On March 20, 2015, PGW filed a request to amend the proposed FY 2016 Capital Budget and related Forecast in an amount of $8.2 million to increase spending for its Cast Iron Main Replacement (CIMR) Program. The PGC staff established an expedited review schedule, including an ID meeting held on April 1, 2015. The PGC's review concluded with deliberations taken at a public meeting held on May 11, 2015 whereby the PGC endorsed an amended FY 2016 Capital Budget in an amount not to exceed $123.1 million. The endorsed budget was approved by City Council and the Bill was signed by the Mayor on June 18, 2015.

On January 2, 2014, PGW filed with the PGC its proposed FY 2015 Capital Budget in the amount of $89.2 million. The PGC's review culminated in deliberations taken at a public meeting held on April 8, 2014 whereby the PGC endorsed a FY 2015 Capital Budget in an amount not to exceed $89.5 million. The endorsed budget was approved by City Council on June 12, 2014. The Bill was signed by the Mayor on June 19, 2014.

(d) Base Rates

In FY 2015, the PUC approved the Company's Gas Cost Rate (GCR) settlement petition, which included a provision allowing for the continued recovery of PGW's Other Postemployment Benefits (OPEB) Rider. The recovery shall remain at $16.0 million annually. PGW continues to deposit this $16.0 million plus an additional $2.5 million annual contribution into the OPEB Trust for an annual total of $18.5 million. Additionally, PGW's petition to continue the Demand Side Management Program was decided by the PUC in November 2016 and was revised and approved.

On December 18, 2009, PGW submitted a base rate filing with the PUC (1) to maintain the $60.0 million base rate increase that the PUC granted in 2008 and (2) to fund PGW's OPEB liability in the amount of $42.5 million. PGW also moved to consolidate the Company's Demand Side

Management Program, an energy efficiency and conservation plan, into the base rate filing. On May 19, 2010, PGW, along with all active parties to the proceeding, submitted a Petition for Proposed Settlement of the proceeding (the Settlement) and the PUC approved the Settlement on July 29, 2010. Under the Settlement, PGW was permitted to maintain virtually all of the extraordinary base rate relief, received an incremental rate increase of $16.0 million annually, and was required to fund $18.5 million of the OPEB liability in each of the fiscal years 2011 through 2015. The new rates were effective September 1, 2010. The Settlement also permitted the implementation of the Demand Side Management Program.

(e) Weather Normalization Adjustment Clause

The Weather Normalization Adjustment (WNA) Clause was approved by PUC Order dated August 8, 2002. The purpose of the WNA Clause is to neutralize the impact of weather on the Company's revenues. This allows the Company to achieve the recovery of appropriate costs as authorized by the PUC. The WNA Clause results in neither a rate increase nor a rate decrease, but acts as a billing adjustment. The main benefits of the WNA Clause are the stabilization of cash flow and the reduction of the need for short-term borrowing from year to year. The WNA Clause is applied to customer invoices rendered during the period of October 1 through May 31 of each year for each billing cycle. The adjustment for the year ended August 31, 2016 was an increase in billings of $41.5 million. The WNA Clause resulted in a decrease in billings of $10.7 million for the year ended August 31, 2015.

(f) Gas Cost Rate

The Company's single greatest operating expense is the cost of natural gas. The rate charged to the Company's customers to recover these costs is called the GCR. The GCR reflects the increases or decreases in natural gas costs and other costs. This GCR mechanism provides the flexibility to rapidly reflect current conditions without the time delay inherent in full base rate alteration. The intent is to achieve an annual balance between the costs incurred for fuel and their pass through to customers.

At the end of the fiscal year, costs recovered through the GCR and surcharges adjustment are compared to the actual cost of fuel and other specific costs. Customers are then credited or charged for the over recovery or under recovery of costs. The GCR and surcharges charge/credit may be updated quarterly or in the subsequent fiscal year to reflect the under recovery or over recovery. Changes in the GCR impact the reported amounts of gas revenues but do not affect operating income or net income because they are passed through to the customer without markup. At August 31, 2016, approximately $20.7 million was recorded in other current assets for the GCR and surcharges under recovery. At August 31, 2015, approximately $2.5 million was recorded in other current assets for the GCR and surcharges under recovery. The GCR comprises the purchased gas costs plus the gas adjustment charge minus the interruptible revenue credit.

GCR Effective Dates and Rates

(Amounts in U.S. dollars)

Effective date		GCR rate per Mcf*	Change
December 1, 2016	$	4.1577	(0.0449)
September 1, 2016		4.2026	0.9847
June 1, 2016		3.2179	(0.2767)
March 1, 2016		3.4946	(0.1988)
December 1, 2015		3.6934	(0.3790)
September 1, 2015		4.0724	(0.0997)
June 1, 2015		4.1721	(0.5338)
March 1, 2015		4.7059	(1.2917)
December 1, 2014		5.9976	0.1306
September 1, 2014		5.8670	—

* Mcf – thousand cubic feet

(g) Utility Plant

Utility plant is stated at original cost. The cost of additions, replacements, and betterments of units of property is capitalized and included in the utility plant accounts. The cost of property sold or retired is removed from the utility plant accounts and charged to accumulated depreciation. Normal repairs, maintenance, the cost of minor property items, and expenses associated with retirements are charged to operating expenses as incurred.

In a previous rate order, the PGC disallowed the accrual of the net negative salvage component in depreciation. Cost of removal in the amounts of $3.8 million and $2.9 million was charged to expense as incurred in FY 2016 and FY 2015, respectively, and is included in depreciation expense in the statements of revenues and expenses and changes in net position. Depreciation is calculated on an asset-by-asset basis on the estimated useful lives of plant and equipment on a straight-line method. The composite rate for FY 2016 and FY 2015 was 2.2%. The composite rates are supported by a depreciation study of utility plant as of August 2014. The effective composite depreciation rates, as a percentage of cost, for FY 2016 were as follows:

Production plant	1.95%
Transmission, distribution, and storage	2.02
General plant	2.99

The most recent depreciation study was completed in FY 2015 for the plant activity subsequent to the last depreciation study and through FY 2014.

Allowance for Funds Used During Construction (AFUDC) is an estimate of the cost of funds used for construction purposes. The AFUDC, as calculated on borrowed funds, reduces interest expense. The AFUDC rate applied to construction work in progress was 4.84% and 4.87% in FY 2016 and FY 2015, respectively.

The following is a summary of utility plant activity for the fiscal years ended August 31, 2016 and 2015 (thousands of U.S. dollars):

	August 31, 2016			
	Beginning balance	**Additions and transfers**	**Retirements and transfers**	**Ending balance**
Land	$ 5,595	—	—	5,595
Distribution and collection systems	1,599,184	70,226	(5,903)	1,663,507
Buildings and equipment	488,333	21,197	—	509,530
Total utility plant, at historical cost	2,093,112	91,423	(5,903)	2,178,632
Under construction	64,254	100,698	(91,421)	73,531
Less accumulated depreciation for:				
Distribution and collection systems	(761,495)	(34,456) *	4,855	(791,096)
Buildings and equipment	(163,501)	(11,917) *	(839)	(176,257)
Utility plant, net	$ 1,232,370	145,748	(93,308)	1,284,810

* Cost of removal of approximately $3.8 million was charged to expense as incurred in FY 2016 and is not included in accumulated depreciation.

	August 31, 2015			
	Beginning balance	Additions and transfers	Retirements and transfers	Ending balance
Land	$ 5,595	—	—	5,595
Distribution and collection systems	1,539,224	63,593	(3,633)	1,599,184
Buildings and equipment	473,415	15,327	(409)	488,333
Total utility plant, at historical cost	2,018,234	78,920	(4,042)	2,093,112
Under construction	57,206	86,154	(79,106)	64,254
Less accumulated depreciation for:				
Distribution and collection systems	(730,048)	(33,378) *	1,931	(761,495)
Buildings and equipment	(151,840)	(11,554) *	(107)	(163,501)
Utility plant, net	$ 1,193,552	120,142	(81,324)	1,232,370

* Cost of removal of approximately $2.9 million was charged to expense as incurred in FY 2015 and is not included in accumulated depreciation.

(h) Revenue Recognition

The Company is primarily a natural gas distribution company. Operating revenues include revenues from the sale of natural gas to residential, commercial, and industrial heating and nonheating customers. The Company also provides natural gas transportation service. Appliance and other revenues primarily consist of revenue from the Company's parts and labor repair program. Revenue from this program is recognized on a monthly basis for the life of the individual parts and labor plans. Additional revenue is generated from collection fees, reconnection charges, and bulk liquefied natural gas sales contracts. Other operating revenues primarily consist of finance charges assessed on delinquent accounts.

In early 2012, Act 11 was enacted by the Pennsylvania Legislature, which permitted public utilities to file a request with the PUC for the implementation of a Distribution System Improvement Charge (DSIC). A DSIC permits natural gas distribution companies to recover the costs related to main and service replacement not already recovered in base rates. This legislation provides utility companies with a supplemental recovery mechanism for costs related to incremental/accelerated distribution system repair, improvement, and replacement. Act 11 permits gas utilities to recover 5.0% of their nongas revenues via the recovery mechanism and permits greater percentage increases if the PUC approves. The Company started billing customers a DSIC surcharge as of July 1, 2013. In FY 2015, the Company billed customers $14.0 million for the DSIC surcharge. In FY 2016, the Company billed customers $22.6 million for the DSIC surcharge. The DSIC surcharge is fully reconcilable on a calendar-year basis and at the fiscal year-end; the over billed or under billed amount is recorded as an adjustment to revenue.

The Company bills customers for the cost of natural gas and the related costs incurred through the processing, distribution, and delivery of natural gas to residential, commercial, and industrial heating and nonheating customers.

Revenues include amounts related to gas that has been used by customers but has not yet been billed. Revenues are recognized as gas is distributed. Estimated revenues from gas distributed and unbilled, less estimated uncollectible amounts are accrued and included in operating revenues and were $3.4 million and $5.2 million for the years ended August 31, 2016 and 2015, respectively.

(i) Operating Expenses

The Company recognizes costs incurred as part of the Company's regular business activities on the statements of revenues and expenses and changes in net position as operating expenses. These costs include distribution, marketing, gas processing, and other similar costs.

Costs incurred that do not involve normal business operations are recognized as nonoperating expenses.

(j) Provision for Uncollectible Accounts

The Company estimates its accumulated provision for uncollectible accounts based on a financial analysis and a collectibility study performed as of the fiscal year-end. The methodology used in performing the collectibility study has been reviewed by the PGC. For FY 2016 and FY 2015, management has provided an accumulated provision for uncollectible accounts in excess of the collectibility study results based on its analysis of historical aging data. The actual results of the Company's collection efforts could differ significantly from the Company's estimate.

Due to the seasonal nature of the business, the Company carries credit balances in accounts receivable primarily as a result of prepayment by budget customers. Credit balances of $17.1 million and $16.5 million in FY 2016 and FY 2015, respectively, have been reclassified to accounts payable.

(k) Gas Inventories, Materials, and Supplies

Gas inventories, materials, and supplies, consisting primarily of fuel stock, gas stored to meet peak demand requirements, and spare parts, are stated at average cost at August 31, 2016 and 2015, as follows (thousands of U.S. dollars):

		2016	2015
Gas inventory	$	38,556	40,791
Material and supplies		9,335	10,117
Total	$	47,891	50,908

(l) Unamortized Bond Insurance Costs, Debt Discount, and Premium

Discounts or premiums and bond insurance costs arising from the sale of revenue bonds are amortized using the interest method over the term of the related bond issue. Other costs of bond issuance are expensed as incurred.

(m) Unamortized Losses on Reacquired Debt

Losses on reacquired debt are recorded as deferred outflows of resources and amortized, using the interest method, to interest expense over the shorter of the life of the refunding bond issue or the remaining original amortization period.

(n) Pensions and Postemployment Benefits

As described in note 10, the City sponsors a single-employer defined-benefit pension plan, the Philadelphia Gas Works Pension Plan (the Pension Plan) to provide pension benefits for certain current and former PGW employees. In accordance with GASB Statement No. 68, *Accounting and Financial Reporting for Pensions – an amendment of GASB 27* (GASB 68), for purposes of measuring the net pension liability, deferred outflows of resources and deferred inflows of resources related to pensions, and pension expense, information about the fiduciary net position of the Pension Plan and additions to/deductions from the Pension Plan's fiduciary net position are determined on the same basis as they are reported by the Pension Plan. For this purpose, benefit payments (including refunds of employee contributions) are recognized when due and payable in accordance with benefit terms. Investments are reported at fair value. With the exception of deferred outflows related to employer contributions made after the measurement date, deferred inflows and outflows related to pensions are amortized over a closed five-year period or the average remaining service life of employees in the pension plan. Deferred outflows of resources related to employer contributions made after the measurement date will be recognized as a reduction of the net pension liability in the next fiscal year.

As described in note 11, PGW sponsors a single-employer defined-benefit healthcare plan that provides postemployment healthcare and life insurance benefits to substantially all current and former PGW employees. The change in the net OPEB obligation and OPEB expense are recorded based on the difference between the annual actuarially determined OPEB cost (AOC) and the Company's contributions.

(o) Fair Value Measurements

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the financial statement measurement date. The fair value hierarchy categorizes the inputs to valuation techniques used to measure fair value into three levels as follows:

- Level 1 – quoted prices for identical assets or liabilities in active markets that a government can access at the measurement date.
- Level 2 – quoted prices other than those included within Level 1 and other inputs that are observable for an asset or liability, either directly or indirectly.

- Level 3 – pricing inputs are unobservable for the asset or liability and include situations where there is little, if any, market activity or involvement.

The fair value hierarchy gives the highest priority to Level 1 inputs and the lowest priority to Level 3. When the fair value of an asset or a liability is measured using inputs from more than one level of the fair value hierarchy, the measurement is considered to be based on the lowest priority level that is significant to the entire measurement.

The categorization of a financial instrument within the hierarchy is based upon pricing transparency and is not necessarily an indication of the Company's perceived risk of that instrument.

The following is a description of the valuation methodologies used for investments measured at fair value:

- U.S. government obligations – The fair value of government obligations are based on institutional bond quotes and evaluations based on various market and industry inputs.
- U.S. government agencies and instrumentalities – The fair value of government agencies and instrumentalities are based on institutional bond quotes and evaluations based on various market and industry inputs.
- Corporate obligations – The fair value of corporate bonds are based on institutional bond quotes and evaluations based on various market and industry inputs.
- Foreign issues – The fair value of corporate bonds are based on institutional bond quotes and evaluations based on various market and industry inputs.

(p) Cash and Cash Equivalents

For the purpose of reporting cash and cash equivalents, all highly liquid investments with original maturities of three months or less are considered cash equivalents, except those held for long-term purposes in the Sinking Fund and Workers' Compensation Escrow Fund, and Health Insurance Escrow Fund as described in note 3.

(q) Reserve for Injuries and Damages

The Company is principally insured through insurance carriers. However, the Company is required to cover settlement of claims, which are excluded under the provisions of such insurance policies. An estimated liability has been established, in accordance with PGC regulations, for settlements to be paid by the Company in the next fiscal year.

Estimated losses from claims for occurrences not covered by insurance, which will not be paid in the next fiscal year, have been accrued. Such liabilities have been established based upon Company history and consultation with counsel. Such expenses are expected to be recovered through future rates. Reductions to the reserve are made as claims are settled.

(Continued)

(r) Segment Information

All of the Company's assets and operations are employed in only one segment, local transportation, and distribution of natural gas in the City.

(s) Estimates

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities 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. Significant estimates in the Company's financial statements include the allowance for doubtful accounts, the fair value of interest rate swap agreements and the valuation of pension and OPEB liabilities.

(t) Pollution Remediation

The Company estimates its pollution remediation obligations using the effective cash flow method, in which measurement is based on the outlays expected to be incurred as a sum of probability-weighted amounts in a range of possible estimated amounts. The Company's liability is based on a combination of internal and external cost estimates for the specific remediation activities agreed to as part of Pennsylvania Act 2, *Land Recycling and Environmental Remediation Standards Act of 1995* and Pennsylvania Act 32, *Storage Tank and Spill Prevention Act of 1989*.

Estimated site liabilities are determined based upon existing remediation laws and technologies, specific site consultants' engineering studies, or by extrapolating experience with environmental issues at comparable sites. Estimates may change substantially as additional information becomes available regarding the level of contamination at specific sites, available remediation methods, and changes in price, technology, proposed land use, or applicable regulations.

(u) Reclassifications

Certain prior-year amounts have been reclassified for comparative purposes.

(v) New Accounting Pronouncements

The Company adopted GASB Statement No. 72, *Fair Value Measurement and Application* (GASB 72). GASB 72 addresses accounting and financial reporting issues related to fair value measurements. The definition of fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. This statement provides guidance for determining a fair value measurement for financial reporting purposes. This statement also provides guidance for applying fair value to certain investments and disclosures related to all fair value measurements. GASB 72 has been applied retrospectively to the investment disclosures in notes 3 and 10 and did not impact valuation of investments, net position, or changes in net position.

(w) Accounting Standards with Future Effective Dates

In June 2015, GASB issued Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other than Pensions* (GASB 75). The statement establishes standards, similar to those established for defined-benefit pension plans in GASB 68, for recognizing and measuring defined-benefit OPEB liabilities, deferred outflows or resources, deferred inflows of resources, and expenses, and identifies the methods and assumptions that are required to be used to project benefit payments, discount projected benefit payments to their actuarial present value, and attribute that present value to periods of employee service. Note disclosure and required supplementary information are also addressed. GASB 75 is effective for fiscal years beginning after June 15, 2017. The Company is currently evaluating the impact of GASB 75 on its financial statements.

(2) Ownership and Management and Related-Party Transactions and Balances

The Company is accounted for as a component unit of the City. As of January 1, 1973, under the terms of a two-year agreement automatically extended for successive two-year periods unless canceled upon 90 days' notice by the City, the Company is being managed by the Philadelphia Facilities Management Corporation (PFMC). The agreement, as amended, provides for reimbursement to PFMC of actual costs incurred in managing the Company, not to exceed a total of the prior fiscal year's maximum amount adjusted to reflect the percentage change in the Consumer Price Index for All Urban Consumers (CPI-U) All Items Index, Philadelphia, Pennsylvania, United States Department of Labor, Bureau of Labor Statistics, as most recently published and available to the Director of Finance of the City on March 1 of each such fiscal year. In FY 2016 and FY 2015, the applicable maximum amount was calculated to be $1.2 million. The agreement requires the Company to make annual payments of $18.0 million to the City. In FY 2016 and FY 2015, the Company made the annual payment of $18.0 million to the City.

The Company engages in various other transactions with the City. The Company provides gas service to the City. Operating revenues include $5.4 million and $7.7 million in FY 2016 and FY 2015, respectively, relating to sales to the City. There were no net amounts receivable from the City at August 31, 2016 and 2015. Water and sewer services and licenses are purchased from the City. Such purchases totaled $1.4 million and $1.2 million in FY 2016 and FY 2015, respectively.

Certain activities of the PGC are paid for by the Company. Such payments totaled $0.8 million and $0.9 million in FY 2016 and FY 2015, respectively.

(3) Cash and Cash Equivalents, and Investments

(a) Cash, Cash Equivalents, and Short-Term Investments

Cash and cash equivalents consist primarily of bank deposits, money market accounts, and investments purchased through various brokerage relationships. Bank balances of such deposits, accounts, and investments at August 31, 2016 and 2015 were $91.4 million and $114.0 million, respectively. Book balances of such deposits and accounts at August 31, 2016 and 2015 were $91.7 million and $114.3 million, respectively. Federal depository insurance on these balances at August 31, 2016 and 2015 was $0.8 million. The remaining balances are not insured. Investments are primarily in money market accounts, U.S. Treasury bills, U.S. government agencies and instrumentalities, and corporate obligations (short-term investments).

The highest balance of short-term investments during FY 2016 and FY 2015 was $136.6 million and $161.5 million, respectively. Short-term investments with a carrying amount (at fair value) of $84.4 million and $112.2 million at August 31, 2016 and 2015, respectively, are included in the balances presented above.

(b) Sinking Fund Reserve, Workers' Compensation Escrow Fund, and Health Insurance Escrow Fund

The investments in the Company's Sinking Fund Reserve, Workers' Compensation Escrow Fund, and Health Insurance Escrow Fund consist primarily of U.S. Treasury and government agency obligations, corporate obligations, and money market accounts. These investments are maintained by the City or in the Company's name by its agent. Investments are recorded at fair value except for certain money market funds recorded at amortized cost. The adjustment to market value for the Sinking Fund Reserve resulted in a loss of less than $0.1 million in FY 2016 and a loss of $0.2 million in FY 2015.

The Sinking Fund Reserve is required by bond ordinance to hold an amount equal to the greatest amount of debt service required by bonds secured by the Sinking Fund Reserve in any fiscal year.

Pursuant to the Pennsylvania Department of Labor and Industry Bureau of Workers' Compensation Self-Insurance policy, the Company has established and maintained a restricted trust account. As of August 31, 2016 and 2015, the trust account balances were $2.6 million.

PGW is self-insured for the healthcare for active employees and retirees under the age of 65. Retirees over the age of 65 are insured on an experience-rated basis. The self-insured model historically required the Company to establish and maintain a restricted escrow account.

The balance in the Health Insurance Escrow Fund was $3.2 million as of August 31, 2015.

The Health Insurance Escrow Fund was closed in September 2015. PGW negotiated the closing of this account by providing an advance deposit of $0.8 million to the healthcare provider.

The following is a schedule that details the Company's investments in the Sinking Fund Reserve (thousands of U.S. dollars):

	August 31, 2016			
Investment type	**Fair value**	**Weighted average maturity (years)**	**Credit rating**	**Rating agency**
U.S. government obligations:				
U.S. Treasury notes	$ 10,618	4.3267	AAA/NA	Moody's/S&P
U.S. government agencies and instrumentalities:				
Federal National Mortgage Association medium term notes	4,013	0.5208	AAA/AA+	Moody's/S&P
Federal Home Loan Mortgage Corporation medium term notes	25,382	11.1469	AAA/AA+	Moody's/S&P
Federal Home Loan Bank bonds	10,003	1.4988	AAA/AA+	Moody's/S&P
Federal Farm Credit Bank bonds	8,724	1.1200	AAA/AA+	Moody's/S&P
Tennessee Valley Authority	2,471	6.0698	AAA/AA+	Moody's/S&P
Total U.S. government agencies and instrumentalities	50,593			
Total fair value of U.S. government securities	61,211			
Corporate obligations:				
Chevron Corporation	2,408	1.5968	AA+/A1	Moody's/S&P
Total corporate obligations	2,408			
Foreign issues:				
Australia & New Zealand Banking Group, Ltd., New York	2,266	2.0460	A+/AA2	Moody's/S&P
Westpac Banking Corporation	2,007	2.1244	AA-/AA2	Moody's/S&P
Total foreign issues	4,273			

PHILADELPHIA GAS WORKS
(A Component Unit of the City of Philadelphia)
Notes to Basic Financial Statements
August 31, 2016 and 2015

Investment type		August 31, 2016			
		Fair value	Weighted average maturity (years)	Credit rating	Rating agency
Cash and cash equivalents:					
Bank of Montreal commercial paper	$	1,988	—	*	*
Bank of Tokyo Mitsubishi commercial paper		1,994	—	*	*
BNP Paribas Finance Inc. commercial paper		1,992	—	*	*
Canadian Imperial Hids commercial paper		1,989	—	*	*
Cooperatieve Centrale commercial paper		1,990	—	*	*
Credit Agricole Crpin commercial paper		1,990	—	*	*
ING US Funding LLC commercial paper		1,990	—	*	*
JP Morgan Securities commercial paper		1,994	—	*	*
Toyota Motor Credit Company commercial paper		1,995	—	*	*
Money market:					
First American Government Obligations Fund Class Z		626	—	*	*
Total cash and cash equivalents		18,548	—		
Other		212	—	*	*
Total fair value of investments, including cash deposits	$	86,652			
Portfolio weighted modified duration					

* The credit of this investment is unrated.

	August 31, 2015			
Investment type	**Fair value**	**Weighted average maturity (years)**	**Credit rating**	**Rating agency**
U.S. government obligations:				
U.S. Treasury notes	$ 21,039	2.9063	AAA/NA	Moody's/S&P
U.S. government agencies and instrumentalities:				
Federal National Mortgage Association medium term notes	675	0.4844	AAA/AA+	Moody's/S&P
Federal Home Loan Mortgage Corporation medium term notes	13,168	0.5950	AAA/AA+	Moody's/S&P
Federal Home Loan Bank bonds	16,497	1.2875	AAA/AA+	Moody's/S&P
Federal Farm Credit Bank bonds	5,025	0.0138	AAA/AA+	Moody's/S&P
Total U.S. government agencies and instrumentalities	35,365			
Total fair value of U.S. government securities	56,404			
Corporate obligations:				
General Electric Capital Corporation	2,010	—	AA+/A1	Moody's/S&P
Total corporate obligations	2,010			
Foreign issues:				
Bank of Nova Scotia	2,051	—	A+/AA2	Moody's/S&P
Westpac Banking Corporation	981	—	AA-/AA2	Moody's/S&P
Total foreign issues	3,032			

(Continued)

Investment type		Fair value	Weighted average maturity (years)	Credit rating	Rating agency
		August 31, 2015			
Cash and cash equivalents:					
BNP Paribas Finance Inc. commercial paper	$	2,000	—	*	*
Toyota Motor Credit Corporation commercial paper		1,997	—	*	*
HSBC Americas Inc. commercial paper		1,994	—	*	*
JP Morgan Securities commercial paper		1,800	—	*	*
Money market:					
First American Government Obligations Fund Class Z		20,795	—	*	*
Total cash and cash equivalents		28,586	—		
Other		109	—	*	*
Total fair value of investments, including cash deposits	$	90,141			
Portfolio weighted modified duration					

* The credit of this investment is unrated.

The following is a schedule that details the Company's investments in the Workers' Compensation Escrow Fund (thousands of U.S. dollars):

	August 31, 2016			
Investment type	**Fair value**	**Weighted average maturity (years)**	**Credit rating**	**Rating agency**
Money market:				
Fidelity Governmental Fund	$ 2,603	—	*	*
Total fair value of investments, including cash deposits	$ 2,603			

* The credit of this investment is unrated.

	August 31, 2015			
Investment type	**Fair value**	**Weighted average maturity (years)**	**Credit rating**	**Rating agency**
Money market:				
Fidelity Governmental Fund	$ 2,597	—	*	*
Total fair value of investments, including cash deposits	$ 2,597			

* The credit of this investment is unrated.

The following is a schedule that details the Company's investments in the Health Insurance Escrow Fund (thousands of U.S. dollars):

	August 31, 2015			
Investment type	**Fair value**	**Weighted average maturity (years)**	**Credit rating**	**Rating agency**
Money market:				
Fidelity Governmental Fund	$ 3,223	—	*	*
Total fair value of investments, including cash deposits	$ 3,223			

* The credit of this investment is unrated.

The following is a schedule that details the fair value hierarchy of the Company's investments in the Sinking Fund Reserve (thousands of U.S. dollars):

	August 31, 2016			
Investment type	**Total Fair value**	**Level 1**	**Level 2**	**Level 3**
U.S. government obligations:				
U.S. Treasury notes	$ 10,618	10,618	—	—
U.S. government agencies and instrumentalities:				
Federal National Mortgage Association medium term notes	4,013	—	4,013	—
Federal Home Loan Mortgage Corporation medium term notes	25,382	—	25,382	—
Federal Home Loan Bank bonds	10,003	—	10,003	—
Federal Farm Credit Bank bonds	8,724	—	8,724	—
Tennessee Valley Authority	2,471	—	2,471	—
Total U.S. government agencies and instrumentalities	50,593	—	50,593	—
Total fair value of U.S. government securities	61,211	10,618	50,593	—
Corporate obligations:				
Chevron Corporation	2,408	—	2,408	—
Total corporate obligations	2,408	—	2,408	—
Foreign issues:				
Australia & New Zealand Banking Group, Ltd., New York	2,266	—	2,266	—
Westpac Banking Corporation	2,007	—	2,007	—
Total foreign issues	4,273	—	4,273	—

Investment type		Total Fair value (August 31, 2016)	Level 1	Level 2	Level 3
Cash and cash equivalents:					
Bank of Montreal commercial paper	$	1,988	—	1,988	—
Bank of Tokyo Mitsubishi commercial paper		1,994	—	1,994	—
BNP Paribas Finance Inc. commercial paper		1,992	—	1,992	—
Canadian Imperial Hids commercial paper		1,989	—	1,989	—
Cooperatieve Centrale commercial paper		1,990	—	1,990	—
Credit Agricole Crpin commercial paper		1,990	—	1,990	—
ING US Funding LLC commercial paper		1,990	—	1,990	—
JP Morgan Securities commercial paper		1,994	—	1,994	—
Toyota Motor Credit Company commercial paper		1,995	—	1,995	—
Money market:					
First American Government Obligations Fund Class Z		626	626	—	—
Total cash and cash equivalents		18,548	626	17,922	—
Other		212	—	212	—
Total fair value of investments, including cash deposits	$	86,652	11,244	75,408	—

Investment type	Total Fair value (August 31, 2015)	Level 1	Level 2	Level 3
U.S. government obligations:				
U.S. Treasury notes	$ 21,039	21,039	—	—
U.S. government agencies and instrumentalities:				
Federal National Mortgage Association medium term notes	675	—	675	—
Federal Home Loan Mortgage Corporation medium term notes	13,168	—	13,168	—
Federal Home Loan Bank bonds	16,497	—	16,497	—
Federal Farm Credit Bank bonds	5,025	—	5,025	—
Total U.S. government agencies and instrumentalities	35,365	—	35,365	—
Total fair value of U.S. government securities	56,404	21,039	35,365	—
General Electric Capital Corporation	2,010	—	2,010	—
Total corporate obligations	2,010	—	2,010	—
Foreign issues:				
Bank of Nova Scotia	2,051	—	2,051	—
Westpac Banking Corporation	981	—	981	—
Total foreign issues	3,032	—	3,032	—

Investment type	August 31, 2015 Total Fair value	Level 1	Level 2	Level 3
Cash and cash equivalents:				
BNP Paribas Finance Inc. commercial paper	$ 2,000	—	2,000	—
Toyota Motor Credit Corporation commercial paper	1,997	—	1,997	—
HSBC Americas Inc. commercial paper	1,994	—	1,994	—
JP Morgan Securities commercial paper	1,800	—	1,800	—
Money market:				
First American Government Obligations Fund Class Z	20,795	20,795	—	—
Total cash and cash equivalents	28,586	20,795	7,791	—
Other	109	—	109	—
Total fair value of investments, including cash deposits	$ 90,141	41,834	48,307	—

The following is a schedule that details the fair value hierarchy of the Company's investments in the Workers' Compensation Escrow Fund (thousands of U.S. dollars):

Investment type	August 31, 2016 Total Fair value	Level 1	Level 2	Level 3
Money market:				
Fidelity Governmental Fund	$ 2,603	2,603	—	—
Total fair value of investments, including cash deposits	$ 2,603	2,603	—	—

		August 31, 2015		
Investment type	**Total Fair value**	**Level 1**	**Level 2**	**Level 3**
Money market:				
Fidelity Governmental Fund	$ 2,597	2,597	—	—
Total fair value of investments, including cash deposits	$ 2,597	2,597	—	—

The following is a schedule that details the fair value hierarchy of the Company's investments in the Health Insurance Escrow Fund (thousands of U.S. dollars):

		August 31, 2015		
Investment type	**Total Fair value**	**Level 1**	**Level 2**	**Level 3**
Money market:				
Fidelity Governmental Fund	$ 3,223	3,223	—	—
Total fair value of investments, including cash deposits	$ 3,223	3,223	—	—

(c) Interest Rate Risk

It is the policy of the City to diversify its investment portfolios. Portfolio diversification is employed as a way to control risk. Investments shall be diversified as to maturities, and as to kind of investments to minimize the risk of loss, which might result from over concentration of assets in a specific maturity, in a specific kind of a security, or from a specific issuer or industry.

(d) Credit Risk

The City has adopted an investment policy relating to the investments of the Company. Per the investment policy, the Company's allowable investments are as follows:

(1) bonds or notes of the U.S. government;

(2) U.S. Treasury obligations, including separate trading of registered interest and principal securities; receipts indicating an undivided interest in such U.S. Treasury obligations; and stripped coupons held under book entry with the New York Federal Reserve Bank;

(3) obligations of the following U.S. government-sponsored agencies; Government National Mortgage Association, Federal National Mortgage Association, Federal Home Loan Mortgage Corporation, Federal Farm Credit System, Federal Home Loan Bank, Resolution Funding Corporation, and Tennessee Valley Authority;

(4) collateralized banker's acceptances and certificate of deposit denominated in U.S. dollars and issued by a city code authorized depository certificate of deposit that must be secured by acceptable collateral with a total market value equal to 102.0% of the deposit;

(5) commercial paper with a stated maturity of 270 days or less, which is rated P1 by Moody's or A1+ by Standard & Poor's (S&P). The senior long-term debt of the commercial paper issuer, or the entity providing an explicit guarantee, must be rated not lower than A2 by Moody's or A by S&P;

(6) asset-backed commercial paper (ABCP), which does not have a long-term rating, is an allowable investment if it meets the short-term rating requirements but is only allowed up to the ABCP sublimit;

(7) general obligation bonds of corporations rated Aa2 or better by Moody's or AA or better by S&P with a final maturity of two years or less;

(8) collateralized mortgage obligations and pass-through securities directly issued by a federal agency or instrumentality of the United States, the underlying security for which is guaranteed by an agency or instrumentality of the United States and with a final maturity of two years or less, the rating must be no lower than Aa2 by Moody's or AA by S&P;

(9) money market mutual funds, as defined by the Securities and Exchange Commission, such money markets funds must have assets over $15.0 billion, have the highest rating from Moody's, S&P, and Fitch, and contain only government securities;

(10) repurchase agreements that are fully collateralized in bonds or notes of the U.S. government pledged to the City and held in the City's name and deposited at the time the investment is made with an entity or a third party selected and approved by the City the market value of the collateral shall be at least 102.0% of the funds being disbursed; and

(11) obligations of the Commonwealth of Pennsylvania (the Commonwealth) or any municipality or other political subdivision of the Commonwealth with a final maturity of two years or less and a rating of at least AA by Moody's or S&P.

Authorized investments for Sinking Fund Portfolios are dictated by the First Class City Revenue Bond Act of the General Assembly of the Commonwealth of Pennsylvania, approved October 18, 1972. This also includes any investment vehicle permitted for any Commonwealth state agency.

The Company's investment policy provides for the following percentage limitations of authorized investments, valued at market:

	Percent of portfolio allowed	Percent of portfolio per issuer	Percent of outstanding securities per issuer
U.S. government	100	100	N/A
U.S. Treasury	100	100	N/A
U.S. agencies and instrumentalities	100	33	N/A
Banker's acceptances and certificates of deposit	15	3	3
Commercial paper	25	3	3
Corporate bonds	25	3	3
Collateralized mortgage obligations and pass-through securities	5	3	3
Money market mutual funds	25	10	3
Repurchase agreements	25	10	N/A

More than 58.4% of the Company's investments as of August 31, 2016 are in the following: Federal Home Loan Mortgage Corporation medium term notes (33.9%), Federal Farm Credit Banks (10.1%), Federal Home Loan Bank bonds (11.5%), and Tennessee Valley Authority (2.9%). These investments are in accordance with the City's investment policy.

(e) Custodial Credit Risk

The Company has selected, as custodial bank, a member of the Federal Reserve System to hold its investments. Delivery of the applicable investment documents to the Company's custodian is required for all investments. For secured transactions, such as repurchase agreements, either the title to or a perfected security interest in the securities, along with any necessary transfer documents, must be transferred to the custodian. Such transactions will always use delivery versus payment procedures.

(4) Recoverable Costs

In compliance with orders issued by the PGC, the cost of projects that produce benefits over an extended period is recorded on the balance sheets as a recoverable cost in other assets. There is no return on the asset being charged to the customers. The unamortized costs included in other assets and deferred debits were $0.3 million as of August 31, 2016. The unamortized costs included in other assets and deferred debits were $0.4 million as of August 31, 2015. The unamortized costs included in other current assets and deferred debits were $0.1 million as of August 31, 2016 and August 31, 2015.

In accordance with U.S. GAAP for regulated entities, the Company has recognized the long-term portion of its environmental remediation liability as a regulatory asset because based on available evidence it is probable that the previously incurred costs will be recovered through rates. In FY 2016, settlements by the Company's insurance carriers provided less than $0.1 million associated with environmental remediation costs. Environmental remediation costs of approximately $0.6 million in FY 2016 were offset by these insurance settlements, and the remainder was recorded on the balance sheets as a recoverable cost in other assets. The Company estimates additional expenditures to be approximately $32.7 million.

(5) Deferred Compensation Plan

The Company offers its employees a deferred compensation plan (the Plan) created in accordance with Internal Revenue Code Section 457. The Plan, available to all Company employees with at least 30 days of service, permits them to defer a portion of their salary until future years. The Company provides an annual 10.0% matching contribution of applicable wages that immediately vests to the employee. The Company contributed $0.3 million in FY 2016 and FY 2015. PGW's contributions are accounted for as part of administrative and general expense.

(6) Notes Payable

Pursuant to the provisions of the City of Philadelphia Note Ordinances, PGW may sell short-term notes to either support working capital requirements or pay the costs of certain capital projects and other project costs. PGW may issue short-term notes in a principal amount, which, together with interest, may not exceed $150.0 million outstanding to support working capital requirements. PGW may also sell additional short-term notes in an aggregate principal amount, which may not exceed $120.0 million outstanding at any time to pay the costs of certain capital projects and other project costs (Capital Project Commercial Paper). All notes are supported by two irrevocable letters of credit and a security interest in PGW's revenues. The letters of credit supporting PGW's combined commercial paper programs fixed the maximum level of outstanding notes plus interest at $120.0 million in FY 2016 and FY 2015. There was $71.0 million of tax-exempt capital project commercial paper outstanding at August 31, 2016. At the end of FY 2015, there was $30.0 million of tax-exempt capital project commercial paper outstanding.

The commitment amount is $120.0 million under the current credit agreements. The expiration date of the credit agreements is August 14, 2017.

Capital Project Commercial Paper activity for the year ended August 31, 2016 was as follows (thousands of U.S. dollars):

	Year ended August 31, 2016			
	Beginning balance	Additions	Deletions	Ending balance
Commercial paper	$ 30,000	41,000	—	71,000

	Year ended August 31, 2015			
	Beginning balance	Additions	Deletions	Ending balance
Commercial paper	$ —	30,000	—	30,000

(7) GCR Tariff Reconciliation

During the fiscal year ended August 31, 2016, the Company's actual gas costs were below its billed gas costs by approximately $2.2 million. This amount was netted with other costs and recorded in other current assets for FY 2016. Actual gas costs were $8.4 million higher than billed gas costs in FY 2015.

Natural Gas Pipeline Supplier Refund

The Company received less than $0.1 million in refunds in FY 2016 and no refunds in FY 2015, related to Federal Energy Regulatory Commission/Pipeline Rate Cases. This amount was utilized as a reduction in the cost of gas for reconciliation purposes in the calculation of the applicable GCR.

(8) Long-Term Debt and Other Liabilities

The following summary of long-term debt consists primarily of bonds issued by the City under agreements whereby the Company must reimburse the City for the principal and interest payments required by the bond ordinances for the fiscal years ended August 31, 2016 and 2015 (thousands of U.S. dollars):

		August 31, 2016			August 31, 2015		
		Current portion	Long-term	Total	Current portion	Long-term	Total
Revenue bonds	$	34,790	803,040	837,830	38,215	876,960	915,175
Unamortized discount		(24)	(86)	(110)	(63)	(723)	(786)
Unamortized premium		10,037	78,666	88,703	4,878	38,482	43,360
Total revenue bonds	$	44,803	881,620	926,423	43,030	914,719	957,749

The following is a summary of activity related to revenue bonds and other liabilities and the respective balances for the fiscal years ended August 31, 2016 and 2015 (thousands of U.S. dollars):

		Year ended August 31, 2016				
		Beginning balance	Additions	Reductions	Ending balance	Due within one year
Revenue bonds	$	915,175	312,425	(389,770)	837,830	34,790
Other liabilities:						
Claims and judgments		6,501	—	(1,315)	5,186	5,307
Environmental cleanup		32,474	—	(1,288)	31,186	1,501
Other postemployment benefits		90,014	—	(8,571)	81,443	—
Interest rate swap liability		39,410	—	(7,604)	31,806	—
Total other liabilities	$	168,399	—	(18,778)	149,621	6,808

		Year ended August 31, 2015				
		Beginning balance	**Additions**	**Reductions**	**Ending balance**	**Due within one year**
Revenue bonds	$	1,015,920	261,770	(362,515)	915,175	38,215
Other liabilities:						
Claims and judgments		5,216	1,285	—	6,501	5,011
Environmental cleanup		33,499	—	(1,025)	32,474	1,965
Other postemployment benefits		101,788	—	(11,774)	90,014	—
Interest rate swap liability		38,762	648	—	39,410	—
Total other liabilities	$	179,265	1,933	(12,799)	168,399	6,976

(a) Principal Maturities and Scheduled Interest and Swap Payments

Principal maturities and scheduled interest payments for revenue bonds and estimated payments on the interest rate swaps are as follows (thousands of U.S. dollars):

		Revenue bonds			
		Principal	**Interest**	**Net swap amount**	**Total**
Fiscal year ending August 31:					
2017	$	34,790	27,849	4,061	66,700
2018		47,770	32,157	4,061	83,988
2019		47,645	30,003	4,062	81,710
2020		48,425	27,637	4,062	80,124
2021		49,140	25,287	4,062	78,489
2022–2026		253,080	92,901	18,150	364,131
2027–2031		176,480	54,853	2,740	234,073
2032–2036		124,990	24,651	—	149,641
2037–2040		55,510	5,542	—	61,052
Total	$	837,830	320,880	41,198	1,199,908

Future debt service is calculated using rates in effect at August 31, 2016 for variable rate bonds, which ranged from 0.55% to 0.60%. The variable rate received under the swaps is 70.0% of one-month London Interbank Offered Rate (LIBOR) until maturity, which was 0.35% at August 31, 2016.

(b) Bond Issuances – Refunding of Bonds and Defeasance of Bonds

1998 Ordinance Fourteenth Series Bonds

On August 30, 2016, the City issued Gas Works Revenue Bonds, Fourteenth Series (1998 General Ordinance) in the amount of $312.4 million for the purpose of advanced refunding of select maturities of the Seventh Series Bonds (1998 General Ordinance), Ninth Series Bonds (1998 General Ordinance), and Eighth Series A Bonds (1998 General Ordinance), and to make termination payments with respect to a portion of the swap agreements associated with certain maturities of the Eighth Series B, C, D, and E Bonds. The Fourteenth Series Bonds, with fixed interest rates that range from 2.0% to 5.0%, have maturity dates through 2038. The loss on this refunding was $33.5 million, which will be amortized over the life of the Fourteenth Series Bonds. This transaction provided net present value debt service savings of $38.2 million utilizing an arbitrage yield of 2.11%. The savings as a percentage of refunded bonds was 10.86%.

As of August 31, 2016, the Company's Eighth Series variable rate debt was backed by letter-of-credit agreements, which either extend to August 1, 2018 (Eighth Series C and D) or August 30, 2019 (Eighth Series B and E).

The Company's Fifth Series A-2 variable rate bonds are backed by an irrevocable letter of credit, which was extended on November 13, 2015 for a one-year term expiring on December 30, 2016.

Interest rates and maturities of the outstanding revenue bonds are detailed as follows (thousands of U.S. dollars):

	Interest rates	Maturity date (fiscal year)		Balance outstanding August 31 2016	Balance outstanding August 31 2015
5th Series A-2	Variable *	2035	$	30,000	30,000
7th Series	4.00%–5.00%	2038		4,615	171,540
7th Series Refunding	5.00%	2029		11,455	24,610
8th Series A	4.00%–5.25%	2017		7,840	24,135
8th Series B	Variable **	2028		27,370	50,260
8th Series C	Variable **	2028		27,225	50,000
8th Series D	Variable **	2028		40,845	75,000
8th Series E	Variable **	2028		27,370	50,260
9th Series	2.00%–5.25%	2040		67,860	135,835
10th Series	3.00%–5.00%	2026		35,355	41,765
13th Series	3.00%–5.00%	2034		245,470	261,770
14th Series	2.00%–5.00%	2038		312,425	—
			$	837,830	915,175

* As of August 31, 2016, the interest rate was 0.58%.

** As of August 31, 2016, the interest rate ranged from 0.55% to 0.60%.

(c) Debt Coverage and Sinking Fund Requirements

Under the terms of both general ordinances, the City is required to maintain rates to allow the Company to satisfy 1975 and 1998 revenue bond debt coverage ratio requirements. Upon issuance of the Thirteenth Series Bonds, no debt under the 1975 General Ordinance remains outstanding.

Also provided by both general ordinances is the establishment of a Sinking Fund Reserve into which deposits are made in an amount equal to the maximum annual debt service requirement on the bonds of each respective general ordinance in any fiscal year.

Funds in the Sinking Fund Reserve are to be applied to the payment of debt service if, for any reason, other funds in the Sinking Fund, which operates as a debt service payment fund into which debt service payments are deposited as they come due, should be insufficient.

The revenue bonds are, and will be, equally and ratably collateralized by a security interest in all of the Company's project revenues, as defined in the general ordinances, and moneys in the Sinking Fund, including the Sinking Fund Reserve.

Portions of certain revenue bonds were issued as zero-coupon securities. Interest on these securities is accrued and compounded on the payment dates of the current interest bonds within the issue. The accrued interest in the amount of $2.3 million and $6.4 million in FY 2016 and FY 2015, respectively, is reported as a component of accrued accounts.

(d) Interest Rate Swap Agreements

Objective – In January 2006, the City entered into a fixed rate payor, floating rate receiver interest rate swap to create a synthetic fixed rate for the Sixth Series Bonds. The interest rate swap was used to hedge interest rate risk.

Terms – The swaps had an original termination date of August 1, 2031, which was amended to August 1, 2028. The swaps require the City to pay a fixed rate of 3.6745% and receive a variable rate equal to 70.0% of one-month LIBOR until maturity.

In August 2016, the underlying variable rate bonds maturing in FY 2017 through FY 2023 were refunded with fixed rate bonds and the related portions of the swaps, totaling $102.7 million in notional amount, were terminated. PGW made a termination payment of $13.9 million to partially terminate the swaps.

As of August 31, 2016, the swaps had a notional amount of $122.8 million and the associated variable rate debt had a $122.8 million principal amount, broken down by series as follows:

- The Series B swap had a notional amount of $27.4 million and the associated variable rate bonds had a $27.4 million principal amount.
- The Series C swap had a notional amount of $27.2 million and the associated variable rate bonds had a $27.2 million principal amount.
- The Series D swap had a notional amount of $40.8 million and the associated variable rate bonds had a $40.8 million principal amount.
- The Series E swap had a notional amount of $27.4 million and the associated variable rate bonds had a $27.4 million principal amount.

The final maturity date for all swaps is on August 1, 2028.

Fair Value – As of August 31, 2016, the swaps had a combined negative fair value of approximately $31.8 million. The fair values of the interest rate swaps were estimated using the zero-coupon method and are classified as Level 2 within the fair value hierarchy as described in note 1. That method calculates the future net settlement payments required by the swap, assuming current forward rates are implied by the current yield curve for hypothetical zero-coupon bonds due on the date of each future net settlement on the swaps.

Risks – As of August 31, 2016, the City is not exposed to credit risk because the swaps had a negative fair value. Should interest rates change and the fair value of the swaps become positive, the City would be exposed to credit risk in the amount of the swaps' fair value. The swaps include a termination event additional to those in the standard ISDA master agreement based on credit ratings. The swaps may be terminated by the City if the rating of the counterparty falls below A3 or A – (Moody's/S&P), unless the counterparty has (i) assigned or transferred the swap to a party acceptable to the City; (ii) provided a credit support provider acceptable to the City whose obligations are pursuant to a credit support document acceptable to the City; or (iii) executed a credit support annex, in form and substance acceptable to the City, providing for the collateralization by the counterparty of its obligations under the swaps.

The swaps may be terminated by the counterparty if the rating on the City of Philadelphia Gas Works Revenue bonds falls below Baa2 or BBB (Moody's/S&P). However, because the City's swap payments are insured by Assured Guaranty Municipal Corporation, as long as Assured Guaranty Municipal Corporation is rated at or above A2 or A (Moody's/S&P), the termination event based on the City's ratings is stayed. At the present time, the rating for Assured Guaranty Municipal Corporation is at A2/AA (Moody's/S&P).

The City is exposed to (i) basis risk, as reflected by the relationship between the rate payable on the bonds and 70.0% of one-month LIBOR received on the swap, and (ii) tax risk, a form of basis risk, where the City is exposed to a potential additional interest cost in the event that changes in the federal tax system or if marginal tax rates cause the rate paid on the outstanding bonds to be greater than the 70.0% of one-month LIBOR received on the swap.

The impact of the interest rate swaps on the financial statements for the years ended August 31, 2016 and 2015 is as follows (thousands of U.S. dollars):

		Interest rate swap liability	Deferred outflows of resources
Balance, August 31, 2015	$	39,410	20,948
Change in fair value through August 31, 2016		(7,604)	(7,604)
Amortization of terminated hedge		—	1,419
Balance, August 31, 2016	$	31,806	14,763

		Interest rate swap liability	Deferred outflows of resources
Balance, August 31, 2014	$	38,762	18,879
Change in fair value through August 31, 2015		648	648
Amortization of terminated hedge		—	1,421
Balance, August 31, 2015	$	39,410	20,948

Because the original hedging relationship was terminated when the Sixth Series Bonds were refunded by the Eighth Series Bonds in 2009, there is a difference between the interest rate swap liability and the related deferred outflows of resources. The difference is being amortized on a straight-line basis into expense over the life of the hedge.

The interest rate swap liability is included in other noncurrent liabilities on the balance sheet.

There are no collateral posting requirements associated with the swap agreements.

(9) Defeased Debt

Defeased debt of the Company (bonds issued by the Company payable from the proceeds of irrevocably pledged assets) at August 31, 2016 was as follows (thousands of U.S. dollars):

	Latest date maturing to	Interest rate		Bonds outstanding
7th Series	10/01/37	5.00%	$	180,080
8th Series A	08/01/17	5.25		4,000
8th Series B	08/01/23	3.68		22,890
8th Series C	08/01/23	3.68		22,775
8th Series D	08/01/23	3.68		34,155
8th Series E	08/01/23	3.68		22,890
9th Series	08/01/35	5.25		64,765
12th Series B	05/15/20	7.00		20,435
17th Series	07/01/18	5.38		23,995
19th Series	10/01/23	5.00		14,450
Total			$	410,435

The assets pledged, primarily noncallable U.S. government securities, had a market value of $436.2 million at August 31, 2016, bearing interest on face value from 0.00% to 5.89%.

Defeased debt of the Company (bonds issued by the Company payable from the proceeds of irrevocably pledged assets) at August 31, 2015 was as follows (thousands of U.S. dollars):

	Latest date maturing to	Interest rate		Bonds outstanding
12th Series B	05/15/20	7.00%	$	24,735
17th Series	07/01/18	5.38		37,275
19th Series	10/01/23	5.00		14,450
Total			$	76,460

The assets pledged, primarily noncallable U.S. government securities, had a market value of $82.4 million at August 31, 2015, bearing interest on face value from 5.84% to 5.89%.

The investments held by the trustee and the defeased bonds are not recognized on the Company's balance sheets in accordance with the terms of the Indentures of Defeasance. The investments pledged for the redemption of the defeased debt have maturities and interest payments scheduled to coincide with the trustee cash requirements for debt service.

(10) Defined Benefit Pension Plan

(a) Plan Description

The Pension Plan provides pension benefits for all eligible employees of PGW and other eligible class employees of PFMC and PGC.

The Pension Plan provides for retirement payments for vested employees at age 65 or earlier under various options, which includes a disability pension provision, a preretirement spouse or domestic partner's death benefit, a reduced pension for early retirement, various reduced pension payments for the election of a survivor option, and a provision for retirement after 30 years of service without penalty for reduced age. In accordance with Resolutions of the PGC, Ordinances of City Council, and as prescribed by the City's Director of Finance, the Pension Plan is being funded with contributions by PGW to the Sinking Fund Commission of the City, which serves as the Trustee. Management believes that the Pension Plan is in compliance with all applicable laws.

(b) Benefits Provided

Normal Retirement Benefits: The Pension Plan provides retirement benefits as well as death and disability benefits. Retirement benefits vest after five years of credited service. Employees who retire at or after age 65 are entitled to receive an annual retirement benefit, payable monthly, in an amount equal to the greater of:

- 1.25% of the first $6,600 of Final Average Earnings plus 1.75% of the excess of Final Average Earnings over $6,600, times years of credited service, with a maximum of 60.0% of the highest annual earnings during the last 10 years of credited service or

- 2.0% of total earnings received during the period of credited service plus 22.5% of the first $1,200 annual amount, applicable only to participants who were employees on or prior to March 24, 1967.

Death Benefits: Before retirement, spouses of deceased active participates or of former participants are entitled to vested benefits provided such participants died after having attained age 45 and completed at least 15 years of Credited Service and whose age plus years of credited service equals at least 65 years of whom have completed at least 15 years of Credited Service regardless of age. The benefit payable is an amount for the spouse's remaining lifetime equal to the amount the beneficiary of the participant would have received had the participant retired due to a disability on the day preceding his/her death and elected the 100% contingent annuitant option.

Disability Benefits: Disability benefits are the same as the Normal Retirement Benefits and are based on Final Average Compensation and Credited Service as of the date of disability.

Final Average Earnings are the employee's average pay, over the highest five years of the last 10 years of credited service. Employees with 15 years of credited service may retire at or after age 55 and receive a reduced retirement benefit. Employees with 30 years of service may retire without penalty for reduced age.

Except as noted in the following paragraph, covered employees are not required to contribute to the Pension Plan.

In December 2011, the Pension Plan was amended by Ordinance and a new deferred compensation plan was authorized by Ordinance as well. Newly hired employees have an irrevocable option to join either a new deferred compensation plan created in accordance with Internal Revenue Code Section 401 or the existing defined-benefit plan. The defined-contribution plan provides for an employer contribution equal to 5.5% of applicable wages. The defined-benefit plan provides for a newly hired employee contribution equal to 6.0% of applicable wages. The Ordinance did not affect the retirement benefits of active employees, current retirees and beneficiaries, or terminated employees entitled to benefits but not yet receiving them.

(c) *Employees Covered by Benefit Terms*

At June 30, 2016, the date of the most recent actuarial valuation, the Pension Plan membership consisted of:

Retirees and beneficiaries currently receiving benefits and terminated employees entitled to benefits, but not yet receiving them	2,521
Participants:	
Vested	1,036
Nonvested	215
Total participants	1,251
Total membership	3,772

During the period September 1, 2014 through June 30, 2015, PGW experienced significant changes in its workforce. During this time, there were over 180 active Pension Plan participants who moved into retirement. This activity is more than double the number of retirements experienced by PGW in a normal year.

(d) *Contributions*

The Pension Plan funding policy provides for periodic employer contributions at actuarially determined rates that, expressed as percentages of annual covered payroll, are sufficient to accumulate assets to pay benefits when due considering employee contributions required for new hires after December 2011 who elect to participate in the Pension Plan. Level percentages of payroll employer contribution rates are determined using the Projected Unit Credit actuarial funding method. For the Pension Plan years ended June 30, 2016 and 2015, PGW's average contribution rate was 29.1% and 22.6% of annual payroll, respectively. Employee contributions were approximately $0.6 million in the plan year ended June 30, 2016 and approximately $0.4 million in the plan year ended June 30, 2015. The actuarially determined contributions for FY 2016 and FY 2015 were $26.5 million and $21.5 million, respectively. PGW contributed $26.5 million and $21.5 million in its FY 2016 and FY 2015, respectively.

(e) *Net Pension Liability*

The Company's net pension liability as of August 31, 2016 and 2015 was measured as of June 30, 2016 and 2015, and the total pension liability used to calculate the net pension liability was determined by an actuarial valuation as of June 30, 2016, June 30, 2015.

The total pension liability was determined using the entry age normal actuarial method and the following actuarial assumptions:

	2016	**2015**
Inflation	2.00%	2.00%
Salary increases	4.50	4.50
Investment rate of return	7.30	7.65

Mortality rates. Mortality rates for FY 2015 were based on the RP-2014 mortality tables for males and females generationally projected with scale MP-2014. Mortality rates for FY 2016 were based on the RP-2014 mortality tables for males and females generationally projected with scale MP-2015.

Long-term rate of return. The long-term expected rate of return on Pension Plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of Pension Plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by expected inflation. The target allocation and best estimates of arithmetic real rates of return for each major asset class for FY 2016 are summarized in the following table:

Asset class	**Minimum**	**Maximum**	**Target**	**Expected annual return**
Domestic equity	35.0%	55.0%	45.0%	9.0%
International equity	10.0	30.0	20.0	9.1
Fixed income	25.0	45.0	35.0	5.6
Cash equivalents	—	10.0	—	—
			100.0%	

Discount rate. The discount rate used to measure the total pension liability at June 30, 2016 and 2015 was 7.30% and 7.65%, respectively. The projection of cash flows used to determine the discount rate assumed that employee contributions will be made at the current contribution rate and that Company contributions will be made at rates equal to the difference between actuarially determined contribution rates and the employee contributions. Based on those assumptions, the Pension Plan's fiduciary net position was projected to be available to make all projected future benefit payments of current active and inactive employees. Therefore, the long-term expected rate of return on Pension Plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Changes in Net Pension Liability

(Thousands of U.S. dollars)

		Increase (decrease)		
		Total pension liability (a)	**Plan fiduciary net position (b)**	**Net pension liability (a)-(b)**
Balances at September 1, 2014	$	677,401	513,145	164,256
Changes for the year:				
Service cost		4,890	—	4,890
Interest		52,377	—	52,377
Differences between expected and actual experience		17,961	—	17,961
Contributions – employer		—	21,106	(21,106)
Contributions – employee		—	393	(393)
Net investment income		—	24,472	(24,472)
Benefit payments, including refunds of employee contributions		(46,917)	(46,917)	—
Administrative expenses		—	(1,480)	1,480
Change in assumptions		44,876	—	44,876
Net changes		73,187	(2,426)	75,613
Balances at August 31, 2015	$	750,588	510,719	239,869

Changes in Net Pension Liability

(Thousands of U.S. dollars)

		Increase (decrease)	
	Total pension liability (a)	**Plan fiduciary net position (b)**	**Net pension liability (a)-(b)**
Balances at September 1, 2015	$ 750,588	510,719	239,869
Changes for the year:			
Service cost	5,399	—	5,399
Interest	55,903	—	55,903
Differences between expected and actual experience	(8,840)	—	(8,840)
Contributions – employer	—	21,123	(21,123)
Contributions – employee	—	602	(602)
Net investment income	—	2,872	(2,872)
Benefit payments, including refunds of employee contributions	(50,447)	(50,447)	—
Administrative expenses	—	(1,611)	1,611
Change in assumptions	26,748		26,748
Net changes	28,763	(27,461)	56,224
Balances at August 31, 2016	$ 779,351	483,258	296,093

Sensitivity of the net pension liability to changes in the discount rate. The following presents the net pension liability of the Company at June 30, 2016, calculated using the discount rate of 7.30%, as well as what the Company's net pension liability as of August 31, 2016 would be if it were calculated using a discount rate that is one-percentage-point lower (6.30%) or one-percentage point higher (8.30%) than the current rate:

	1% Decrease 6.30%	**Current discount rate 7.30%**	**1% Increase 8.30%**
		(thousands of U.S. dollars)	
Net pension liability	$ 387,060	296,093	220,296

The following presents the net pension liability of the Company at June 30, 2015, calculated using the discount rate of 7.65%, as well as what the Company's net pension liability as of August 31, 2015 would be if it were calculated using a discount rate that is one-percentage-point lower (6.65%) or one-percentage point higher (8.65%) than the current rate:

		1% Decrease 6.65%	Current discount rate 7.65%	1% Increase 8.65%
		(thousands of U.S. dollars)		
Net pension liability	$	326,719	239,869	167,415

Pension Plan fiduciary net position. Detailed information about the Pension Plan's fiduciary net position is available in the separately issued Pension Plan financial report.

(f) Pension Expense and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions

For the years ended August 31, 2016 and 2015, the Company recognized pension expense of $62.3 million and $43.7 million, respectively. At August 31, 2016 and 2015, the Company reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources (thousands of U.S. dollars):

		August 31, 2016		August 31, 2015	
		Deferred outflows of resources	Deferred inflows of resources	Deferred outflows of resources	Deferred inflows of resources
Differences between expected and actual experience	$	61,232	—	44,377	—
Changes of assumptions		—	—	33,572	—
Net difference between projected and actual earnings on pension plan investments		21,278	—	—	(11,653)
Contributions made after measurement date		5,533	—	179	—
Total	$	88,043	—	78,128	(11,653)

The $5.5 million reported as deferred outflows of resources related to employer contributions made after the measurement date as of June 30, 2016 will be recognized as a reduction of the net pension liability in FY 2017. Amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense as follows (thousands of U.S. dollars):

	Deferred outflows of resources	Deferred inflows of resources
Fiscal year:		
2017	$ 36,730	—
2018	24,617	—
2019	14,155	—
2020	7,007	—
Total	$ 82,509	—

(g) Fair Value Measurements

The following table sets forth by level, within the fair value hierarchy described in note 1, the Plan's assets at fair value as of June 30, 2016 (thousands of U.S. dollars):

	Level 1	Level 2	Level 3	Total
Corporate bonds	$ —	46,427	—	46,427
Common and preferred stock	298,387	17,274	1	315,662
U.S. government securities	35,964	19,659	—	55,623
Financial agreements	—	—	35	35
Collateralized mortgage obligations	—	42,851	—	42,851
Foreign entity's debt	—	5,595	221	5,816
Municipal obligations	—	4,038		4,038
	$ 334,351	135,844	257	470,452

The following table sets forth by level, within the fair value hierarchy, the Plan's assets at fair value as of June 30, 2015 (thousands of U.S. dollars):

		Level 1	Level 2	Level 3	Total
Corporate bonds	$	—	43,599	—	43,599
Common and preferred stock		333,725	16,480	3	350,208
U.S. government securities		46,576	10,285	—	56,861
Financial agreements		—	—	64	64
Collateralized mortgage obligations		—	38,018	—	38,018
Foreign entity's debt		—	4,359	200	4,559
Municipal obligations		—	6,593		6,593
	$	380,301	119,334	267	499,902

(11) Other Postemployment Benefits

(a) Plan Description

The Company sponsors a single-employer defined-benefit healthcare plan and provided postemployment healthcare and life insurance benefits to approximately 2,190 and 2,201 participating retirees and their beneficiaries and dependents in FY 2016 and FY 2015, respectively, in accordance with their retiree medical program. The annual covered payroll (which was substantially equal to total payroll) was $113.0 million and $114.1 million at August 31, 2016 and 2015, respectively.

The Company 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 the Company's expense and can elect to pay toward a more expensive plan. Retirees may also contribute toward enhanced dental plan and life insurance coverage. PGW pays 100% of the cost for the prescription drug plan after drug co-pays. Union employees hired on or after May 21, 2011 and Non Union employees hired on or after December 21, 2011 are entitled to receive postretirement medical, prescription, and dental benefits for five years only. Currently, the Company provides for the cost of healthcare and life insurance benefits for retirees and their beneficiaries on a pay-as-you-go basis.

Total expense incurred for healthcare and life insurance related to retirees amounted to $28.5 million and $30.3 million in FY 2016 and FY 2015, respectively. In addition, the Company expensed $18.5 million of funding for the OPEB Trust and retirees contributed $0.3 million toward their healthcare in both FY 2016 and FY 2015. These contributions represent the additional cost of healthcare plans chosen by retirees above the basic plan offered by the Company. Total premiums for group life insurance were $2.4 million in both FY 2016 and FY 2015, which included $2.0 million and $1.9 million for retirees in FY 2016 and FY 2015, respectively. Retirees contributed $0.2 million toward their life insurance in both FY 2016 and FY 2015.

(b) Annual Postemployment Benefit Cost, Contributions Required, and Contributions Made

The amount paid by the Company for retiree benefits in FY 2016 was $49.6 million, consisting of $29.3 million of healthcare expenses, $1.8 million of life insurance expenses, and $18.5 million contributed to the OPEB Trust. The amount paid by the Company for retiree benefits in FY 2015 was $48.8 million, consisting of $28.6 million of healthcare expenses, $1.7 million of life insurance expenses, and $18.5 million contributed to the OPEB Trust. The difference between the AOC and the Company's contributions resulted in a decrease in the OPEB obligation of $8.6 million and $11.8 million in FY 2016 and FY 2015, respectively, which was recorded to other noncurrent liabilities and expensed.

(i) Funded Status

The actuarial accrued liability for benefits at August 31, 2016 and 2015 was $489.7 million and $505.4 million, respectively. The ratio of the unfunded actuarial accrued liability to the covered payroll was 316.8% as of August 31, 2016 and 351.6% as of August 31, 2015.

Historical trend information reflecting funding progress and contributions made by the Company is presented in the Schedule of Other Postemployment Benefits Funding Progress (Required Supplementary Information).

(ii) Assumptions

Actuarial valuations involve estimates of the value of reported amounts and assumptions about the probability of events far into the future, and are subject to continual revision as actual amounts are compared to past expectations and new estimates are made about the future. Projections of benefits for financial reporting purposes are based on the substantive plan (the plan as understood by the employer and the plan members) and include the types of benefits provided at the time of each valuation and the historical pattern of sharing of benefit costs between the employer and plan members to that point. The actuarial methods and assumptions used include techniques that are designed to reduce the effects of short-term volatility in actuarial accrued liabilities and the actuarial value of assets, consistent with the long-term perspective of the calculations.

The assumptions used to determine the AOC for the current year and the funded status of the plan include:

Actuarial cost method	Projected unit credit
Method(s) used to determine the actuarial value of assets	Market value of plan assets held in the OPEB trust
Investment return assumption (discount rate)	7.95%, which represents the long-term expected investment return on OPEB trust assets
Mortality	RP-2014 Mortality Tables with projection scale MP-2015
Amortization method	Level dollar amount
Amortization period	Open period of 30 years

(iii) Healthcare cost trend rates are as follows

	Healthcare cost trend rates			
Year	**Medical (pre-65)**	**Medical (post-65)**	**Prescription**	**Dental**
2016	7.0 %	5.0 %	9.5 %	4.0 %
2017	6.5	4.5	8.5	4.0
2018	6.0	4.5	7.5	4.0
2019	5.5	4.5	6.5	4.0
2020	5.0	4.5	5.5	4.0
2021 and following	4.5	4.5	4.5	4.0

The following table shows the components of the Company's AOC for FY 2016 and FY 2015, the amount actually contributed to the plan, and the Company's net OPEB obligation (thousands of U.S. dollars):

		2016	**2015**
Annual required contribution	$	41,782	37,980
Interest on net OPEB obligation		7,156	8,092
Adjustment to the annual required contribution		(7,958)	(8,999)
Annual OPEB cost		40,980	37,073
Contributions made		(49,551)	(48,847)
Net OPEB obligation as of prior year		90,014	101,788
Net OPEB obligation as of August 31	$	81,443	90,014

The AOC is recorded in the statements of revenues and expenses and changes in net position. For the year ended August 31, 2016, approximately $9.9 million was recorded to other postemployment benefits expense and $31.1 million was allocated to administrative and general expense. For the year ended August 31, 2015, approximately $6.7 million was recorded to other postemployment benefits expense and $30.3 million was allocated to administrative and general expense.

The Company's AOC, the percentage of AOC contributed to the plan, and the net OPEB obligation for FY 2016 and the two preceding fiscal years were as follows (thousands of U.S. dollars):

		Annual OPEB cost	Percentage of annual OPEB cost contributed	Net OPEB obligation
Fiscal year ended August 31:				
2016	$	40,980	120.9%	81,443
2015		37,073	131.8	90,014
2014		37,090	119.6	101,788

(c) Other Coverage Information

PGW is self-insured for the healthcare of active employees and retirees under the age of 65. Retirees over the age of 65 are insured on an experience-rated basis. At August 31, 2016, the Company has in place $208.7 million of group life insurance coverage for both active and retired employees, which is retrospectively rated on a monthly basis.

(12) Defined Contribution Pension Plan

PGW contributes to a defined-contribution pension plan, for all employees hired after May 21, 2011 (Union) or December 8, 2011 (Nonunion) who elect not to contribute to the defined-benefit plan. The Defined Contribution Plan is administered by the PGW Investment Committee. Benefit terms, including contribution requirements, for the Defined Contribution Plan are established and may be amended by Ordinance of the City. For each employee in the Defined Contribution Plan, the Company is required to contribute annually 5.5% percent of applicable wages to an individual employee account. Employees are not required to make contributions to the plan. For the years ended August 31, 2016 and 2015, the Company recognized pension expense of $1.0 million and $0.7 million, respectively, for the Defined Contribution Plan.

Participants are immediately vested in Company contributions and earnings on Company contributions.

The Company had no accrued liabilities for contributions payable to the Defined Contribution Plan at August 31, 2016 and 2015.

(13) Pollution Remediation Obligation

The Company recorded an additional liability for pollution remediation obligations of $1.3 million and $1.0 million for FY 2016 and FY 2015, respectively. The pollution remediation liability is reflected in other noncurrent and current liabilities. In accordance with U.S. GAAP for regulated entities, the Company has also recognized the long-term portion of its environmental remediation liability as a regulatory asset because based on available evidence it is probable that the previously incurred costs will be recovered through rates.

The pollution remediation obligations at August 31, 2016 and 2015 were $32.7 million and $34.4 million, respectively, which reflect the provisions of GASB Statement No. 49, *Accounting and Financial Reporting for Pollution Remediation Obligations*.

(14) Risk Management

The Company 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. While self-insured for many risks, the Company purchases insurance coverage where appropriate. The Company's real and personal property is insured against the risk of loss or damage in the amount of $250.0 million, subject to a $0.5 million per accident deductible at the Richmond and Passyunk Plants and a $0.1 million per accident deductible at all other locations. There are separate sublimits for flood and earth movement at select locations. The Company's Property Insurance includes coverage for damage incurred from a terrorist attack. In addition, the Company maintains Blanket Crime, which is a form of Property Insurance.

The Company maintains $210.0 million in liability (including terrorism) coverage, insuring against the risk of damage to property, or injury to the public with a $1.0 million per occurrence self-insured retention.

The Company maintains statutory limits for Workers' Compensation (including terrorism) with a $0.5 million per occurrence self-insured retention.

The Company maintains a $30.0 million Public Officials Liability (Directors and Officers Liability) policy with a $0.5 million retention as well as a $60.0 million Fiduciary Liability policy with a $0.2 million self-insured retention.

The Company maintains $5.0 million in Environmental Liability coverage for liability arising from nonowned Disposal Sites subject to an each incident deductible of $0.1 million, as well as a $5.0 million Cyber (Privacy) Liability policy with a $0.3 million retention covering costs arising from a data or security breach.

The Company maintains a medical stop-loss insurance program for its self-insured healthcare plans. The coverage provides for a $0.3 million deductible per covered participant.

The Company has evaluated all open claims as of August 31, 2016 and has appropriately accrued for these claims on the balance sheet.

Claims and settlement activity for occurrences excluded under the provisions of insurance policies for injuries and damages are as follows (thousands of U.S. dollars):

		Beginning of year reserve	Current year claims and adjustments	Claims settled	End of year reserve	Current liability amount
Fiscal year ended August 31:						
2016	$	11,512	2,022	(3,041)	10,493	5,307
2015		9,944	3,610	(2,042)	11,512	5,011
2014		10,411	2,498	(2,965)	9,944	4,728

(15) Commitments and Contingencies

Commitments

Commitments for major construction and maintenance contracts were approximately $40.3 million and $25.3 million, as of August 31, 2016 and 2015, respectively.

The Company is committed under various noncancelable operating lease agreements to pay minimum annual rentals as follows (thousands of U.S. dollars):

2017	$	810
2018		373
2019		93

Rent expense for the fiscal years ended August 31, 2016 and 2015 amounted to $1.9 million and $1.5 million, respectively.

The Company, in the normal course of conducting business, has entered into long-term contracts for the supply of natural gas, firm transportation, and long-term firm gas storage service. The Company's cumulative obligations for demand charges for all of these services are approximately $4.5 million, per month.

The Company has entered into seasonal contracts with suppliers providing the Company the ability to fix the price of the purchase of natural gas during the period from November 1, 2016 through March 31, 2017.

The Company's amended FY 2017 Capital Budget was approved by City Council in the amount of $118.3 million. Within this approval, funding was provided to continue the implementation of an 18-mile CIMR Program. Main replacement cost for this program in FY 2017 is expected to be $24.4 million. The total six-year cost of the CIMR Program is forecasted to be $154.9 million. In addition to this program, the FY 2017 Capital Budget includes funding for an incremental CIMR Program for which PGW will request recovery through a DSIC. This incremental program in FY 2017 is expected to cost $33.5 million. The total six-year cost of this incremental program is forecasted to be $212.1 million. The FY 2017 Capital Budget also includes $2.4 million for the purchase of replacement Automatic Meter Reading (AMR) units. The total six-year cost of this program to replace AMR units is approximately $15.2 million.

Contingencies

The Company's material legal proceeding is described below. The Company believes that it has valid defenses to these legal proceedings and intends to defend them vigorously. PGW records reserves for estimated losses from contingencies when information available indicates that a loss is probable and the amount of the loss, or range of loss, can be reasonably estimated. Management has assessed the following matter based on current information and made a judgment concerning its potential outcome, considering the nature of the claim, the amount and nature of damages sought, and the probability of success. The Company is unable to predict the outcome of this legal proceedings nor reasonably estimate the scope or amount of any associated costs and potential liabilities.

Augustin, et al. v. City of Philadelphia - This is a federal action brought against the City (PGW) on behalf of plaintiffs and similarly situated property owners, whose property the City (PGW) filed liens for unpaid gas charges incurred by another party (i.e., a tenant). The plaintiffs represent a class of non-owner-occupied residential and commercial property owners, seeking to enjoin the City (PGW) from imposing or enforcing gas liens on their properties for unpaid charges incurred by their tenants or others living in or utilizing the properties. Plaintiffs allege that the City (PGW) imposes such liens on their properties without meaningful and timely notice to them or opportunity to be heard beforehand, in alleged violation of their federal due process rights.

In February 2016, the Court denied the City's summary judgment motion, identifying certain purported issues of material fact. In March 2016, the Court granted the plaintiffs' summary judgment motion, finding that the process employed by the City to impose liens on non-owner occupied properties violates owners' due process rights. In May 2016, following a hearing, the Court entered a preliminary injunction against the City and PGW restraining them, pending further order of the Court, from filing any new liens against such properties and from collecting upon existing liens. However, the Court permitted the City and PGW to continue to issue payoff statements to facilitate real estate transactions on such properties, and to accept the payoffs, but directed it to segregate such money. A hearing on permanent injunction and relief, and other outstanding issues was held July 26, 2016. On December 1, 2016, the Court issued an Order and Opinion certifying the class. An order addressing the request for a permanent injunction and relief has not yet issued. Upon receipt of a final order in this matter, the City will evaluate its legal options, including, if necessary, pursuing an appeal.

In addition to the legal proceeding noted above, PGW is party to other litigation or legal proceedings arising in the ordinary course of business. In management's opinion, the disposition of these ordinary course matters will not materially adversely affect PGW's financial statements.

(16) Subsequent Events

The Company has evaluated events and transactions that occurred between the balance sheet date and December 28, 2016, which is the date the financial statements were available to be issued, and determined that there are no other items to disclose.

PHILADELPHIA GAS WORKS

(A Component Unit of the City of Philadelphia)

Required Supplementary Information (Unaudited)

Schedule of Changes in Net Pension Liability and Related Ratios

(Thousands of U.S. dollars)

		Fiscal year ending	
		2016	**2015**
Total pension liability:			
Service cost	$	5,399	4,890
Interest cost		55,903	52,377
Changes in benefit terms		—	—
Differences between expected and actual experience		(8,840)	17,961
Changes in assumptions		26,748	44,876
Benefit payments		(50,447)	(46,917)
Net change in total pension liability		28,763	73,187
Total pension liability (beginning)		750,588	677,401
Total pension liability (ending)		779,351	750,588
Plan fiduciary net position:			
Contributions – employer		21,123	21,106
Contributions – employee		602	393
Net investment income		2,872	24,472
Benefit payments		(50,447)	(46,917)
Administrative expense		(1,611)	(1,480)
Net change in fiduciary net position		(27,461)	(2,426)
Plan fiduciary net position (beginning)		510,719	513,145
Plan fiduciary net position (ending)		483,258	510,719
Net pension liability (ending)	$	296,093	239,869
Net position as a percentage of pension liability		62.01%	68.04%
Covered employee payroll	$	90,860	95,187
Net pension liability as a percentage of payroll		325.88%	252.00%

Notes to schedule:

Historical information:

The Company has presented the information noted above for those years for which information is available. Ten-year trend information will be presented prospectively.

Changes in assumptions:

In FY 2016, amounts reported as changes of assumptions resulted primarily from (i) adjustments to assumed life expectancies as a result of adopting the RP-2014 mortality table generationally projected with Scale MP-2015 to better reflect the actual and future mortality experience and (ii) changing the discount rate from 7.65% to 7.30%.

See paragraph on Required Supplementary Information included in independent auditor’s report.

PHILADELPHIA GAS WORKS
(A Component Unit of the City of Philadelphia)

Required Supplementary Information (Unaudited)

Schedule of Pension Contributions

(Thousands of U.S. dollars)

Fiscal year ending		2016	2015	2014	2013	2012	2011	2010	2009	2008	2007
Actuarially determined contribution	$	26,476	21,526	24,385	23,673	23,802	22,936	23,099	15,437	15,453	15,608
Contributions made		26,476	21,526	24,385	23,673	23,802	22,936	23,099	15,437	15,453	15,608
Contribution deficiency/(excess)	$	—	—	—	—	—	—	—	—	—	—
Covered employee payroll	$	90,860	95,187	103,530	105,985	106,308	106,308	106,125	108,474	107,918	102,958
Contributions as a percent of covered employee payroll		29.14%	22.61%	23.55%	22.34%	22.39%	21.58%	21.77%	14.23%	14.32%	15.16%

Notes to schedule:
Methods and assumptions used to determine contribution rates:
Actuarial Valuation Date: July 1 for 2016 and 2015 and September 1 for prior periods
Actuarial Cost Method: Projected Unit Credit
Asset Valuation Method: Assets smoothed over a five-year period beginning in 2015 and Market Value in 2014
Amortization Method: Contributions based on greater of 20-year level dollar open amortization method or 30-year level dollar closed amortization method
Salary Increases: 4.50%
General Inflation: 2.00%
Investment Rate of Return: 7.30% in 2016, 7.65% in 2015, and 7.95% in 2014 and prior
Cost of Living: N/A
Mortality Rates: RP-2014 static Mortality generationally projected with Scale MP-2015 in 2016

See paragraph on Required Supplementary Information included in independent auditor's report.

PHILADELPHIA GAS WORKS
(A Component Unit of the City of Philadelphia)

Required Supplementary Information (Unaudited)

Schedule of Other Postemployment Benefits Funding Progress

(Thousands of U.S. dollars)

Actuarial valuation date	(a) Actuarial value of assets	(b) Actuarial accrued liability (AAL)	(b)-(a) Unfunded AAL (UAAL)	(a/b) Funded ratio	Covered payroll	UAAL as a percent of covered payroll
August 31, 2016	$ 131,868	489,725	357,857	26.9%	112,956	316.8%
August 31, 2015	104,318	505,434	401,116	20.6	114,074	351.6
August 31, 2014	90,838	450,289	359,451	20.2	115,174	312.1

See paragraph on Required Supplementary Information included in independent auditor’s report.

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THE NATIONAL CONSTITUTION CENTER

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Statistical Section

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PHILADELPHIA GAS WORKS

Statistical Section

Description of Schedules

August 31, 2016

This section of the Company's comprehensive annual financial report presents comparative information in order to better understand the financial statements, note disclosures, and required supplementary information and to more fully comprehend the Company's overall financial health.

Financial Trends

These schedules contain trend information to help the reader understand how the Company's financial performance and well being have changed over time.

Revenue Capacity

These schedules contain information to help the reader assess the Company's revenue.

Debt Capacity

These schedules present information to help the reader assess the affordability of the Company's current levels of outstanding debt and its ability to issue additional debt in the future.

Demographic and Economic Information

These schedules offer demographic and economic indicators to help the reader understand the environment within which the Company's financial activities take place.

Operating Information

These schedules contain service and infrastructure data to help the reader understand how the information in the Company's financial report relates to the services the Company provides and the activities it performs.

Sources

Unless otherwise noted, the information in these schedules is derived from the audited financial statements for the relevant year.

PHILADELPHIA GAS WORKS
(A Component Unit of the City of Philadelphia)
Balance Sheets
Fiscal Years 2007 through 2016
(Thousands of US dollars)

Assets	**2016**	**2015**	**2014**
Current assets:			
Cash and cash equivalents	91,743	114,327	105,734
Cash designated for capital expenditures	-	-	10,000
Accounts receivable (net of provision for uncollectible accounts)	73,563	86,853	101,457
Gas inventories, materials, and supplies	47,891	50,908	69,989
Capital improvement fund	-	-	-
Workers' compensation escrow fund	2,603	2,597	2,597
Health insurance escrow fund	-	3,223	3,223
Other current assets and deferred debits	31,017	13,596	19,221
Total current assets	246,817	271,504	312,221
Non current assets			
Utility plant, at original cost:			
In service	2,178,632	2,093,112	2,018,234
Under construction	73,531	64,254	57,206
Total	2,252,163	2,157,366	2,075,440
Less accumulated depreciation	967,353	924,996	881,888
Utility plant, net	1,284,810	1,232,370	1,193,552
Unamortized bond issuance costs * (1)	512	3,473	14,136
Unamortized losses on reacquired debt	-	-	-
Sinking fund, revenue bonds	86,652	90,141	105,909
City of Philadelphia	-	-	-
Other assets and deferred debits	34,789	37,646	37,528
Total non current assets	1,406,763	1,363,630	1,351,125
Total assets	1,653,580	1,635,134	1,663,346
Deferred outflows of resources (3)			
Accumulated fair value of hedging derivatives	14,763	20,948	18,879
Unamortized losses on reacquired debt (1)	57,175	37,471	37,051
Deferred outflows related to pension (2)	88,043	78,128	46,131
Total deferred outflows of resources	159,981	136,547	102,061
Total assets and deferred outflows of resources	1,813,561	1,771,681	1,765,407

* For Fiscal Years 2016, 2015, 2014, 2013 and 2012 this category includes only bond insurance costs.

(1) During FY 2013, the Company implemented GASB Statement No. 65, *Items Previously Reported as Assets and Liabilities* , that amends or supersedes the accounting and financial reporting guidance for certain items previously required to be reported as assets or liabilities. The objective is to either properly classify certain items that were previously reported as assets and liabilities as deferred outflows of resources or deferred inflows of resources or recognize certain items that were previously reported as assets and liabilities as outflows of resources (expenses) or inflows of resources (revenues). This change was retroactive to FY 2012.

(2) During FY 2015, the Company implemented GASB Statement No. 68, Accounting and Financial Reporting *for Pensions - an Amendment of GASB Statement No. 27, that improves accounting and financial reporting by state and local governments for pensions, and GASB Statement No. 71, Pension Transition for Contributions Made Subsequent to the Measurement Date—an amendment of GASB Statement No. 68, to* address an issue regarding application of the transition provisions of Statement No. 68, Accounting and Financial Reporting for Pensions. This change was retroactive to FY 2014.

(3) During FY 2012, the Company implemented GASB Statement No. 63, Financial Reporting of Deferred Outflows of Resources, Deferred Inflows of Resources, and Net Position . Prior to implementation of this standard, net position was referred to as fund equity, and net investment in capital assets was referred to as excess (deficiency) of capital assets, net of related debt. This standard also established the financial reporting categories of deferred outflows of resources and deferred inflows of resources.

Source - PGW's Audited Financial Statements

	2013	2012	2011	2010	2009	2008	2007
	100,933	75,826	105,386	79,052	13,750	49,338	51,698
	-	-	-	-	-	-	-
	97,749	81,997	98,925	92,173	105,496	99,304	88,618
	80,234	81,086	85,993	103,133	125,023	187,539	147,770
	44,055	88,838	122,332	170,809	62,714	111,207	172,134
	2,597	2,597	2,596	2,595	2,593	2,383	1,924
	3,223	3,222	-	-	-	-	-
	16,196	26,939	35,523	27,212	4,895	5,626	5,615
	344,987	360,505	450,755	474,974	314,471	455,397	467,759
	1,951,546	1,894,129	1,856,303	1,794,277	1,754,297	1,685,593	1,633,300
	44,409	53,851	40,555	46,339	30,953	46,969	48,013
	1,995,955	1,947,980	1,896,858	1,840,616	1,785,250	1,732,562	1,681,313
	840,968	822,330	785,780	746,607	708,783	670,467	640,940
	1,154,987	1,125,650	1,111,078	1,094,009	1,076,467	1,062,095	1,040,373
	15,736	17,417	24,585	27,066	27,516	38,738	42,086
	-	-	62,039	70,873	79,945	47,902	53,359
	105,280	105,312	112,038	111,409	110,227	106,198	102,438
	-	-	-	-	-	-	643
	33,097	30,996	30,640	22,925	23,465	33,125	8,282
	1,309,100	1,279,375	1,340,380	1,326,282	1,317,620	1,288,058	1,247,181
	1,654,087	1,639,880	1,791,135 -	1,801,256 -	1,632,091 -	1,743,455 -	1,714,940
	12,059	34,712	25,360	25,906	-	-	-
	44,868	53,241	-	-	-	-	-
	-	-	-	-	-	-	-
	56,927	87,953	25,360	25,906	-	-	-
	1,711,014	1,727,833	1,816,495	1,827,162	1,632,091	1,743,455	1,714,940

(Continued)

PHILADELPHIA GAS WORKS
(A Component Unit of the City of Philadelphia)
Balance Sheets
Fiscal Years 2007 through 2016
(Thousands of US dollars)

Fund Equity and Liabilities	**2016**	**2015**	**2014**
Current liabilities:			
Notes payable	71,000	30,000	-
Current portion of revenue bonds	44,803	43,030	53,227
Note payable – City Loan	-	-	-
Accounts payable	55,870	56,027	58,888
Customer deposits	3,308	2,858	2,245
Other current liabilities and deferred credits	13,791	14,091	19,321
Accrued accounts:			
Interest, taxes, and wages	6,417	10,051	14,646
Distribution to the City	3,000	3,000	3,000
Total current liabilities	198,189	159,057	151,327
Non current liabilities:			
Long-term revenue bonds	881,620	914,719	980,749
Other liabilities and deferred credits	149,621	168,399	179,265
Net pension liability (2)	296,093	239,869	164,256
Total non current liabilities	1,327,334	1,322,987	1,324,270
Total liabilities	1,525,523	1,482,044	1,475,597
Deferred Inflows of Resources			
Deferred inflows related to pension (2)	-	11,653	31,808
Total liabilities and deferred inflows of resources	1,525,523	1,493,697	1,507,405
Net position			
Excess (deficiency) of net investment in capital assets	415,561	274,621	159,576
Restricted (debt service)	89,255	95,962	111,729
Unrestricted (1) (2)	(216,778)	(92,599)	(13,303)
Total net position	288,038	277,984	258,002
Total liabilities and net position	1,813,561	1,771,681	1,765,407

(1) During FY 2013, the Company implemented GASB Statement No. 65, *Items Previously Reported as Assets and Liabilities*, that amends or supersedes the accounting and financial reporting guidance for certain items previously required to be reported as assets or liabilities. The objective is to either properly classify certain items that were previously reported as assets and liabilities as deferred outflows of resources or deferred inflows of resources or recognize certain items that were previously reported as assets and liabilities as outflows of resources (expenses) or inflows of resources (revenues). This change was retroactive to FY 2012.

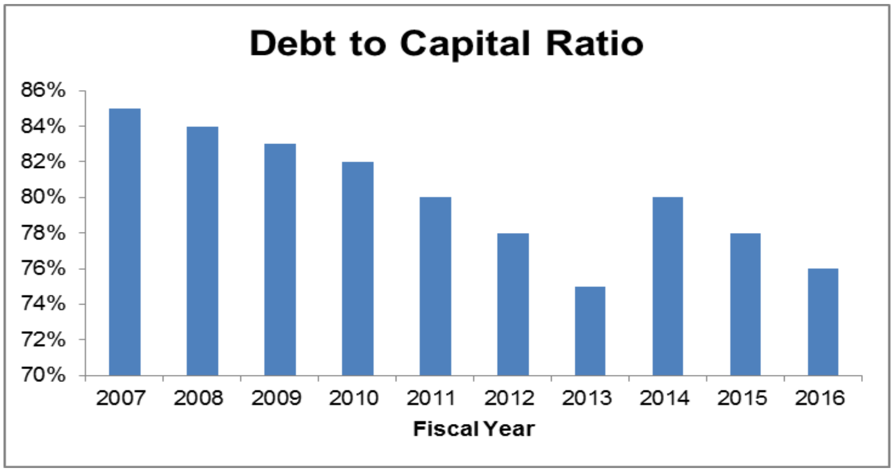
(2) During FY 2015, the Company implemented GASB Statement No. 68, Accounting and Financial Reporting *for Pensions - an Amendment of GASB Statement No. 27, that improves accounting and financial reporting by state and local governments for pensions, and GASB Statement No. 71, Pension Transition for Contributions Made Subsequent to the Measurement Date—an amendment of GASB Statement No. 68, to* address an issue regarding application of the transition provisions of Statement No. 68, Accounting and Financial Reporting for Pensions. This change was retroactive to FY 2014.

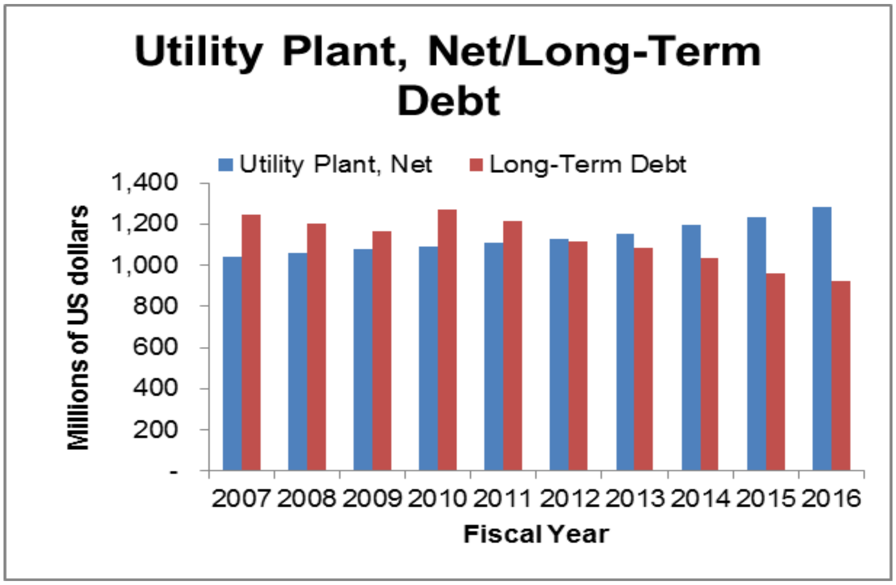
(3) During FY 2012, the Company implemented GASB Statement No. 63, Financial Reporting of Deferred Outflows of Resources, Deferred Inflows of Resources, and Net Position . Prior to implementation of this standard, net position was referred to as fund equity, and net investment in capital assets was referred to as excess (deficiency) of capital assets, net of related debt. This standard also established the financial reporting categories of deferred outflows of resources and deferred inflows of resources.

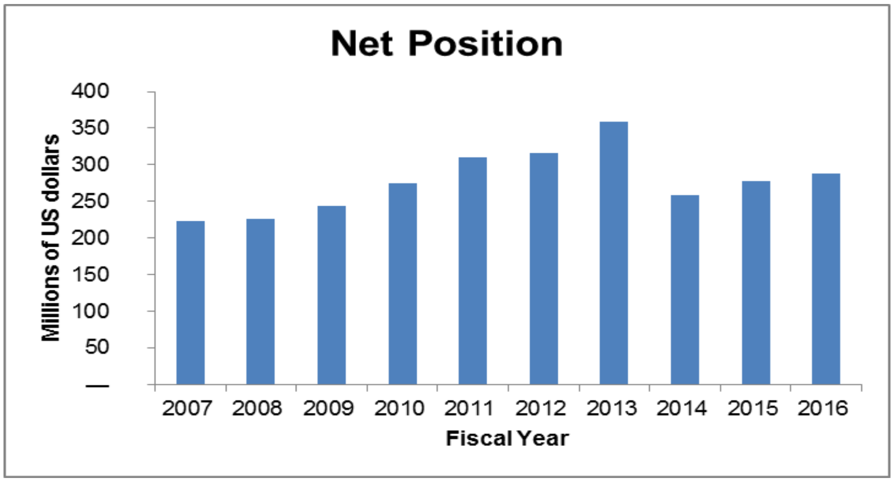
Source - PGW's Audited Financial Statements

2013	2012	2011	2010	2009	2008	2007
-	-	-	-	-	90,000	51,600
52,406	30,545	50,549	42,537	48,175	76,030	43,995
-	-	-	-	-	-	43,000
59,379	57,127	55,893	59,303	46,205	67,508	60,615
2,305	2,449	2,869	3,998	4,224	7,325	9,049
9,107	10,265	12,098	12,185	16,203	32,581	15,524
14,823	15,555	17,476	16,743	15,948	15,821	15,088
3,000	3,000	3,000	3,000	3,000	3,000	3,000
141,020	118,941	141,885	137,766	133,755	292,265	241,871
1,033,976	1,086,502	1,166,992	1,224,987	1,114,488	1,127,163	1,201,792
177,431	206,445	197,878	189,974	140,229	97,619	47,976
-	-	-	-	-	-	-
1,211,407	1,292,947	1,364,870	1,414,961	1,254,717	1,224,782	1,249,768
1,352,427	1,411,888	1,506,755	1,552,727	1,388,472	1,517,047	1,491,639
-	-	-	-	-	-	-
1,352,427	1,411,888	1,506,755	1,552,727	1,388,472	1,517,047	1,491,639
112,660	97,442	15,869	(2,706)	1,019	(4,466)	(5,690)
111,100	111,131	114,634	114,004	112,820	108,581	105,005
134,827	107,372	179,237	163,137	129,780	122,293	123,986
358,587	315,945	309,740	274,435	243,619	226,408	223,301
1,711,014	1,727,833	1,816,495	1,827,162	1,632,091	1,743,455	1,714,940

PHILADELPHIA GAS WORKS
(A Component Unit of the City of Philadelphia)
Debt to Captail Ratio, Utility Plant, Net vs. Long-Term Debt, and Net Position
Fiscal Years 2007 through 2016







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PHILADELPHIA GAS WORKS
(A Component Unit of the City of Philadelphia)
Statements of Revenues and Expenses
Fiscal Years 2007 through 2016
(Thousands of US dollars)

	2016	2015	2014
Operating revenues:			
Gas revenues:			
Nonheating	21,873	30,753	39,610
Gas transport service	41,008	39,588	41,217
Heating	509,467	605,686	655,311
Total gas revenues	572,348	676,027	736,138
Appliance and other revenues	7,961	8,727	8,317
Other operating revenues	10,928	12,493	14,681
Total operating revenues	591,237	697,247	759,136
Operating expenses:			
Natural gas	146,524	252,169	304,051
Gas processing	17,948	18,180	19,637
Field services	36,277	36,874	37,577
Distribution	37,173	38,629	36,929
Collection and account management	10,913	11,192	11,273
Provision for uncollectible accounts	27,133	34,833	38,848
Customer services	12,432	12,262	11,187
Marketing	3,671	6,956	7,783
Administrative and general	99,652	93,347	85,872
Pensions (2)	62,336	43,748	27,214
Other postemployment benefits	9,929	6,726	11,228
Taxes	7,521	7,823	7,687
Total operating expenses before depreciation	471,509	562,739	599,286
Depreciation	51,679	49,371	47,428
Less depreciation expense included in operating expenses above	6,231	5,584	5,771
Net depreciation	45,448	43,787	41,657
Total operating expenses	516,957	606,526	640,943
Operating income	74,280	90,721	118,193
Interest and other income	1,393	3,784	3,597
Income before interest expense	75,673	94,505	121,790
Interest expense:			
Long-term debt	40,296	45,756	48,261
Other	8,443	11,548	9,380
Allowance for funds used during construction	(1,120)	(781)	(506)
Total interest expense	47,619	56,523	57,135
Excess (deficiency) of revenues over (under) expenses prior to City Payment	28,054	37,982	64,655
Distribution to the City of Philadelphia	(18,000)	(18,000)	(18,000)
Grant back of distribution from the City of Philadelphia	-	-	-
Excess (deficiency) of revenues over (under) expenses (2)	10,054	19,982	46,655
Net position, beginning of the year (1) (2)	277,984	258,002	211,347
Net position, end of the year (2)	288,038	277,984	258,002

(1) During FY 2013, the Company implemented GASB Statement No. 65, Items Previously Reported as Assets and Liabilities , that amends or supersedes the accounting and financial reporting guidance for certain items previously required to be reported as assets or liabilities. The objective is to either properly classify certain items that were previously reported as assets and liabilities as deferred outflows of resources or deferred inflows of resources or recognize certain items that were previously reported as assets and liabilities as outflows of resources (expenses) or inflows of resources (revenues). This change was retroactive to FY 2012.

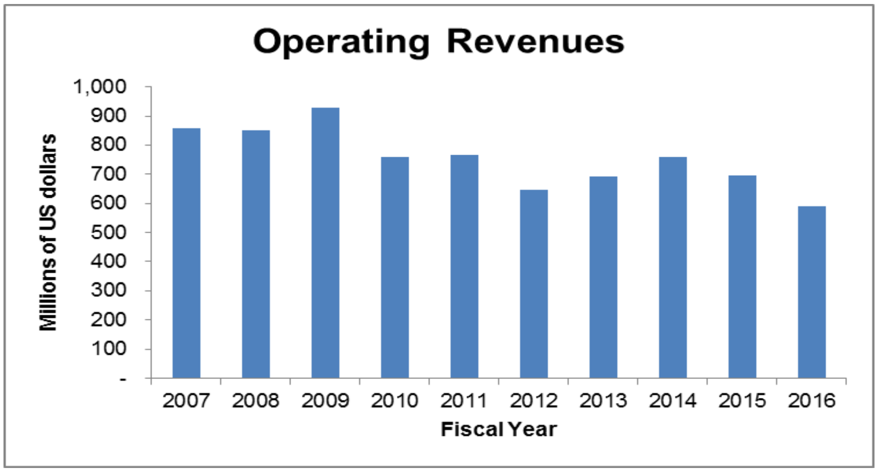
(2) During FY 2015, the Company implemented GASB Statement No. 68, *Accounting and Financial Reporting for Pensions - an Amendment of GASB Statement No. 27, that improves accounting and financial reporting* by state and local governments for pensions, and GASB Statement No. 71, Pension Transition for Contributions Made Subsequent to the Measurement Date—an amendment of GASB Statement No. 68, to address an issue regarding application of the transition provisions of Statement No. 68, Accounting and Financial Reporting for Pensions. This change was retroactive to FY 2014.

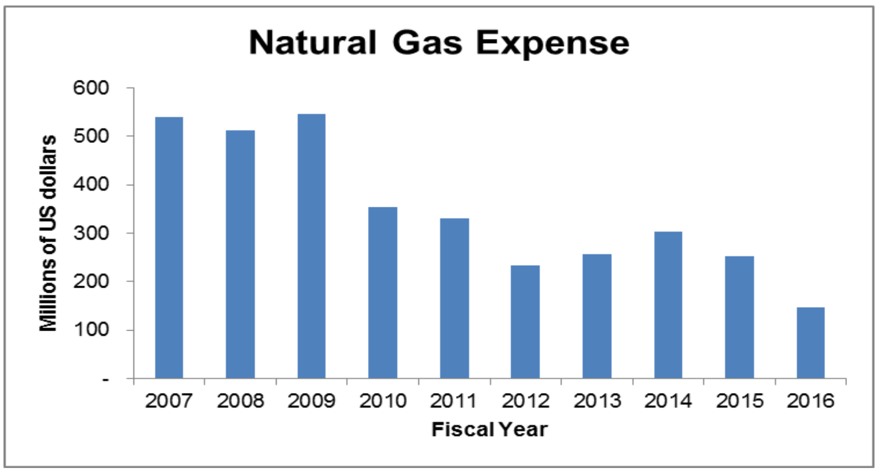
Source - PGW's Audited Financial Statements

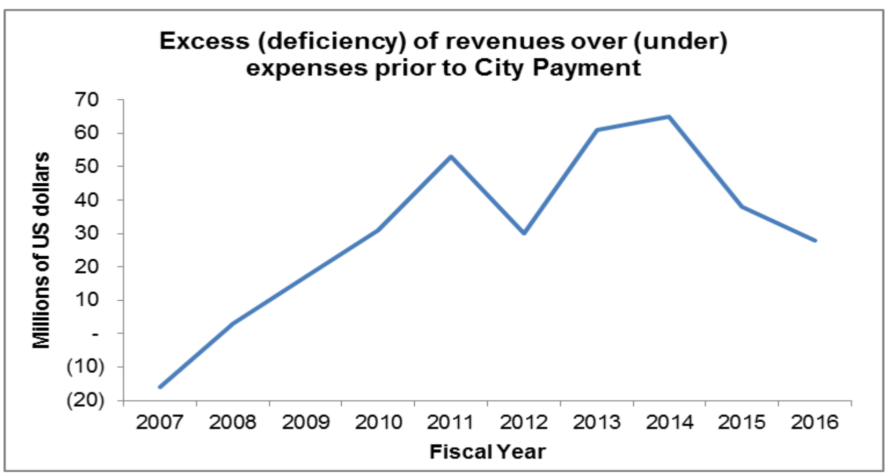
2013	2012	2011	2010	2009	2008	2007
35,262	37,054	51,437	51,343	67,295	78,687	90,798
37,078	29,324	28,700	26,860	24,913	19,215	12,949
602,814	562,009	669,131	664,139	818,249	733,526	736,358
675,154	628,387	749,268	742,342	910,457	831,428	840,105
8,333	8,240	8,400	8,959	9,311	8,607	9,398
9,984	8,356	8,611	7,931	9,673	9,592	9,848
693,471	644,983	766,279	759,232	929,441	849,627	859,351
255,501	233,713	330,932	354,004	545,846	511,976	539,300
17,592	15,640	16,097	14,952	16,779	14,436	16,240
34,926	33,883	33,950	34,026	37,727	37,126	36,100
30,259	27,750	27,990	23,426	21,059	17,319	17,119
11,297	11,491	11,765	15,266	16,248	15,447	15,221
39,971	36,702	36,027	35,000	42,000	37,000	40,000
11,102	11,946	12,532	13,030	12,897	12,305	11,783
6,789	6,664	4,378	3,900	3,436	2,628	2,418
78,206	81,161	76,850	71,620	63,820	60,716	56,819
23,614	23,972	22,597	24,633	15,425	14,258	26,421
16,492	20,119	22,472	27,269	25,952	25,834	15,217
7,220	7,122	7,135	6,990	6,588	5,677	6,730
532,969	510,163	602,725	624,116	807,777	754,722	783,368
45,912	45,045	43,629	43,168	42,200	42,868	39,708
4,870	4,870	4,714	4,690	4,419	3,344	3,328
41,042	40,175	38,915	38,478	37,781	39,524	36,380
574,011	550,338	641,640	662,594	845,558	794,246	819,748
119,460	94,645	124,639	96,638	83,883	55,381	39,603
1,147	4,659	4,348	5,301	12,240	15,732	13,073
120,607	99,304	128,987	101,939	96,123	71,113	52,676
49,655	53,012	57,225	52,527	63,602	56,075	52,146
10,740	16,824	18,884	18,986	15,558	12,269	17,042
(430)	(292)	(427)	(390)	(248)	(338)	(408)
59,965	69,544	75,682	71,123	78,912	68,006	68,780
60,642	29,760	53,305	30,816	17,211	3,107	(16,104)
(18,000)	(18,000)	(18,000)	(18,000)	(18,000)	(18,000)	(18,000)
-	-	-	18,000	18,000	18,000	18,000
42,642	11,760	35,305	30,816	17,211	3,107	(16,104)
315,945	304,185	274,435	243,619	226,408	223,301	239,405
358,587	315,945	309,740	274,435	243,619	226,408	223,301

PHILADELPHIA GAS WORKS
(A Component Unit of the City of Philadelphia)

Operating Revenues, Natural Gas Expense, and Excess (deficiency) of revenues over (under) expenses, prior to City Payment
Fiscal Years 2007 through 2016







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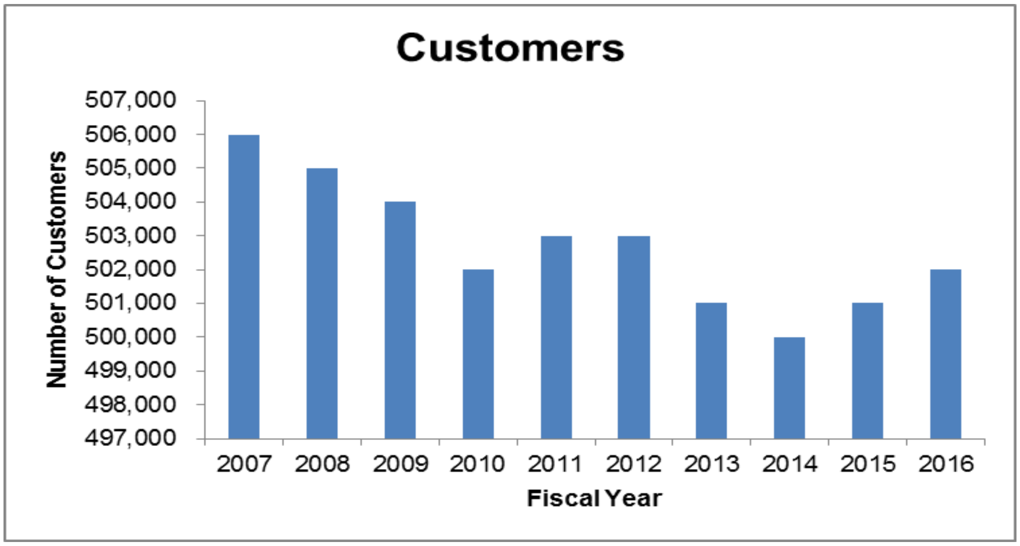
PHILADELPHIA GAS WORKS
(A Component Unit of the City of Philadelphia)
Average Number of Customers Billed by System
Fiscal Years 2007 through 2016

	2016	2015	2014	2013	2012
Residential	476,300	475,300	474,300	475,300	477,300
Commercial	25,000	25,000	25,000	25,000	25,000
Industrial	700	700	700	700	700
Total	502,000	501,000	500,000	501,000	503,000

Source - PGW Records



2011	2010	2009	2008	2007
477,300	476,200	478,200	479,200	480,100
25,000	25,000	25,000	25,000	25,000
700	800	800	800	900
503,000	502,000	504,000	505,000	506,000

PHILADELPHIA GAS WORKS
(A Component Unit of the City of Philadelphia)
Operating Revenues
Fiscal Years 2007 through 2016
(Thousands of US dollars)

	2016	2015	2014	2013
Firm non-heat	20,765	27,592	30,324	31,401
Interruptible gas sales	346	3,672	9,068	4,703
Billed non-heating	21,111	31,264	39,392	36,104
GCR non-heating adjustment	762	(511)	218	(841)
Total non-heating	21,873	30,753	39,610	35,263
Billed heating	454,852	630,286	660,942	605,761
GCR heating adjustment	17,424	(12,124)	6,174	(12,407)
Total billed heating	472,276	618,162	667,116	593,354
Weather normalization adjustment (WNA)	39,021	(10,372)	(11,810)	8,060
Total heating	511,297	607,790	655,306	601,414
Total gas sold	533,170	638,543	694,916	636,677
Firm transportation (FT) non-heat (1)	4,518	4,953	5,671	5,194
FT heating	22,789	22,468	23,330	19,665
WNA - FT	2,458	(374)	(488)	331
Total heating FT	25,247	22,094	22,842	19,996
Total FT	29,765	27,047	28,513	25,190
Unbilled adjustment	(1,830)	(2,105)	5	1,398
GTS: transportation	1,231	1,252	1,173	1,050
GTS - customer/customer choice	8,784	10,285	10,278	9,372
GTS - supplier/customer choice	11	11	11	478
GTS - firm supplier	1,217	994	1,242	989
Total gas revenues	572,348	676,027	736,138	675,154

(1) The firm transportation (FT) program began in FY 2007.

Source - PGW Records

2012	2011	2010	2009	2008	2007
33,282	36,779	37,932	50,172	52,528	61,729
3,338	14,431	12,503	16,493	26,679	31,439
36,620	51,210	50,435	66,665	79,207	93,168
434	228	908	631	(521)	(2,037)
37,054	51,438	51,343	67,296	78,686	91,131
519,950	659,681	630,970	810,704	731,942	756,032
4,244	5,360	16,742	8,991	(8,407)	(23,948)
524,194	665,041	647,712	819,695	723,535	732,084
44,016	1,696	12,970	445	11,923	6,438
568,210	666,737	660,682	820,140	735,458	738,522
605,264	718,175	712,025	887,436	814,144	829,653
3,861	4,582	3,306	2,857	2,120	928
14,037	14,541	13,254	12,265	8,205	3,111
1,412	128	455	60	315	60
15,449	14,669	13,709	12,325	8,520	3,171
19,310	19,251	17,015	15,182	10,640	4,099
(6,201)	2,393	3,457	(1,893)	(1,931)	(2,497)
1,086	1,147	1,928	1,948	2,228	2,480
7,955	8,333	7,421	6,813	6,177	6,017
170	(790)	(105)	842	85	220
803	759	601	129	85	133
628,387	749,268	742,342	910,457	831,428	840,105

PHILADELPHIA GAS WORKS
(A Component Unit of the City of Philadelphia)
Sales Volumes
Fiscal Years 2007 through 2016
(Sales in Mcf)*

	2016	2015	2014	2013
Firm non-heat	1,568,529	1,912,025	1,955,220	2,003,583
Interruptible gas sales	37,909	514,110	1,096,381	890,383
Billed non-heating	1,606,438	2,426,135	3,051,601	2,893,966
Total non-heating	1,606,438	2,426,135	3,051,601	2,893,966
Billed heating	36,115,312	46,504,401	46,577,983	42,741,706
Total billed heating	36,115,312	46,504,401	46,577,983	42,741,706
Total heating	36,115,312	46,504,401	46,577,983	42,741,706
Total gas sold	37,721,750	48,930,536	49,629,584	45,635,672
Firm transportation (FT) non-heat (1)	667,248	764,344	795,971	701,712
FT heating (1)	3,456,099	3,529,555	3,291,193	2,725,563
Total heating FT (1)	3,456,099	3,529,555	3,291,193	2,725,563
Total FT (1)	4,123,347	4,293,899	4,087,164	3,427,275
Unbilled adjustment	33,433	19,916	95,656	62,646
GTS: transportation	12,796,900	13,166,995	12,069,664	10,708,926
GTS - customer/customer choice	11,303,602	12,837,207	13,201,076	12,346,548
Utility Use	233,115	343,324	350,974	410,193
Unaccounted for gas	1,747,806	2,445,717	1,051,828	1,492,946
Total sendout	67,959,953	82,037,594	80,485,946	74,084,206
Unaccounted for gas as a % of total sendout	2.6%	3.0%	1.3%	2.0%

(1) The firm transportation (FT) program began in FY 2007.
* Mcf = Thousand cubic feet

Source - PGW Records

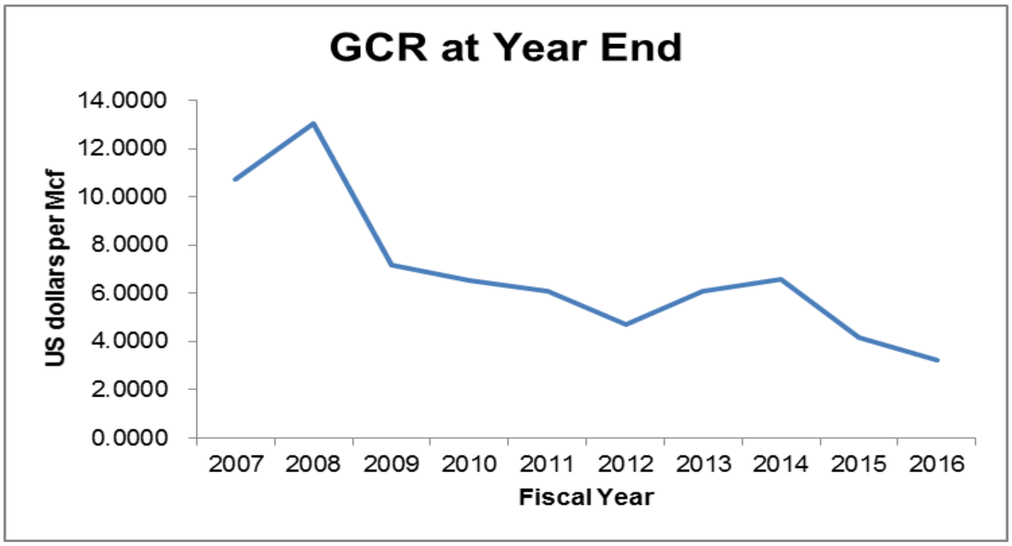
2012	2011	2010	2009	2008	2007
2,148,736	2,218,768	2,186,030	2,440,758	2,585,001	3,104,220
192,058	1,004,185	1,049,318	1,170,128	1,790,721	2,704,526
2,340,794	3,222,953	3,235,348	3,610,886	4,375,722	5,808,746
2,340,794	3,222,953	3,235,348	3,610,886	4,375,722	5,808,746
36,196,469	45,795,915	42,604,640	45,584,417	42,940,365	44,812,203
36,196,469	45,795,915	42,604,640	45,584,417	42,940,365	44,812,203
36,196,469	45,795,915	42,604,640	45,584,417	42,940,365	44,812,203
38,537,263	49,018,868	45,839,988	49,195,303	47,316,087	50,620,949
542,271	629,683	456,675	392,965	333,800	134,583
1,941,019	2,038,726	1,848,085	1,700,319	1,272,881	434,865
1,941,019	2,038,726	1,848,085	1,700,319	1,272,881	434,865
2,483,290	2,668,409	2,304,760	2,093,284	1,606,681	569,448
(633,531)	204,694	276,161	(12,364)	61,729	(130,643)
11,429,993	12,024,712	12,390,748	12,651,292	9,928,058	7,144,953
10,459,723	10,581,753	8,440,368	7,879,560	7,497,327	5,424,466
394,574	465,505	632,040	737,720	716,683	859,493
2,067,268	2,563,662	2,097,817	2,357,825	1,476,092	2,552,999
64,738,580	77,527,603	71,981,882	74,902,620	68,602,657	67,041,665
3.2%	3.3%	2.9%	3.1%	2.2%	3.8%

PHILADELPHIA GAS WORKS
(A Component Unit of the City of Philadelphia)
Gas Cost Rate
Fiscal Years 2007 through 2016
(US dollars)

	2016	2015	2014	2013
June 1	3.2179	4.1721	6.5642	6.0709
March 1	3.4946	4.7059	6.0016	6.3991
January 1				
December 1	3.6934	5.9976	5.4473	5.7323
October 7				
September 1	4.0724	5.8670	5.4259	5.2247

Shown in dollars per thousand cubic feet

Source - PGW Records



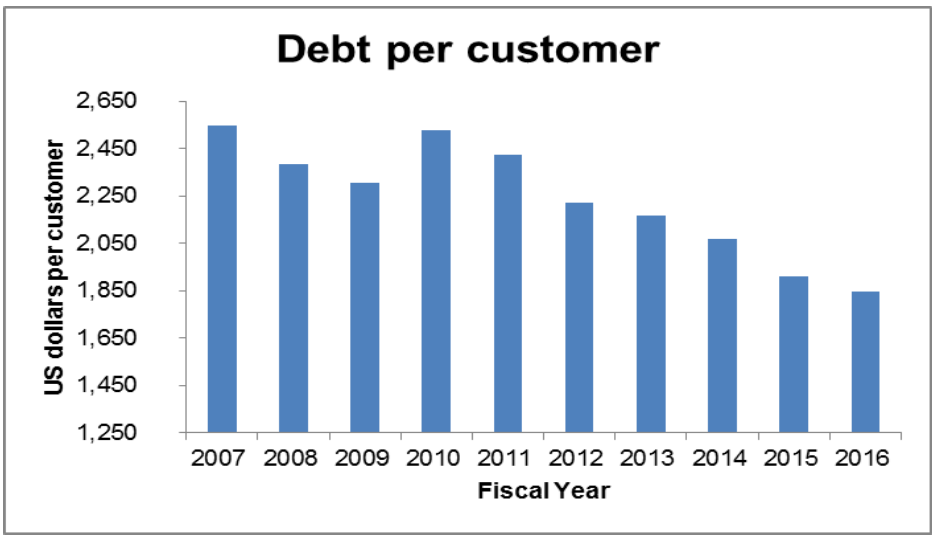
2012	2011	2010	2009	2008	2007
4.7129	6.0930	6.5139	7.1815	13.0236	10.7251
4.9783	6.5400	7.3455	8.4192	10.7226	10.4338
			10.7007		
6.1270	6.2753	7.2497		10.5779	10.9119
6.0594	6.9050	7.0900	12.6527	10.1108	11.2558

PHILADELPHIA GAS WORKS
(A Component Unit of the City of Philadelphia)
Ratios of Outstanding Debt by Type
Fiscal Years 2007 through 2016
(Thousands of US dollars)

	Revenue Bonds	City Loan	Grand Total	Ratio to Operating Revenue	Operating Revenue	Number of Customers	Debt per Customer (1)
2016	926,423	-	926,423	157%	591,237	502,000	1,845
2015	957,749	-	957,749	137%	697,247	501,000	1,912
2014	1,033,976	-	1,033,976	136%	759,136	500,000	2,068
2013	1,086,382	-	1,086,382	157%	693,471	501,000	2,168
2012	1,117,047	-	1,117,047	173%	644,983	503,000	2,221
2011	1,217,541	-	1,217,541	159%	766,279	503,000	2,421
2010	1,267,524	-	1,267,524	167%	759,232	502,000	2,525
2009	1,162,663	-	1,162,663	125%	929,441	504,000	2,307
2008	1,203,193	-	1,203,193	142%	849,627	505,000	2,383
2007	1,245,787	43,000	1,288,787	150%	859,351	506,000	2,547

(1) Per customer data in whole dollars

Source - PGW's Audited Financial Statements and PGW Records



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PHILADELPHIA GAS WORKS
(A Component Unit of the City of Philadelphia)
Debt Service
Through Fiscal Year 2040

Year	5th Series Variable	7th Series New Money	7th Series Refunding	8th Series A	8th Series B	8th Series C
2017	174,000	230,750	521,375	8,251,600	1,061,156	1,050,090
2018	174,000	4,730,375	4,474,625	—	1,061,156	1,050,090
2019	174,000	—	4,525,250	—	1,061,156	1,050,090
2020	174,000	—	151,250	—	1,061,156	1,050,090
2021	174,000	—	151,250	—	1,061,156	1,050,089
2022	174,000	—	151,250	—	1,061,156	1,050,089
2023	174,000	—	151,250	—	1,061,156	1,050,089
2024	174,000	—	151,250	—	5,781,156	5,745,088
2025	174,000	—	151,250	—	5,963,158	5,928,999
2026	174,000	—	151,250	—	6,021,008	5,983,831
2027	174,000	—	113,438	—	6,458,973	6,424,020
2028	174,000	—	1,512,563	—	6,481,930	6,444,331
2029	174,000	—	1,629,750	—	—	—
2030	174,000	—	—	—	—	—
2031	174,000	—	—	—	—	—
2032	174,000	—	—	—	—	—
2033	174,000	—	—	—	—	—
2034	174,000	—	—	—	—	—
2035	30,087,000	—	—	—	—	—
2036	—	—	—	—	—	—
2037	—	—	—	—	—	—
2038	—	—	—	—	—	—
2039	—	—	—	—	—	—
2040	—	—	—	—	—	—
TOTAL	33,219,000	4,961,125	13,835,751	8,251,600	38,134,317	37,876,896

Source - PGW Records

8th Series D	8th Series E	9th Series	10th Series	13th Series	Total 1998 Ordinance
1,595,846	1,063,893	3,376,350	7,503,294	29,995,050	11,876,995
1,595,846	1,063,893	6,821,350	6,757,494	28,467,050	27,792,325
1,595,846	1,063,893	6,820,775	6,018,244	26,941,250	32,458,825
1,595,846	1,063,893	6,816,775	5,274,994	25,404,500	37,530,450
1,595,846	1,063,893	6,819,025	4,529,494	28,528,500	33,514,950
1,595,846	1,063,893	6,821,225	3,784,706	27,042,000	34,156,700
1,595,845	1,063,893	6,820,975	3,050,456	26,250,750	34,763,575
8,640,845	5,783,893	4,327,800	2,299,706	24,696,250	17,500,075
8,910,592	5,965,423	2,242,800	1,560,706	17,681,250	19,635,700
8,994,045	6,022,765	2,242,800	1,376,100	17,295,250	19,674,450
9,647,650	6,460,195	2,242,800	—	13,517,000	19,667,075
9,668,553	6,482,554	2,242,800	—	13,525,500	18,346,825
—	—	2,242,800	—	13,524,250	18,343,700
—	—	2,242,800	—	13,522,500	18,348,825
—	—	2,242,800	—	13,524,000	18,345,575
—	—	2,242,800	—	13,517,250	18,347,325
—	—	2,242,800	—	5,121,250	18,347,200
—	—	2,242,800	—	5,124,000	18,353,200
—	—	2,242,800	—	—	10,655,700
—	—	9,937,800	—	—	10,657,300
—	—	9,933,813	—	—	10,658,600
—	—	9,933,825	—	—	10,653,900
—	—	9,936,526		—	—
—	—	9,935,600		—	—
57,032,606	38,162,081	122,972,639	42,155,194	343,677,600	459,629,270

PHILADELPHIA GAS WORKS
(A Component Unit of the City of Philadelphia)
Debt Service Coverage
Fiscal Years 2007 through 2016
(Thousands of US dollars)

	2016	2015	2014	2013
Funds Provided				
Total gas revenues	572,348	676,027	736,138	675,154
Other operating revenues	18,889	21,220	22,998	18,317
Total operating revenues	591,237	697,247	759,136	693,471
Other income increase restricted funds	1,416	10,836	4,079	196
City grant	-	-	-	-
AFUDC (Interest)	1,120	781	506	430
Total funds provided	593,773	708,864	763,721	694,097
Funds Applied				
Fuel costs	146,524	252,169	304,051	255,501
Other operating costs	370,433	354,357	336,892	318,510
Total operating expenses	516,957	606,526	640,943	574,011
Less: non-cash expenses	89,059	74,535	53,039	48,103
Total funds applied	427,898	531,991	587,904	525,908
Funds available to cover debt service	165,875	176,873	175,817	168,189
Funds available excluding lease costs	165,875	176,873	175,817	168,189
1975 ordinance bonds debt service	-	26,904	28,592	30,163
Debt service coverage 1975 bonds	-	6.57	6.15	5.58
Net available after prior debt service	165,875	149,969	147,225	138,026
Net available after prior capital leases	165,875	149,969	147,225	138,026
1998 ordinance bonds debt service	77,867	70,139	69,749	47,668
Debt service coverage 1998 bonds	2.13	2.14	2.11	2.90
Net available after 1998 debt service	88,008	79,830	77,476	90,358
1998 ordinance subordinate bond debt service	-	-	-	-
Debt service coverage subordinate bonds	-	-	-	-

Source - PGW's Audited Financial Statements and PGW Records

2012	2011	2010	2009	2008	2007
628,387	749,268	742,342	910,457	831,428	840,105
16,596	17,011	16,890	18,984	18,199	19,246
644,983	766,279	759,232	929,441	849,627	859,351
8,311	13,175	3,660	12,434	3,881	6,423
-	-	18,000	18,000	18,000	18,000
292	427	390	247	338	408
653,586	779,881	781,282	960,122	871,846	884,182
233,713	330,932	354,004	545,846	511,976	539,300
316,625	310,708	308,590	299,712	282,270	280,448
550,338	641,640	662,594	845,558	794,246	819,748
47,619	47,854	70,404	67,897	68,898	66,246
502,719	593,786	592,190	777,661	725,348	753,502
150,867	186,095	189,092	182,462	146,498	130,680
150,867	186,095	189,092	182,462	146,498	130,680
31,754	30,691	30,101	32,313	34,225	35,359
4.75	6.06	6.28	5.65	4.28	3.70
119,113	155,404	158,991	150,149	112,273	95,321
119,113	155,404	158,991	150,149	112,273	95,321
67,874	72,274	65,095	70,569	59,695	47,611
1.75	2.15	2.44	2.13	1.88	2.00
51,239	83,130	93,896	79,580	52,578	47,710
-	1,988	1,986	1,990	1,986	1,987
-	41.82	47.28	39.99	26.47	24.01

PHILADELPHIA GAS WORKS
(A Component Unit of the City of Philadelphia)
Demographic and Economic Statistics
Principal Employers
Current Calendar Year and Nine Years Ago

2015	2006
Children's Hospital of Philadelphia	Albert Einstein Medical
City of Philadelphia	Children's Hospital of Philadelphia
Comcast Cablevision of Willow Grove Inc	City of Philadelphia
Drexel University	School District of Philadelphia
School District of Philadelphia	SEPTA
SEPTA	Temple University
Temple University	Tenet Healthsystem Philadelphia Inc
Thomas Jefferson University Hospitals	Thomas Jefferson University Hospitals
University Of Pennsylvania (College)	University Of Pennsylvania (College)
University Of Pennsylvania (Hospital)	University Of Pennsylvania (Hospital)

Listed Alphabetically
Source - City of Philadelphia

PHILADELPHIA GAS WORKS
(A Component Unit of the City of Philadelphia)
Demographic and Economic Statistics
Calendar Years 2006 through 2015

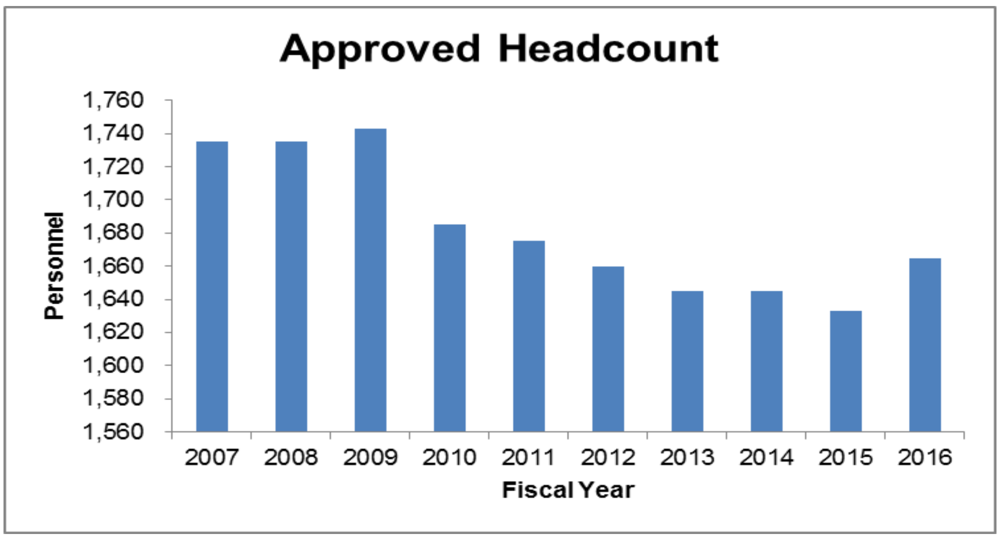
Calendar Year	Population (1)	Personal Income (Thousands of US Dollars) (2)	Per Capita Personal Income (US Dollars)	Unemployment Rate (3)
2015	1,567,442	77,903,831	49,701	6.9%
2014	1,560,297	66,495,223	42,617	8.0%
2013	1,553,165	65,473,002	42,155	10.0%
2012	1,547,607	64,151,742	41,452	10.5%
2011	1,538,567	62,632,520	40,708	10.8%
2010	1,526,006	56,970,074	37,333	10.8%
2009	1,547,297	54,061,223	34,939	9.6%
2008	1,540,351	54,262,716	35,228	7.1%
2007	1,530,031	50,672,227	33,118	6.0%
2006	1,520,251	47,566,075	31,288	6.2%

Sources:
(1) US Census Bureau
(2) US Department of Commerce, Bureau of Economic Analysis
(3) US Department of Labor, Bureau of Labor Statistics

PHILADELPHIA GAS WORKS
(A Component Unit of the City of Philadelphia)
Budgeted Full-Time Personnel by Department
Fiscal Years 2007 through 2016

Departments	**2016**	**2015**	**2014**	**2013**
President & Chief Executive Officer	2	3	3	3
Chief Operating Officer	2	2	2	2
Chief Financial Officer	2	2	2	2
Gas processing	116	119	123	125
Field services	374	372	372	366
Distribution	480	472	472	468
Collection	29	31	31	31
Customer service	170	176	189	190
Marketing	32	44	44	46
Administrative and general	484	449	442	445
PGW Total	1,691	1,670	1,680	1,678
Personnel savings	(31)	(42)	(40)	(38)
Philadelphia Gas Commission	5	5	5	5
Grand Total	1,665	1,633	1,645	1,645

Source - PGW's Annual Operating Budget



2012	2011	2010	2009	2008	2007
3	2	2	2	2	2
2	3	2	2	2	7
2	-	-	-	-	-
119	119	119	123	133	133
371	371	341	342	342	342
467	467	467	467	470	470
35	36	91	104	110	92
198	207	207	208	194	214
41	34	34	30	30	30
454	463	459	460	465	463
1,692	1,702	1,722	1,738	1,748	1,753
(37)	(32)	(42)	-	(18)	(23)
5	5	5	5	5	5
1,660	1,675	1,685	1,743	1,735	1,735

PHILADELPHIA GAS WORKS
(A Component Unit of the City of Philadelphia)
Operating Indicators
Fiscal Years 2007 through 2016

	2016	2015	2014
Financial			
Debt service ratio (1975 Ordinance)	N/A	6.57	6.15
Debt service ratio (1998 Ordinance)	2.13	2.14	2.11
Debt to total capital ratio	76.3%	77.5%	80.0%
Bad debt as a % of revenue	4.6%	5.0%	5.1%
Bad debt reserve as a % of accounts receivable	50.2%	54.0%	51.4%
Collection factor (receipts/billings)	97.7%	97.1%	95.0%
Cash balance (Thousands of US dollars)	91,743	114,327	105,734
Natural Gas (NG) storage (Thousands of US dollars)	38,556	40,791	60,089
Payroll			
Total payroll (Thousands of US dollars) (Includes Overtime)	112,556	113,675	115,174
Overtime (Thousands of US dollars)	11,125	11,824	13,629
Overtime as a % of Total Payroll	9.9%	10.4%	11.8%
Liquefied Natural Gas (LNG)			
LNG to storage (Mcf)*	2,233,463	2,043,392	1,821,935
LNG from storage (Mcf)	1,258,905	2,237,729	3,210,133
Net to (from) storage (Mcf)	974,558	(194,337)	(1,388,198)
Off-system sales contributed to GCR (Thousands of US dollars)	-	-	321
Natural Gas Cost			
Gas utilized (Mcf)	40,301,447	50,562,653	52,961,786
Gas utilized (Thousands of US dollars)	146,515	252,158	304,040
Cost per Mcf ($)	3.64	4.99	5.74
Natural Gas Sales Information			
Firm gas sold (Mcf)	37,683,841	48,416,426	48,533,203
Interruptible gas sold (Mcf)	37,909	514,110	1,096,381
Total gas sold (Mcf)	37,721,750	48,930,536	49,629,584
Transportation gas - GTS (Mcf)	28,223,849	30,298,101	29,357,904
Other (Mcf)	2,014,354	2,808,957	1,498,458
Total gas sendout (Mcf)	67,959,953	82,037,594	80,485,946
Unaccounted for gas as a % of total gas sendout	2.6%	3.0%	2.0%
Transportation gas - GTS as a % of total gas sendout	41.5%	36.9%	36.5%
Firm gas sold as a % of total gas sold	99.9%	98.9%	97.8%
Degree Days			
Fiscal Year	3,356	4,444	4,405

* Mcf = Thousand cubic feet

Source - PGW Records

2013	2012	2011	2010	2009	2008	2007
5.58	4.75	6.06	6.28	5.65	4.28	3.70
2.90	1.75	2.15	2.44	2.13	1.88	2.00
75.2%	78.0%	79.7%	82.2%	82.7%	84.2%	84.8%
5.8%	5.7%	4.7%	4.6%	4.5%	4.4%	4.7%
51.9%	54.4%	50.3%	52.9%	53.8%	58.6%	62.9%
91.9%	96.6%	95.1%	98.7%	93.8%	95.5%	95.8%
100,933	75,826	105,386	79,052	13,750	49,338	51,698
70,638	73,086	78,579	96,097	117,889	179,750	138,388
110,120	106,308	106,125	106,003	107,918	105,596	106,018
9,495	7,948	9,700	8,494	10,171	10,115	10,684
8.6%	7.5%	9.1%	8.0%	9.4%	9.6%	10.1%
1,677,268	1,422,440	1,286,742	1,354,605	562,629	2,034,715	1,831,202
1,537,601	974,238	1,428,896	1,117,628	1,545,034	1,280,180	1,948,310
139,667	448,202	(142,154)	236,977	(982,405)	754,535	(117,108)
743	748	867	274	27	887	148
50,178,147	43,017,936	55,023,503	51,820,468	55,471,710	53,516,593	58,089,383
255,496	233,709	330,926	353,998	545,859	511,938	539,296
5.09	5.43	6.01	6.83	9.84	9.57	9.28
44,745,289	38,345,205	48,014,683	44,790,670	48,025,175	45,525,366	47,916,423
890,383	192,058	1,004,185	1,049,318	1,170,128	1,790,721	2,704,526
45,635,672	38,537,263	49,018,868	45,839,988	49,195,303	47,316,087	50,620,949
26,482,749	24,373,006	25,274,874	23,135,876	22,624,136	19,032,066	13,138,867
1,965,785	1,828,311	3,233,861	3,006,018	3,083,181	2,254,504	3,281,849
74,084,206	64,738,580	77,527,603	71,981,882	74,902,620	68,602,657	67,041,665
2.0%	3.2%	3.3%	2.9%	3.1%	2.2%	3.8%
35.7%	37.6%	32.6%	32.1%	30.2%	27.7%	19.6%
98.0%	99.5%	98.0%	97.7%	97.6%	96.2%	94.7%
3,889	3,037	4,005	3,730	4,190	3,746	3,773

PHILADELPHIA GAS WORKS
(A Component Unit of the City of Philadelphia)
Capital Asset Information
Calendar Years 2007 through 2016

	2016	**2015**	**2014**	**2013**
Gas main (Miles)	3,020	3,022	3,023	3,025
Services (Miles)	2,865	2,862	2,860	2,779
Number of meters				
Residential/Small commercial	499,110	497,556	499,375	498,765
Large diaphragm	3,030	2,842	2,695	2,579
Rotary	10,034	9,945	9,883	9,778
Turbine	283	285	291	288
Total	512,457	510,628	512,244	511,410

Source - Gas Annual Report of PGW to the Pennsylvania Public Utility Commission

2012	2011	2010	2009	2008	2007
3,026	3,027	3,029	3,029	3,022	3,023
2,736	2,772	2,815	2,984	2,829	2,794
501,250	497,151	502,145	503,201	497,472	503,737
2,401	2,298	2,245	2,185	2,113	2,047
9,690	9,551	9,513	9,479	9,322	9,336
289	287	297	291	291	290
513,630	509,287	514,200	515,156	509,198	515,410

PHILADELPHIA GAS WORKS
(A Component Unit of the City of Philadelphia)
Ten Largest Customers
Current Fiscal Year and Nine Years Ago
(Thousands of US dollars)

2016		2007	
Customer 1 (A)	2,814	Customer 1 (C)	8,710
Customer 2 (B)	2,619	Customer 2 (B)	8,040
Customer 3 (C)	2,204	Customer 3 (A)	6,287
Customer 4	1,998	Customer 4 (D)	3,914
Customer 5 (D)	1,353	Customer 5 (E)	3,582
Customer 6 (E)	966	Customer 6	3,275
Customer 7 (F)	932	Customer 7 (H)	2,314
Customer 8 (G)	690	Customer 8 (F)	2,239
Customer 9 (H)	568	Customer 9	1,298
Customer 10	522	Customer 10 (G)	1,234
Total	14,666	Total	40,893

Note - A letter designation indicates a repeat customer from the Fiscal Year 2007 list identified on the fiscal year 2016 list.

Source - PGW Records

APPENDIX B

INDEPENDENT CONSULTANT'S ENGINEERING REPORT

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INDEPENDENT CONSULTANT'S ENGINEERING REPORT

City of Philadelphia, Pennsylvania

Gas Works Revenue Bonds

Fifteenth Series (1998 General Ordinance)

BLACK & VEATCH PROJECT NO. 195568

PREPARED FOR

City of Philadelphia, Pennsylvania

Philadelphia Gas Works

27 JULY 2017

BLACK & VEATCH

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BLACK & VEATCH

Black & Veatch Management Consulting, LLC
11401 Lamar Avenue, Overland Park, KS 66211
P +1 724-935-3027 E FeingoldRA@bv.com

27 July 2017

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

Dear Mr. Dubow:

In accordance with our agreement with the Philadelphia Gas Works ("PGW") through the Philadelphia Facilities Management Corporation, the management entity for PGW, Black & Veatch Management Consulting, LLC ("Black & Veatch") submits herewith our independent consulting engineer's report (the "Report") to be included as an appendix to the official statement or official statements ("Official Statements") prepared in connection with the issuance of the City of Philadelphia, Pennsylvania (the "City") Gas Works Revenue Bonds, (1998 General Ordinance) which have been authorized to be issued from time to time, pursuant to the 1998 Ordinance of Philadelphia City Council. The bonds to be issued may be issued as Fifteenth Series Bonds or as Bonds of subsequent series in an aggregate principal amount of approximately $300,000,000. The Fifteenth Series Bonds proceeds will be used to finance various elements of PGW's ongoing Capital Improvement Plan, to refund PGW's outstanding Gas Works Revenue Capital Projects Commercial Paper Notes ("Notes"), the proceeds of which were used for capital projects, and to potentially refund a portion of PGW's outstanding 1998 General Ordinance Gas Works Revenue Bonds.

The purpose of this Report is to present the findings of our evaluation of PGW's gas works system (the "System") and to set forth information concerning financial factors relating to the Fifteenth Series Bonds. This Report is based on our analysis of the records and Capital Improvement Program (the "CIP") of PGW, discussions with key PGW personnel in April 2017, physical inspections of predominately above-ground facilities conducted in April 2017, and such other investigations as we have deemed necessary.

The evaluation of the System, which includes a discussion of organization, management, and staffing; system service area; supply facilities; distribution facilities; and the CIP for fiscal years 2017 through 2022, is presented in the first part of the Report. The second part of the Report contains: (a) financial feasibility information, including analyses of gas rates and rate methodology, (b) projection of future operation and maintenance expenses, (c) CIP financing plans, (d) projection of revenue requirements as a determinant of future revenues, (e) an assessment of PGW's ability to satisfy the covenants in the General Gas Works Revenue Bond Ordinance of 1998, as amended and supplemented (the "1998 General Ordinance") authorizing the issuance of the Bonds (as defined below), and (f) information regarding potential liquefied natural gas ("LNG") expansion opportunities. "Prior Bonds" are defined as the outstanding bonds (senior and subordinate bonds) issued under the 1998 General Ordinance. Together, the Prior Bonds and Fifteenth Series Bonds are collectively referred to as the "Bonds". A listing of our principal assumptions and opinions developed as a result of our studies is presented at the end of this Report.

This Report was prepared for the City based on information not within the control of Black & Veatch. In conducting our studies, we reviewed the books, records, agreements, the CIP, and customers, sales and financial projections of PGW and investigated such physical properties of PGW as we deemed necessary to express our opinion of PGW's operating results and projections. While we consider such books, records, documents, and projections to be reliable, Black & Veatch has not verified the accuracy of these documents or the validity of the information provided by others. This Report is subject to the limitations set forth herein.

In connection with the authorization of the Fifteenth Series Bonds, Black & Veatch submitted its Independent Consultant's Engineering Report on June 13, 2017, in which the underlying assumptions included PGW's February 27, 2017 base rate revenue request of $70 million, the basis for which, in part, was 10-year average heating degree days ("HDDs"). On July 21, 2017, PGW, and others, filed a Joint Petition for Partial Settlement ("Settlement Agreement") of the matter before the Pennsylvania Public Utility Commission ("PUC"), proposing rates be designed to produce a $42 million base rate revenue increase calculated using 20-year HDDs. In this Report, Black & Veatch has updated our analysis of the financial feasibility of the Fifteenth Series Bonds to reflect the revenue and normal weather parameters included in the Settlement Agreement, on the assumption that the PUC will approve the Settlement Agreement without modification. The PUC is expected to issue its final decision with respect to the Settlement Agreement by early to mid-November 2017. No assurance can be provided that the PUC will approve the Settlement Agreement. The PUC could approve the Settlement Agreement with or without modification or reject the Settlement Agreement.

Black & Veatch is one of the oldest, largest and most diversified engineering, procurement, and construction companies in the United States. Black & Veatch operates and maintains a global network of regional, marketing, and project offices. Founded in 1915, Black & Veatch employs over 10,000 people performing financial, economic, and engineering studies and design and construction of facilities for clients in government and industry in the fields of energy, water, wastewater, and telecommunications. Black & Veatch has extensive experience in the design and analysis of the operation and financing of electric, natural gas, water, and wastewater systems serving communities ranging in size from small cities to large metropolitan systems of the magnitude of the System.

In this Report, where standards or requirements are indicated as being applicable, being fulfilled, or to be attained, such standards or requirements are those promulgated by the PUC and other Federal, State, and local agencies, in accordance with the provisions of Federal laws and the laws of the Commonwealth of Pennsylvania governing the storage, delivery, and sale of natural gas. Capitalized terms not otherwise defined herein have the same meanings as ascribed to them in the 1998 General Ordinance. References made herein to specific years are for the fiscal years of PGW ending August 31, unless otherwise noted.

The Report includes our assessment of the condition of PGW's facilities, including PGW's existing storage and distribution facilities, based upon site inspections of certain PGW facilities as deemed appropriate during April 2017. We also reviewed and evaluated existing and planned natural gas transportation and supply contracts with respect to volumes of natural gas to be delivered. The general physical condition of the System's facilities 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.
- **Adequate:** The facility is operating at or near design levels, however, non-routine renovation, upgrading, and repairs are needed for continued reliable operation. Significant expenditures for these improvements may be required.
- **Poor:** The facility cannot be operated within design parameters. Major renovations are required to restore the facility to reliable operating condition. Major expenditures for these improvements may be required.

The ratings assigned in this Report are the result of physical inspections of individual above-ground facilities at existing sites conducted in April 2017.

An evaluation of a gas storage and distribution system of the magnitude and complexity of PGW's requires an assessment of each of the System's various components. The evaluation described in this Report is based on estimates of the degree of improvement that has been or will be provided by the projects in the current CIP and their impact in meeting service requirements.

The projections set forth in this Report are "forward-looking statements." In formulating these projections, Black & Veatch has made certain assumptions with respect to conditions, events, and circumstances that may occur in the future. The methodologies utilized by Black & Veatch in performing these analyses follow generally accepted practices for such projections. Such assumptions and methodologies are summarized in this Report and are reasonable and appropriate for the purpose for which they are used. 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 conditions, events, and circumstances that may actually occur that are unknown as of the date of this Report and/or which are beyond the control of Black & Veatch. Such factors may include PGW's ability to execute the capital improvement plan as scheduled and within budget, regional climate and weather conditions affecting the demand for gas, and adverse legislative, regulatory or legal decisions (including environmental laws and regulations) affecting PGW's ability to operate the System.

Based on these analyses and the assumptions set forth or referred to in this Report, we offer the following opinions to indicate PGW's conformance with specific requirements which must be met for the issuance of the Fifteenth Series Bonds as provided in the 1998 General Ordinance:

1. PGW is a competently managed and operated gas distribution utility. PGW and the System are organized, operated, and maintained at a level equal to, or in excess of, regulatory requirements and generally accepted industry practices. The System is in good operating condition.

2. Based upon Black & Veatch's evaluation of financial projections and certain assumptions with respect to the System which Black & Veatch believes to be reasonable, and on the basis of actual and estimated future annual financial operations of the System, the System should yield Gas Works Revenues (which are pledged under the 1998 General Ordinance) over the amortization periods of the Bonds issued under the 1998 General Ordinance which will be sufficient to: (a) meet all expenses of operation, maintenance, repair and replacement of the System, (b) meet all reserve or special funds required to be established under the 1998 General Ordinance, (c) meet the principal of and interest on all Bonds issued under the 1998 General Ordinance as the same shall become due and payable, and (d) provide such surplus requirements as are contained in the rate covenant of the 1998 General Ordinance. The Gas Works Revenues forming the basis of this opinion are defined in the 1998 General Ordinance and comply with the requirements of the definition of Project Revenues contained in Section 2 of the First Class City Revenue Bond Act (the "Act").

3. The Gas Works Revenues which are pledged as security for the Bonds issued under the 1998 General Ordinance are currently, and are projected to be, sufficient to comply with the rate covenant set forth in Section 4.03(b) of the 1998 General Ordinance.

4. The capital improvements proposed during the projection period, September 1, 2017, through August 31, 2022 should, along with continued good operation and maintenance practices, enable PGW to maintain the System in good operating condition. Review of present management practices indicates that good operation and maintenance is likely to continue.

5. Contracted PGW gas supplies plus: (a) spot market purchases, (b) anticipated additional contracted supplies plus supplemental gas capacities, as well as, (c) the pipeline transport capacity to move these supplies to PGW, appear adequate to meet PGW's projected demand on a day of maximum demand (a "design peak day"), in an hour of maximum demand (a "design peak hour"), and during a year of maximum demand (a "design peak year").

Very truly yours,
BLACK & VEATCH MANAGEMENT CONSULTING, LLC

Russell A. Feingold
Vice President

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Acronym List

AFUDC	Allowance for Funds Used During Construction
AMR	Automatic Meter Reading Program
Bcf	Billion cubic feet
BPS	Boiler and Power Plant Service
BTU	British Thermal Unit
CDS	Comprehensive Delivery Service
CG	Cogeneration Service
CHP	Combined Heat and Power
CIP	Capital Improvement Program
CLNP	Commercial Lien Notification Program
CNG	Compressed Natural Gas
CRP	Customer Responsibility Program
CSC	Customer Service Centers
CWP	Conservation Works Program
DB	Daily Balancing Service
DSIC	Distribution System Improvement Charge
DSM	Demand-Side Management
dt or Dth	Dekatherm
ECA	Energy Coordinating Agency of Philadelphia
FOI	Field Operations Initiative
FERC	Federal Energy Regulatory Commission
FPL	Federal Poverty Level
FT	Firm Transportation
FY	Fiscal year beginning September 1 through August 31
GCR	Gas Cost Rate
GS	General Service

GSS	General Storage Service
GTS	Gas Transportation Service
HDD	Heating Degree-Day
IRC	Interruptible Revenue Credit
IT	Interruptible Transportation
IVR	Interactive Voice Response
kWh	Kilowatt-hour
LBS	Load Balancing Service
LCP	Landlord Cooperation Program
LIHEAP	Low-Income Home Energy Assistance Program
LIME	Low Income Multifamily Efficiency
LNG	Liquefied Natural Gas
LTIIP	Long Term Infrastructure Improvement Plan
Mcf	Thousand Cubic Feet
MS	Municipal Service
NGS	Natural Gas Supplier
Notes	Gas Works Revenue Capital Projects Commercial Paper Notes
OPEB	Other Post-employment Benefits
OSBA	Office of Small Business Advocate
PFMC	Philadelphia Facilities Management Corporation
PGC	Philadelphia Gas Commission
PGW	Philadelphia Gas Works
PHA	Philadelphia Housing Authority
PHMSA	Pipeline and Hazardous Materials Safety Administration
PSFT	Peaking Service Firm Transportation
Psig	Pounds per Square Inch Gauge
PUC	Pennsylvania Public Utility Commission

PWD	Philadelphia Water Department
SCADA	Supervisory Control and Data Acquisition
SS	Storage Service
UAAL	Unfunded Actuarial Accrued Liability
UESF	Utility Emergency Services Fund
VOIP	Voice Over Internet Protocol
W.C.	Water Column
WNA	Weather Normalization Adjustment
WSS	Washington Storage Service

1. Introduction

The Philadelphia Gas Works ("PGW") is a gas distribution utility owned by the City of Philadelphia, Pennsylvania (the "City"). PGW acquires, stores, distributes, and sells natural gas to residents and other customers within the City.

Under the terms of certain current revenue bond covenants, PGW is obligated to charge and collect rents, rates and charges to maintain net revenues at or above certain specified levels in excess of annual debt service requirements. In addition, prior to the authorization of the issuance of bonds under the General Gas Works Revenue Bond Ordinance of 1998, as amended and supplemented ("1998 General Ordinance"), a financial report from the City's Chief Fiscal Officer, which may be given in reliance on an engineering report, is required.

1.1. PURPOSE

The purpose of this Independent Consultant's Engineering Report ("Report") is to summarize the findings of engineering studies performed by Black & Veatch Management Consulting, LLC ("Black & Veatch") related to the gas system of PGW and to set forth information concerning the financial factors relating to the issuance of approximately $300,000,000 in Gas Works Revenue Bonds (1998 General Ordinance) which have been authorized to be issued from time to time, pursuant to Ordinance of Philadelphia City Council. The bonds to be issued may be issued as Fifteenth Series Bonds or as Bonds of subsequent series.

The Fifteenth Series Bonds will be issued in one or more series with the proceeds assumed for the purposes of this Report to be used to finance various elements of PGW's ongoing Capital Improvement Program ("CIP"), to refund PGW's outstanding Gas Works Revenue Capital Projects Commercial Paper Notes ("Notes"), the proceeds of which were used for capital projects, and to potentially refund a portion of PGW's outstanding 1998 General Ordinance Gas Works Revenue Bonds.

"Prior Bonds" are defined as the outstanding bonds issued under the 1998 General Ordinance. Together, the Prior Bonds and Fifteenth Series Bonds are collectively referred to in this Report as the "Bonds". "Notes" constitute Bonds within the meaning of the 1998 General Ordinance and are issued as Subordinate Bonds constituting Interim Debt under the 1998 General Ordinance.

1.2. SCOPE

In connection with the authorization of the Fifteenth Series Bonds, Black & Veatch submitted its Independent Consultant's Engineering Report on June 13, 2017, in which the underlying assumptions included PGW's February 27, 2017 base rate revenue request of $70 million, the basis for which, in part, was 10-year average heating degree days ("HDDs"). On July 21, 2017, PGW, and others, filed a Joint Petition for Partial Settlement[1] ("Settlement Agreement") of the matter before the Pennsylvania Public Utility Commission ("PUC"), proposing rates be designed to produce a $42 million base rate revenue increase calculated using 20-year HDDs. In this Report, Black & Veatch has updated our analysis of the financial feasibility of the Fifteenth Series Bonds to reflect the revenue and normal weather parameters included in the Settlement Agreement, on the assumption that the PUC will approve the Settlement Agreement without modification. The PUC is expected to

[1] PUC Docket No. R-2017-2586783, Joint Petition For Partial Settlement entered July 21, 2017.

issue its final decision with respect to the Settlement Agreement by early to mid-November 2017. No assurance can be provided that the PUC will approve the Settlement Agreement. The PUC could approve the Settlement Agreement with or without modification or reject the Settlement Agreement.

This Report addresses the organization and management, regulation, physical condition, system capacity, operation and maintenance practices, and staffing levels of PGW's facilities. Black & Veatch performed inspections of PGW's facilities in April 2017. This Report provides a review of the proposed CIP for fiscal years 2017 through 2022 and includes the results of engineering studies regarding the financial requirements of the System. Evaluation of the projected financing of future capital improvement needs is based upon a review of historical operating and financial data and projected capital program and operating budget information provided by PGW. Projections of revenues and revenue requirements are presented for the fiscal years 2017 through 2022. The financial feasibility of the issuance of the Fifteenth Series Bonds should be evaluated taking into account the results of these analyses and PGW's projected compliance with applicable revenue bond covenants.

PGW representatives and others have provided certain historical data and other information presented in this Report. Black & Veatch has not conducted verification tests of this information. In conducting our analysis and preparing our opinions and the projections, Black & Veatch has made certain assumptions with respect to conditions, events, and circumstances that may occur in the future. The methodologies utilized by Black & Veatch in performing these analyses follow generally accepted practices for such projections. Such assumptions and methodologies are summarized in this Report. While Black & Veatch believes the assumptions are reasonable and the projection methodology valid, actual results may differ materially from those projected, as influenced by conditions, events, and circumstances that may actually occur. Such factors may include PGW's ability to execute the CIP as scheduled and within budget, regional climate and weather conditions affecting the demand for gas, and adverse legislative, regulatory or legal decisions (including environmental laws and regulations) affecting PGW's ability to operate the System.

1.3. BLACK & VEATCH QUALIFICATIONS

Black & Veatch is one of the largest and most experienced engineering companies in the United States specializing in utility engineering. Our experience includes the planning, design, operation analysis, and construction of gas, electric, water, wastewater, and telecommunications systems. In addition, the firm has extensive experience in assisting utilities with management and financial aspects of their operations. Black & Veatch has been engaged in several thousand projects with a range of clients that include utilities owned by municipalities ranging in size from small communities to large metropolitan regions, investor-owned utilities, industrial and commercial businesses, local and state agencies, and the United States and various foreign governments. Black & Veatch performed the Independent Consultant's Engineering Report ("2001 Report") for PGW's (1998 General Ordinance) Third Series Bonds issued in 2001, the Independent Consultant's Engineering Report ("2002 Report") for PGW's (1998 General Ordinance) Fourth Series Bonds issued in 2002, the Independent Consultant's Engineering Report ("2003 Report") for PGW's General Gas Works Revenue Bond Ordinance of 1975, as amended and supplemented ("1975 General Ordinance"), Gas Works Revenue Refunding Bonds, Seventeenth Series issued in 2003, the Independent Consultant's Engineering Report ("2004 Report") for PGW's (1998 General Ordinance)

Fifth Series A-1 and A-2 issued in 2004, the Independent Consultant's Engineering Report ("2006 Report") for PGW's (1998 General Ordinance) Sixth Series Bonds issued in 2006, the Independent Consultant's Engineering Report ("2007 Report") for PGW's (1998 General Ordinance) Seventh Series Bonds issued in 2007, the Independent Consultant's Engineering Report ("2009 Report") for PGW's (1998 General Ordinance) Eighth Series Bonds issued in 2009, the Independent Consultant's Engineering Report ("2010 Report") for PGW's (1998 General Ordinance) Ninth Series Bonds issued in 2010, the Independent Consultant's Engineering Report ("2011 Report") for PGW's (1975 General Ordinance) Twentieth Series Bonds and (1998 General Ordinance) Tenth Series Bonds issued in 2011, the Independent Consultant's Engineering Report ("2013 Report") for PGW's (1998 General Ordinance) Twelfth Series Commercial Paper Notes, the Independent Consultant's Engineering Report ("2015 Report") for PGW's (1998 General Ordinance) Gas Works Revenue Refunding Bonds, Thirteenth Series Bonds issued in 2015, and the Independent Consultant's Engineering Report ("2016 Report") for PGW's (1998 General Ordinance) Gas Works Revenue Refunding Bonds, Fourteenth Series Bonds issued in 2016. Since 1972, the Philadelphia Water Department ("PWD") also has engaged Black & Veatch for various consulting services. These consulting services have included engineering evaluation reports for Water and Wastewater System Revenue Bonds sold by the City since 1974 and various projects involving the development of water and wastewater rates.

Experienced personnel from Black & Veatch have performed the physical evaluation of PGW's gas supply and distribution systems. In performing our engineering assessment of PGW, Black & Veatch reviewed the current condition, operation and maintenance of the gas supply and distribution systems. We conducted inspections of PGW's major facilities in April 2017, including PGW's city gate stations and liquefied natural gas ("LNG") facilities. We also interviewed key members of PGW's management team in April 2017 regarding operations and maintenance issues and practices.

The financial feasibility review has been performed by personnel from Black & Veatch experienced in providing services in such areas as utility rates, utility property valuation, depreciation rate studies, financial analysis and planning, non-audit accounting, management and operations analysis, and the preparation of independent engineering reports for official statements.

2. Organization and Management

PGW is owned by the City and is responsible for the acquisition, storage, and distribution of natural gas within the limits of the City. PGW is accounted for as a component unit of the City. As described in greater detail herein (*See Section 3, The PGW Gas System*), PGW is the largest municipally-owned gas utility in the nation.

PGW's operations are managed by the Philadelphia Facilities Management Corporation ("PFMC"), a not-for-profit corporation whose Board is appointed by the Mayor. PFMC's responsibilities are set forth in a Management Agreement between the City and PFMC dated December 29, 1972, as subsequently amended ("Management Agreement"), which delegates responsibility for PGW's operation to an executive management team provided by PFMC. Under the Management Agreement, those responsibilities that are not specifically granted to PFMC fall under the domain of the Philadelphia Gas Commission ("PGC"), except to the extent preempted by the PUC pursuant to the Pennsylvania Natural Gas Choice and Competition Act ("Gas Choice Act"). The Gas Choice Act provides that PGW is subject to regulation by the PUC effective July 1, 2000, and that choice among natural gas suppliers will be provided to PGW's customers.

On March 31, 2003, the PUC approved PGW's restructuring plan, which among other things, provided for an unbundled tariff permitting customer choice of the commodity supplier. On September 1, 2003, PGW began operating under its Restructuring Compliance Tariff. PGW's Restructuring Compliance Tariff Rates are designed to maintain revenue neutrality and the Tariff Rules and Regulations are designed to comport with the Pennsylvania Public Utility Code.

2.1. CITY OF PHILADELPHIA

The City was founded in 1682 and merged with the County of Philadelphia in 1854. There are two principal governmental entities in Philadelphia: (1) the City, which performs ordinary municipal functions as well as traditional county functions, and (2) the School District, which has boundaries coterminous with the City and has responsibility for all public primary and secondary education. The court system in Philadelphia, consisting of Common Pleas, Municipal, and Traffic Courts, is part of the Commonwealth of Pennsylvania (the "Commonwealth") Judicial System. Although the Commonwealth pays judges and top level administrators, the City pays all other court costs, with partial reimbursement from the Commonwealth.

The City is governed primarily under the Philadelphia Home Rule Charter ("Home Rule Charter")[2], which provides for the election, organization, powers, and duties of the legislative branch (the "City Council"); the powers and duties of the executive and administrative branches; and the City's fiscal and budgetary matters, contracts, procurement, property, and records.

2.2. PHILADELPHIA GAS WORKS

In March 1835, a City ordinance was passed authorizing private ownership and operation of a public gas utility under trustee management. This ordinance also contained an option clause permitting the City to take ownership of the gas utility properties by issuing City bonds to the private stockholders. The City exercised this option, initiating City ownership of gas utility

[2] Philadelphia Home Rule Charter, 351 Pa. Code §1.1-100 et seq., adopted pursuant to authorization of the First Class City Home Rule Act approved April 21, 1949, P.L. 665, §1 et seq. (53 P.S. §13101 et seq.).

properties to ultimately form PGW, on March 1, 1841. The City has owned the gas system continuously since that date. Manufactured gas production commenced February 8, 1836, and service was inaugurated February 10, 1836, to 46 gas lamps along Second Street.

During its more than 180 years of existence, the operation and management of PGW has evolved to its present configuration through a variety of arrangements. Initially the private owners managed it. In 1841, a Board of Trustees assumed management of PGW in accordance with an enabling City ordinance. This arrangement continued through April 1887, when the City, under the Director of Public Works, assumed direct management and operation of PGW. Serious financial and operating problems led to a change in this arrangement on November 12, 1897. At that time, the City, unable to sell PGW, contracted with the United Gas Improvement Company, now UGI Corporation, for the operation and management of PGW under authority granted by the Home Rule Charter. Operation and management by UGI Corporation continued through December 31, 1972.

On December 5, 1972, the City caused the incorporation of the PFMC as a not-for-profit Pennsylvania corporation for the specific purpose of operating PGW. PFMC currently manages PGW in accordance with the Management Agreement. The relationship between the City, PGC, PFMC, and PGW as originally detailed in the Management Agreement and as revised by the Gas Choice Act *(See Section 2.4, Pennsylvania Public Utility Commission and Section 7.1 Regulation History)* is summarized below:

Organization	Function
City of Philadelphia	• The City owns PGW property. • The City Administrator reviews certain transactions and processes (chiefly through the Director of Finance). • City Council enacts legislation for the functioning of PGW (e.g., the capital budget, real estate transactions, pension modifications and certain gas supply contracts).

Philadelphia Gas Commission	• The Commission consists of the City Controller, two members appointed by the City Council and two members appointed by the Mayor.
	• Responsibilities include:
	  • Approval of certain executive personnel provided by PFMC.
	  • Review of gas supply contracts for approval by City Council.
	  • Approval of PGW's operating budget.
	  • Review of PGW's capital budgets for approval by City Council.
	  • Review of real estate transactions for approval by City Council.

PFMC	• Incorporated by the City in 1972 for the specific purpose of operating PGW. • Is governed by a seven member board of directors. • Provides executive management for PGW. • Directs operation of PGW facilities and operations.
PGW	• Manages construction, operation and maintenance of the gas system on a day-to-day basis. • PGW executive management is responsible for hiring PGW staff.
PUC	• Regulates rates, customer service and safety.

The Management Agreement states that for the operation of PGW, PFMC shall provide:

- A Chief Executive Officer ("CEO"),
- A Chief Operating Officer ("COO"),
- A Chief Financial Officer ("CFO"), and
- Other personnel as deemed appropriate by PFMC.

All PFMC personnel are subject to the approval of the PGC. The PGC consists of five members: the City Controller, two Mayoral appointees, and two City Council appointees. The PGC has the general responsibility to oversee operation of PGW by PFMC and retains all powers not specifically granted to PFMC. In addition, the Management Agreement specifies certain functions of the PGC, mainly:

- Approval of PFMC personnel,
- Review and make recommendations regarding gas supply contracts for City Council approval,
- Approval of PGW's annual operating budget,
- Review and make recommendations regarding PGW capital budgets for City Council approval,
- Approval of short-term loans, and
- Review and approval of all PGW real estate acquisitions, sales, or leases for submittal to City Council for approval by ordinance, and power to establish procurement standards and to fix and regulate rates and charges[3] for supplying gas to customers other than the City and the Board of Education, which will annually produce revenues sufficient to:
  - Pay all operating and maintenance expenses of PGW and the interest and amortization expense of its debt,
  - Maintain debt coverage ratios,
  - Pay $18 million to the City each year, and
  - Provide such other funds as may be approved by the PGC and City Council for debt reduction or capital additions.

In preparing this Report, Black & Veatch interviewed key PGW officers[4] and a number of its managers. The interviews were supplemented with reviews of PGW's policies, practices, procedures, and field observations of employees at various facilities performing their daily activities. Based on these interviews, reviews, and observations, it is our opinion that PGW is suitably organized, managed, and operated by qualified personnel. PGW's organizational chart is shown in Figure 1.

As of February 24, 2017, PGW employed 1,643 people. PGW is aware that the number of eligible retirees has been building for years. In anticipation of a high number of retirements, PGW has instituted different organizational programs over the last ten years including an active succession planning process.

PGW meets with most departments twice a year to discuss departmental talent, potential training and development programs for identified candidates, and projected retirements. PGW evaluates its potential future leaders and takes active measures to develop employees into candidates for senior level and executive positions. This appears to be especially important at the executive level, as the CEO, CFO, and COO are similarly tenured and could conceivably retire in a relatively similar time window. PGW has taken steps such as rotating managerial candidate employees among different departments to expand their functional knowledge and experience within the various operational

[3] As of July 1, 2000, the PUC became responsible for regulating rates pursuant to the Gas Choice Act.
[4] For the purpose of this Report, PGW officers and management include individuals provided by PFMC.

and administrative areas. In addition, PGW has created more managerial roles at the Vice President level to provide a broader number of management level employees the requisite experience needed to succeed in an executive role.

PGW provides extensive leadership training opportunities, including: coaching, the Management Academy, and the Leadership Development Program. The Management Academy provides managers and directors with an understanding of the many different facets of PGW's business, teaches important soft skills, and enables better decision making through critical thinking exercises. The Leadership Development Program is a fourteen month program that was provided to seventeen management level employees which contributed to the promotion of four of these employees to the Director or Vice President level.

For engineers and information services professionals, PGW created job ladders that reward performance on an accelerated basis. In addition, a rotational program has been implemented for engineers so that they have a better understanding of the various career paths within PGW. Because of this program, PGW has been able to promote many of the engineers who started with PGW ten years ago into more senior level positions such as superintendents and directors.

Further, PGW has identified several senior employees who have a wealth of institutional knowledge and who are respected within the organization. These individuals actively serve as mentors to more junior staff members to facilitate the knowledge transfer process. From fiscal year 2014 to present, PGW has filled over 300 positions either through internal promotions or external hires.

On June 3, 2015, PGW and Utility Workers Union of America, Local 686 ("Local 686") tentatively agreed upon a new, five-year Collective Bargaining Agreement to replace the previous agreement that expired on May 15, 2015, with no work stoppage in the interim. The agreement was subsequently approved by the PFMC Board on June 15, 2015 and by bargaining unit members on June 17, 2015. This agreement expires on May 15, 2020. Notable terms and provisions of the agreement include general wage increases of 2, 2.5, 2.5, 2.5, and 2.5 percent effective May 15, 2015, 2016, 2017, 2018, and 2019, respectively. The starting salaries for select entry level union positions increased by 10 percent. Union covered employees on the payroll at May 15, 2015 are protected from layoff for the term of the contract. A minimum staffing level for field classifications of 590 union covered employees was established for the combined complement of Distribution Department and Field Services Department employees. The current combined complement of union covered employees in these departments is approximately 650. Shift premiums increased approximately $0.25 per hour.

A major change in work conditions implemented with the latest Collective Bargaining Agreement includes PGW's ability to freely employ outside contractors to perform replacement work on active gas mains and service lines, provided a base mileage of 22 miles of applicable main replacement is achieved through the course of a fiscal year. PGW anticipates exceeding 22 miles of applicable main replacement on an annual basis. This work includes: installing mains of all diameters, connecting mains of all diameters to one another, installing service lines, rebuilding meter sets, and relighting systems inside customer's premises. Further, outside contractors may be used to perform main and service line abandonment projects regulated by the PUC, including non-payment shut-offs, cold weather surveys, shut-offs of accounts involving theft, and inactive service accounts. Previously, this work was restricted to Local 686 employees.

PGW is in the process of creating a repeatable and participatory strategic planning process. The process, developed in consultation with an external consultant, is intended to be a bottom-up approach to strategic planning, involving mid-level management and supervisory employees along with senior-level management employees and executives. The process begins with the executive leaders developing "goals," which are not intended to be specific but rather provide a sense of PGW's high-level aspirations. The goals are then cascaded to a wide array of employees who are asked to develop specific objectives, which are then pared down by senior management to arrive at a concise set that accurately portray PGW's goals. The strategic plan currently being formulated is scheduled for completion in October 2017, and will set goals and objectives for fiscal year 2019.

PGW's senior officers monitor certain key performance metrics compiled in monthly reports to gauge the financial health of the utility and the effectiveness of the organization in fulfilling its mission of providing safe and reliable natural gas service, including the ongoing upgrade of its underground infrastructure. These monthly reports are then shared with the Board of Directors of the PFMC. The Summary Metrics Monthly Board Report is organized under the following categories of metrics: a) Customer- including Customer Satisfaction, Low-Income Home Energy Assistance Program ("LIHEAP") + City Grants, and PUC complaints; b) Financial – including Capital Budget and Operating Expense Variance, Internally Generated Funds, and Rolling 24-Month Collection (customer receipts); c) Internal Process – including but not limited to Appointments Kept, Cast Iron Replacement Miles, First Call Resolution, New Annualized Revenue, preventable motor vehicle accidents and OSHA incidents, and Wellness Penetration; and d) Learning and Growth – including Hires within Time to Fill. Annually, PGW management provides a Detail Metrics Annual Report to the PGC, with monthly and yearly actual-to-goal metrics, covering a comprehensive list of individual performance metrics.

The following are brief biographical descriptions of the current PFMC/PGW senior officers:

Craig E. White, President and Chief Executive Officer

Craig White is the President and Chief Executive Officer of PGW. Mr. White started with the organization in 1980. During his 37 years of service, he progressed through the ranks and in March of 2011 he was elevated to his present position as President and Chief Executive Officer. Mr. White received a Bachelor of Science Degree from Kutztown University. He is a graduate of Drexel University's MBA Program and has completed executive development programs at Drexel University and Harvard Business School. Mr. White is actively involved in community service through his affiliation with the Citizens Crime Commission as well as industry and professional organizations. He serves on the Board of Directors of the American Gas Association, Aria Health System, and the National Petroleum Council. He also serves on the Board of the Energy Association of Pennsylvania and is the past Chairman as well as former Executive Board Member of the American Public Gas Association.

Douglas A. Moser, Executive Vice President and Acting Chief Operating Officer

Mr. Moser started with the Philadelphia Gas Works in 1979. During his 38 years of service, he progressed through the ranks and in 2012 he was elevated to his present position as Executive Vice President and Acting Chief Operating Officer. Mr. Moser received his Bachelor of Science degree in Chemical Engineering from Pennsylvania State University and a Master in Business Administration degree from Widener University. He serves on the Gas Board of the Energy Association of Pennsylvania, the Board of Directors of the American Public Gas Association and the Leadership Council of the American Gas Association.

Joseph F. Golden, Jr., Executive Vice President and Acting Chief Financial Officer

Mr. Golden was appointed Executive Vice President and Acting Chief Financial Officer in March 2012. In this capacity he is responsible for the treasury, accounting, budgeting, and finance functions. Prior titles held by Mr. Golden at PGW include: Controller, Treasurer, Manager Treasury Department, Senior Staff Accountant, and Staff Accountant. Mr. Golden started his career with PGW in August of 1986. Mr. Golden has prior work experience in public accounting, treasury accounting and cash management, and manufacturing. Mr. Golden holds a Bachelor of Science degree in Accounting from Villanova University, a Master of Business Administration degree from Drexel University, and a Juris Doctor degree (Cum Laude) from Temple University School of Law.

Charles J. Grant, Senior Vice President – Human Resources, Labor, and Corporate Communications

Mr. Grant was appointed Senior Vice President in April 2016. Previously, Mr. Grant held the title of Chief of Staff in the Office of the President and Chief Executive Officer. He held the same position in the Office of the Executive Vice President and Chief Operating Officer when he joined PGW in June 2010. In his current position, he is responsible for human resources, organizational development and staffing. His responsibilities also include oversight and enforcement of PGW's labor contracts and PGW security. He is also responsible for media relations, crisis communications, community partnerships, government affairs, internal communication, digital communication/social media and advertising campaign development. Prior to joining PGW, Mr. Grant was the owner and managing partner in the law firm of Grant & Lebowitz, LLC. Mr. Grant also served as the Chief of the Homicide Unit for the Philadelphia District Attorney's Office, Deputy District Attorney in the Los Angeles County District Attorney's Office and an adjunct professor at the Beasley School of Law, Temple University. Mr. Grant earned his Bachelor of Arts degree from the Honors College of Ohio University and his Juris Doctor degree from Georgetown University Law Center.

Raymond M. Snyder, P.E., Senior Vice President - Gas Management

Mr. Snyder began his career at PGW over 36 years ago in the Engineering Department. He continued in Engineering until he reached the level of Manager. Mr. Snyder moved into Operations as the Director of Systems Administration and then as Director of Gas Processing. His current position as Senior Vice President of Gas Management includes responsibility for Gas Processing, Engineering, Gas Acquisition, Transportation & Gas Control, as well as PGW-owned and -leased properties. Mr. Snyder serves as a member and former Vice-Chair of the AGA Supplemental Gas Committee. Mr. Snyder received his Bachelor of Science in Civil Engineering from the Pennsylvania State University and his Master of Science in Engineering Management from Drexel University. He is a licensed professional engineer in Pennsylvania.

Eloise N. Young, Senior Vice President, Strategic Planning and Information Services

Ms. Young was named Senior Vice President, Strategic Planning and Information Services where she has oversight of the Information Services Department and Strategic Planning in April 2016. Prior to her appointment, she served in a number of positions in PGW's Information Services

Department including Chief Information Officer, Director of Technical Strategy and Support, Manager of Systems Services, System Administrator in both the Unix and CICS environments, DBA, and applications developer. She received a Bachelor of Science degree in Information Technology from the University of Phoenix in 2003 and a Generalist Master of Business Administration from Rosemont College in 2014.

Raquel N. Guzmán, Esq., Vice President, Legal and General Counsel

Ms. Guzmán has held various positions within PGW's Legal Department since joining the department in 1998. She was appointed General Counsel in February 2016. Prior to joining PGW's legal staff, Ms. Guzmán was a Deputy City Solicitor for Regulatory Affairs for the City and also practiced at a major Philadelphia law firm in its real estate department. She holds a Juris Doctor degree from the University of Pennsylvania Law School and an undergraduate degree from Harvard College.

Gregory J. Stunder, Vice President – Regulatory and Legislative Affairs

Mr. Stunder joined PGW's Legal Department in 2001 and was appointed Vice President – Regulatory & External Affairs in January 2015. While in PGW's Legal Department, Mr. Stunder represented PGW in regulatory and legislative matters relating to base rate & gas cost rate proceedings, main replacement, gas choice and PGW's operations. In his current position, Mr. Stunder's primary responsibility is working with the President and CEO and other members of senior management regarding certain matters relating to the Pennsylvania Public Utility Commission, the Pennsylvania General Assembly and other governmental departments and agencies. Prior to attending law school, Mr. Stunder was a Certified Public Accountant and he managed all aspects of the Philadelphia Thermal Energy accounting department (which is now Veolia Energy Philadelphia) including rate matters before the PUC. Mr. Stunder holds a Juris Doctorate from Temple University and a BS in Accounting from LaSalle University.

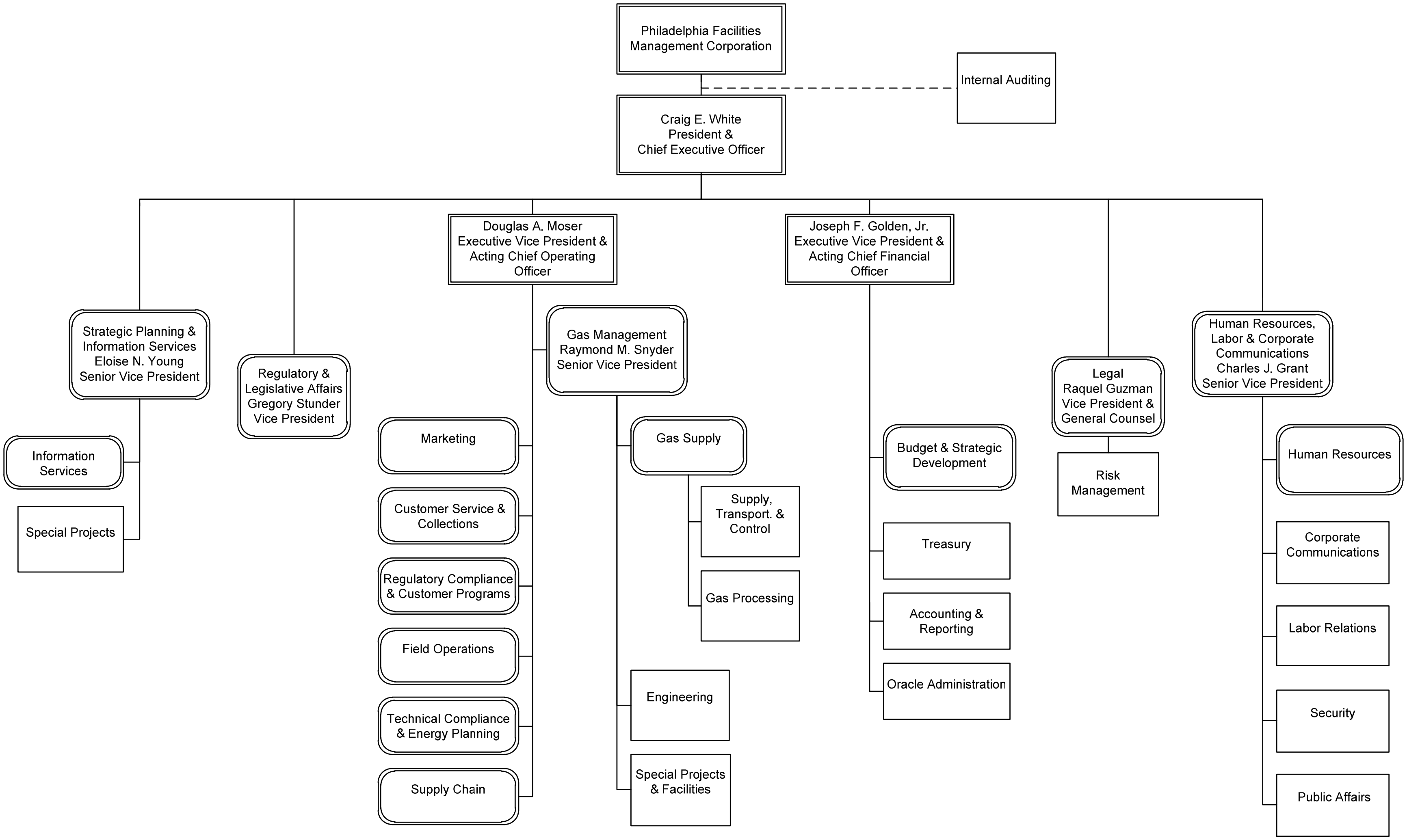

Figure 1 Philadelphia Gas Works Organization Chart

2.3. PHILADELPHIA GAS COMMISSION

The Philadelphia Home Rule Charter contains provisions for the establishment of the PGC with powers and duties as set forth in ordinances and contracts. The Management Agreement grants PGC certain specified powers and duties and all other powers not specifically granted to PFMC. The powers and duties granted to PGC include: (i) approval of personnel provided by PFMC, (ii) review of gas supply contracts for approval by City Council, (iii) approval of changes in tests and standards of gas quality and pressure, (iv) approval of PGW's operating budget, (v) review of PGW's capital budgets and recommendations thereon to City Council, (vi) approval of certain short-term loans (but not the issuance of bonds), (vii) access to and review of all books, records and accounts of PGW, (viii) prescription of insurance requirements, (ix) promulgation of standards for procurement and disposal of material, and (x) supplies and services and approval of all real property acquisitions for further approval of City Council.

2.4. PENNSYLVANIA PUBLIC UTILITY COMMISSION

The PUC regulates the rates and service of Pennsylvania's public utilities, including electricity, water, natural gas, and telephone. Under current law, all rate regulation authority for PGW is held by the PUC, pursuant to the Gas Choice Act. The Gas Choice Act contains provisions which are designed to: (i) preserve the tax-exempt status of Approved Bonds, defined in the Gas Choice Act as bonds or other obligations issued by the City for PGW, including the Fifteenth Series Bonds, (ii) preserve the ability of the City to comply with its covenants, including the City's covenants with respect to the imposition and collection of rates and charges to the holders of Approved Bonds, including the Fifteenth Series Bonds, and (iii) require rates to be set for PGW utilizing the ratemaking methodology and requirements that were applicable to PGW's natural gas distribution operation prior to the assumption of jurisdiction by the PUC. Pursuant to the Gas Choice Act, among other things:

- Commencing July 1, 2000, PGW became subject to regulation by the PUC and, except as otherwise provided in the Gas Choice Act, the provisions of the Public Utility Code apply to PGW as if it were a public utility. The PUC, instead of the PGC, sets rates for PGW's customers.
- Notwithstanding customer choice in gas suppliers, PGW's gas distribution business will remain a regulated monopoly.
- In setting rates and notwithstanding any other provision of the Public Utility Code, the PUC must permit the City to impose, charge and collect rates or charges as necessary to permit the City to comply with its covenants to the holders of any Approved Bonds, as defined in the Gas Choice Act. All bonds issued by the City on behalf of PGW under the Act, including the Fifteenth Series Bonds, are Approved Bonds.
- The PUC is obligated to use PGW's ratemaking methodology and requirements until all outstanding Approved Bonds are paid in full, or are refunded or defeased.
- The PUC is barred from requiring the City or PGW to take any action (or omit taking any actions) under the Public Utility Code if such action or omission would have the effect of causing the interest on any Bonds issued by the City on behalf of PGW, including the Fifteenth Series Bonds, to be includable in the gross income of the holders of such Bonds for Federal income tax purposes.

- Effective July 1, 2000, the provisions of the Home Rule Charter with respect to the powers and duties of the PGC are abrogated to the extent inconsistent with the Gas Choice Act.
- On March 31, 2003, the PUC approved PGW's restructuring plan (Docket No. M-00021612), which implements customer choice and permits licensed natural gas suppliers to deliver gas to customers in Philadelphia using PGW's distribution system.
- On September 1, 2003, PGW began operating under its Restructuring Compliance Tariff.
- The PUC may, but is not required to, approve a senior citizen discount. On September 30, 2004, the PUC denied PGW's request to continue the senior citizen discount program for post-September 1, 2003, applicants. Since September 1, 2003, the program is not available to new participants. *(See Section 7.10, Senior Citizen Discount Program).*
- The PUC is required to provide for a management audit of all employees, records, equipment, contracts, assets, liabilities, appropriations, and obligations of PGW prior to the commencement of the restructuring proceeding. *(See Section 7.1 Regulation History).*
- The City cannot be required to take any action under the Public Utility Code if the effect of the action is to cause a variation in the City's financial plan approved by the Pennsylvania Intergovernmental Cooperation Authority.
- The City's executive or legislative powers to "legislate or otherwise determine the powers, functions, budgets, activities and mission of PGW" are not abrogated or limited.

By Order entered April 19, 2010, the PUC issued a Policy Statement which reaffirmed its use of PGW's prior ratemaking methodology, the cash flow method, to determine PGW's allowable revenue requirement. The Policy Statement also reaffirmed the PUC's obligation to establish rate levels adequate to permit PGW to satisfy its bond ordinance covenants. The PUC further set forth a series of factors it would consider in determining just and reasonable rates for PGW, including: Test Year year-end cash and projected future levels of non-borrowed year-end cash; available short-term borrowing capacity; internal generation of funds for construction; debt-to-equity ratios and the financial performance and level of operating and other expenses of similarly situated utility enterprises; level of financial performance needed to maintain or improve PGW's bond rating; PGW's management quality, efficiency and effectiveness; service quality and reliability; and effect on universal service.

This Report assumes rate regulation will be administered by the PUC to comply with PGW's prior ratemaking methodology (as interpreted by the Policy Statement) and the City's bond covenants, as required by the Gas Choice Act.

3. The PGW Gas System

PGW began gas production in February 1836 and has since continuously provided the City with service. Today, PGW is the largest municipally-owned gas utility in the nation, maintaining a distribution system of approximately 3,030 miles of gas mains and 478,267 service lines. In addition to this extensive distribution system, PGW operates facilities for the liquefaction, storage, and vaporization of natural gas to supplement gas supply taken directly from interstate pipeline and storage companies.

3.1. POPULATION AND SERVICE AREA

The PGW Gas System presently serves the limits of the City with a customer base of approximately 502,000 customers. This service area is shown in Figure 2. The service area consists of an urban area of 134 square miles located in southeast Pennsylvania along the Delaware River. Philadelphia is the largest incorporated area within the Delaware Valley region. According to the United States Census Bureau, as of July 1, 2016, Philadelphia has a population of approximately 1,567,872, an increase of about 2.6 percent since the 2010 census.

3.2. SUPPLY FACILITIES

The principal PGW natural gas supply facilities include nine city gate stations owned in large part by the interstate natural gas pipeline companies serving PGW and two LNG plants, Richmond Plant and Passyunk Plant, owned by the City. The supply facilities also include a gas control center, a deactivated propane/air plant, and two gas holders, one of which has been removed from service.

3.2.1. City Gate Stations

Natural gas is received through nine city gate stations from two interstate natural gas pipeline companies – Spectra Energy ("Spectra") and Transcontinental Gas Pipe Line Corporation ("Transco-Williams"). The two pipeline companies own most of the facilities and land at eight of the nine city gate stations. The pressure delivered to PGW's distribution system is remotely controlled at each of the city gate stations. Eight city gate stations are equipped with gas heaters.

3.2.2. Gas Control Center

The gas control center is located at 800 W. Montgomery Avenue with a backup at the Richmond Plant. The center monitors and controls gas flow and pressure from the nine city gate stations to the high-pressure distribution system. The gas control dispatchers also provide direction to the LNG production plant operators concerning startup, shutdown and gas flow output from the LNG facilities. Operations are facilitated through the use of a computer system located in the data center that includes redundant equipment, cooling and power.

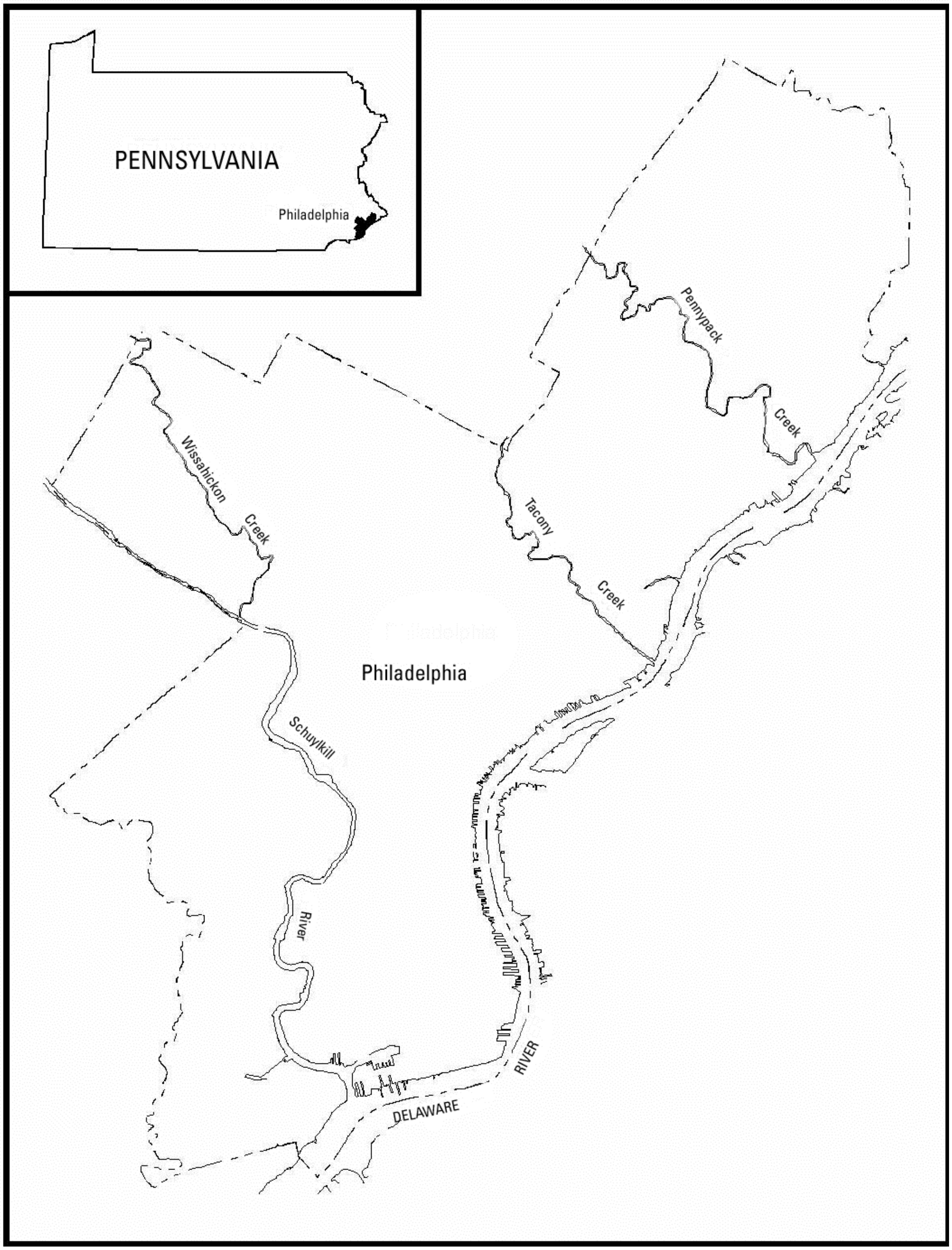

Figure 2 Philadelphia Gas Works Service Area

3.2.3. LNG Facilities

There are two LNG facilities – one at the Passyunk Plant and one at the Richmond Plant. The smaller satellite facility at the Passyunk Plant includes LNG storage and vaporization. It receives liquefied gas supply from the Richmond Plant via cryogenic trailer trucks. The Passyunk Plant consists of one LNG storage tank of 3,066,000 gallons gross capacity (i.e., the equivalent of 253,300 thousand cubic feet ("Mcf") of natural gas) and two LNG vaporizers, each having a capacity of 45,000 Mcf per day resulting in 45,000 Mcf per day planned capacity and 45,000 Mcf per day reserve. The Passyunk Plant also houses PGW's training facilities for gas distribution operations, field services, plastic fusion and driver training.

The Richmond Plant is one of the largest peak shaving facilities in the United States. It includes liquefaction, storage, and vaporization facilities. The liquefaction facility was placed into service in 2005 and replaced the original modified cascade liquefaction facility. The liquefaction facility utilizes open expander technology. It has a daily liquefaction capacity of 16,000 Mcf per day. This technology utilizes energy from the high pressure interstate pipeline system to run the expander/compressors, significantly reducing fuel requirements. Further, this technology utilizes significantly fewer components than the older modified cascade facility, and has resulted in lower operation and maintenance costs. The maximum capacity of the open expander liquefaction facility of 16,000 Mcf per day is not available during the summer months because the demand on the PGW system is not sufficient to create the throughput necessary to run at this capacity.

The two storage tanks at the Richmond Plant have a combined gross capacity of 48,970,000 gallons of LNG (4,045,800 Mcf). Regasification of the liquid natural gas is accomplished with six vaporizers having a total output of 500,000 Mcf per day plus 100,000 Mcf per day in reserve. The Richmond Plant also has facilities to receive LNG from and deliver LNG to cryogenic trailer trucks. In 2016, the control room at the Richmond Plant was expanded and updated.

Both the Passyunk and Richmond Plants are staffed 24 hours per day and have security personnel monitoring the facilities. In addition to on-site personnel, each Plant has fire suppression systems, including high expansion foam and sprinkler systems on tanks, emergency shutdown systems, and various other sensors to monitor the surrounding areas for leaks, fire and smoke.

3.2.4. Gas Holder Storage Facilities

The Richmond Plant has a low pressure gas holder. The Richmond holder has an operating capacity of 1,000 Mcf. It was installed in the manufactured gas era and is in working order. It is used to enhance operational flexibility of the LNG Plant. The Passyunk gas holder has been removed from service.

3.3. DISTRIBUTION FACILITIES

The principal gas distribution facilities consist of approximately 3,030 miles of main, 478,267 service lines, 201 district regulator stations, 573,500 meters (of which 514,000 are active), and miscellaneous distribution valves, instruments, and other appurtenances. PGW operates eight different operating pressure systems; each system is connected to the other by pressure control regulators. The minimum and maximum operating pressures for these systems are as follows:

Pressure System	Pressure (PSIG)	
	Minimum	**Maximum**
Richmond High Pressure Lateral	100	800
Transmission Main TP-1	125	500
Passyunk High Pressure Lateral	75	500
150 PSIG System	60	150
60 PSIG System	30	60
High Pressure Distribution System	10	35
Intermediate Pressure Distribution System	1.5	5
Low Pressure Distribution System (Inches W.C.)	4.5"	14"

Approximately 75 percent (by length) of the gas mains in the PGW distribution system operate at low pressure (Inches W.C.). Also, the majority of PGW customers are served from the low-pressure distribution system.

Approximately 46 percent (by length) of the gas mains are cast iron, 33 percent are steel, 4 percent are ductile iron, and 17 percent are plastic. Of the steel mains, approximately 51 percent are wrapped, coated, and cathodically protected. Approximately 28 percent of the service lines are steel (of which 17 percent are cathodically protected) and 72 percent are plastic.

3.4. PGW TECHNICAL COMPLIANCE

The Technical Compliance and Energy Planning Department provides regulatory guidance and oversight for PGW operations to ensure compliance with applicable Federal (Department of Transportation, Environmental Protection Agency, Federal Emergency Management Agency, Pipeline and Hazardous Materials Safety Administration (PHMSA)), State (Pennsylvania Department of Labor and Industry, Pennsylvania Department of Environmental Protection, and the PUC), and City (Philadelphia Water Department, Philadelphia Department of Public Health, Philadelphia Air Management Services, and Philadelphia Office of Emergency Management) laws and regulations. The Technical Compliance Department is currently staffed with approximately 15 personnel among four operating units: Chemical Services, Environmental Services, Gas Safety Regulatory Services, and Corporate Preparedness.

- Chemical Services provides chemical and physical analyses and advisory services relating to compliance with environmental, health and safety regulations by carrying-out daily, weekly, and monthly analytical services in support of PGW operations, including natural gas composition and BTU analysis, odorant analysis, LNG analysis, glycol analysis, and other analyses as needed. Additionally, Chemical Services manages compliance requirements (in conjunction with Environmental Services) for a total of 12 regulated storage tank systems and provides company-wide regulated waste management support. Chemical Services also provides 24/7 on-call support to PGW operations to meet needs for spill response, analytical services, and supplemental odorization.
- Environmental Services confirm environmental regulatory compliance with Federal, State, and City regulations for all activities conducted at PGW facilities or locations in support of PGW operations. Environmental Services is managing environmental remediation and monitoring efforts among five former manufactured gas plant sites.

- Gas Safety Regulatory Services supports PGW operations with provision and documentation of Federal regulations (PHMSA) advisories, PUC safety inspections, data requests and official correspondences for PGW's Gas Processing, Field Services, and Distribution departments and Operator Qualification management and support.
- Corporate Preparedness is engaged in the ongoing process of identifying and planning for risks of disruption to operations and services. The fundamental goals of Corporate Preparedness are to protect human life, minimize disruptions of service to the organization and customers, minimize financial loss, and to ensure a timely resumption of service.

3.5. OTHER FACILITIES

PGW's central building complex is located near Temple University in the north central section of Philadelphia. There are executive and administrative operating offices in a 180,000 square foot office building constructed in 1988, located at 800 West Montgomery Avenue. Adjacent to that location, the former general office building, located at 1800 N. 9th Street, still houses operations including administrative, distribution and field service dispatch centers, gas control dispatching, a post office, duplicating center, radio repair shop, training facilities, parking facilities, information technology and telecommunications offices, warehousing, as well as a metal fabrication shop. The central complex includes a meter shop and the main automotive maintenance and repair facility. The automotive maintenance and repair facility is responsible for the upkeep of PGW's fleet vehicles, portable compressors, and trailers. PGW also maintains three minor automobile repair facilities at several of its outlying stations. Additional facilities include six customer service district offices, the Tioga station for distribution crews, five other warehousing facilities and three operating stations for field service crews.

3.5.1. Data Center

In 2015, the data center facility and operations were relocated from the 1800 N. 9th Street building into a completely new data center in the 800 W. Montgomery building. With the move, PGW reduced its data center footprint from almost 7,000 square feet to 1,700 square feet and completed a major move toward updating the existing facility. The new data center design includes: a new dedicated backup generator, two fully independent or redundant PECO Energy Company power feeds supplying two new fully redundant uninterruptible power supplies. The modular data center design allows for information technology equipment load growth and provides increased redundancy of cooling systems to essentially four systems.

The data center features a highly efficient hot aisle containment system and is hosting state of the art information technology equipment. A Virtual Desktop Infrastructure project is under way to extend virtualization into the desktop space and to effectively move all PGW desktop computing resources into the new data center. In 2016 a new state of the art supervisory control and data acquisition ("SCADA") system and voice over internet protocol ("VOIP") phone system were installed in the new location.

3.5.2. Combined Heat and Power

A 200 kW natural gas-fired micro-turbine Combined Heat and Power ("CHP") system produces electricity, heat and cooling for the 800 West Montgomery Avenue building. PGW estimates that approximately half of the building's electricity is produced by the CHP at approximately half the cost of that purchased from the local distribution grid. Waste heat from the micro-turbine's exhaust is converted via an absorber chiller into building cooling providing additional annual operating savings. The CHP system is also used by PGW marketing to demonstrate the advantages of CHP systems to customers in the growing CHP service segment.

4. Condition of Facilities

In April 2017, Black & Veatch conducted site inspections of certain above-ground PGW facilities as deemed appropriate. During the inspections, Black & Veatch used three evaluation criteria based on observation to evaluate the condition of each facility. These criteria are described below:

- *Good*: The facility is in condition to provide reliable operation in accordance with design parameters and requires only routine maintenance.
- *Adequate*: The facility is operating at or near design levels; however, non-routine renovation, upgrading and repairs are needed to ensure continued reliable operation. Significant expenditures for these improvements may be required.
- *Poor*: The facility cannot be operated within design parameters. Major renovations are required to restore the facility and assure reliable operation. Major expenditures for these improvements may be required.

4.1. CONSTRUCTION SITES

Inspections at construction sites included the observation of crews, vehicles, power-operated equipment, tools, safety procedures for the crew and public, construction standards, and general quality of work performed.

4.2. METER SETTINGS

Meter setting observations include materials and equipment. Observed meter settings conformed to accepted industry standards, accessibility, and safety and security measures.

4.3. FIELD AND DISTRICT OFFICES

Black & Veatch observed various district office sites, including structures, security features, parking lots, driveways and office equipment, during the site visit. Three of the six district offices are leased to PGW. These include Germantown, Center City and South Philadelphia district offices. PGW owns the West Philadelphia, North Philadelphia, and Frankford district offices. Offices are open from 9:00 am to 5:00 pm and are staffed with approximately 50 customer service agents and four supervisors. All district offices are located near public transportation for easy customer access. In addition to processing payments and handling customer service, the offices also offer LIHEAP application assistance during certain times of the year.

4.4. PERSONNEL

During the inspection period, Black & Veatch conducted interviews and was assisted by PGW staff who are experienced, qualified, well trained, and knowledgeable in their assigned tasks. In addition to details of the operations, they were knowledgeable in details of routine and preventative maintenance procedures PGW has in place.

The following is a list of key areas discussed in conducting inspections and in the collection of system data:

- Construction
- Corrosion Engineering
- Field Offices
- District Offices
- Treasury
- District Regulators
- Field Services
- Gas Supply
- System Losses & Meter Maintenance Programs
- Leak Surveys
- Operations
- SCADA System
- Meter Settings
- City Gates and LNG Plants
- Accounts Receivable
- Data Center

4.5. FACILITY INSPECTIONS

The following facilities were inspected in April 2017:

SUPPLY FACILITIES

Liquefied Natural Gas Facilities

Richmond Plant
Passyunk Plant

City Gate Stations

030	Penrose
034	Richmond
060	Somerton
Ashmead	Whitman
Ivy Hill	

DISTRIBUTION FACILITIES

Construction Sites

Location: Penn Street, Leiper Street, Church Street, Imogene Street and Adams Avenue in the Frankford area of the City.

Description of Work:
- 12 inch high pressure and 6 inch low pressure replacement. Replaced 20 inch high pressure cast iron main (previously abandoned) and 6 inch low pressure cast iron main.
- Installed 1,501 feet of 12 inch plastic main and 2,306 feet of 6 inch plastic main.
- Renewed 46 services and reconnected an additional 146 services.

Location: Montague Street, Walker Street, Devereaux Street, Robbins Avenue, Benner Street and Erdick Street in the Tacony area of the City.

Description of Work:
- 12 inch low pressure and 6 inch low pressure replacement. Replaced 12 and 6 inch low pressure cast iron main.
- Installed 600 feet of 12 inch plastic main and 4,600 feet of 6 inch plastic main.
- Renewed 97 services and reconnected an additional 130 services.

Location: Marsden Street, Torresdale Avenue, Princeton Avenue, Disston Street

	and Longshore Avenue in the Tacony area of the City.
Description of Work:	• 6 inch low pressure replacement. Replaced 6 inch low pressure cast iron main. • Installed 2,230 feet of 6 inch plastic main and 2,200 feet of 4 inch plastic main. • Renewed 79 services and reconnected an additional 103 services.

Commercial/ Industrial Meter Settings

3600 Salmon St., Weber paper mill
5000 S. Broad St., Navy Yard
2501 Margaret Street, AdvanSix/Honeywell
1025 E. Ontario (I St. and Ontario St.)

OTHER FACILITIES

PGW Main Office	Germantown district office (lease)
PGW CHP facility	Center City district office (lease)
SCADA control room	West Philadelphia district office (PGW owned)
Data Center	

4.6. CONCLUSIONS

All observed facilities, vehicles, equipment and warehouse stock appeared to be reasonably maintained and in good operating condition. During the inspections, Black & Veatch identified only minor items not in good operating condition as would be expected during the normal course of operation. These items were either in the process of being repaired or were essentially retired in place. Employees appeared to be knowledgeable of their job requirements and well trained.

PGW's highest operating priority is response to emergencies and the maintenance of a safe gas distribution system. PGW maintains maps and other records of the distribution system in good order and has comprehensive written construction, operating and maintenance standards and procedures. Its personnel appeared well trained in the operation and maintenance of the gas distribution system. PGW is routinely actively involved in entering its facility records (corrosion, service and leak records) into computer databases, thus facilitating and improving the accuracy of accessing information. PGW has continued to monitor its security measures at its major facilities, including the two LNG facilities, the city gate stations, and the headquarters building complex. PGW has concrete barriers around critical facilities at Richmond and perimeter fencing around both Passyunk and Richmond Plants.

Based on the physical inspections and interviews conducted in April 2017, and the level of maintenance expense and capital improvements reflected in this Report, Black & Veatch is of the opinion that PGW operates and maintains its system in accordance with current regulatory standards and generally accepted industry practices.

5. PGW Gas Supply

PGW manages its gas supply through a mix of flowing supplies, off-system underground storage, and City-owned and PGW-operated LNG facilities. PGW utilizes this mix to meet its obligation to serve customers' demand on the coldest day (peak day) as well as customers' annual requirements. PGW's gas distribution facilities are directly connected to Spectra through four city gate stations and to Transco-Williams through five city gate stations. All gas delivered to customers by PGW is transported to the city gate stations through these pipelines. During predominantly off-peak periods, a portion of the purchased gas supply is stored in off-system underground storage facilities connected to these two pipelines or in PGW's LNG facilities. Through the effective use of off-system storage and LNG, PGW is able to more efficiently utilize its transportation contracts with Spectra and Transco-Williams.

5.1. SUPPLY SERVICES

PGW purchases gas through a combination of term contracts and spot market purchases. Natural gas supplies are purchased under a portfolio approach intended to secure the lowest price consistent with reliability of supply. Consideration is given to maintaining a diversity of sources and types of supply. During the 2017 fiscal year, purchased gas costs are estimated to account for approximately 69.0 percent of the total gas supply expenses of $176.7 million and approximately 21.3 percent of total gas revenues of $571.4 million. The cost of gas supply is a function of the prices paid and the quantity purchased, both of which are variable. While this price component can be managed by PGW to some extent through the timing of purchases, the prices paid are largely determined in a very competitive and a sometimes volatile marketplace. While the total annual volumes purchased are highly dependent on temperatures during the heating season and are beyond the utility's direct control, PGW can manage the timing of purchases and hence prices to a limited degree, by utilizing off-system and LNG storage.

5.2. TRANSPORTATION AND STORAGE SERVICES

All of PGW's gas purchases are ultimately transported from the sources of supply to the city gate stations through either Spectra or Transco-Williams facilities. Injections and withdrawals of gas from off-system storage also rely on these two pipelines. Table 1 summarizes the existing transportation and storage agreements. As shown in this table, PGW's currently available pipeline capacity is almost equally divided between the two pipelines. Of PGW's total contract pipeline capacity of 438,793 Mcf per day, Spectra accounts for 223,325 Mcf per day, or 51 percent, and Transco-Williams accounts for 215,468 Mcf per day, or 49 percent. The initial terms of the major contracts for the Spectra transportation service (CDS and FT) expired prior to the 2011-12 winter period and the initial term of the major contract for the Transco-Williams transportation service (FT) expired after the 2011-12 winter period. These contracts renew on an automatic year-to-year basis. PGW's current long-term plan assumes that these contracts may also be renewed as longer term contracts.

Table 1 Gas Supply, Transportation, and Storage Contracts

		Transportation[c]		Storage[d]	
Contract	Contract Expiration[b]	dt/day	Mcf/day[f]	dt/day	Mcf/day[f]
Transco-Williams					
FT - 3691	2020	165,212	157,345		
PSFT - 5001	2020	1,967	1,873		
S-2	2019	5,191	4,944	5,191	4,944
GSS[e]	2023	53,871	51,306	53,871	51,306
WSS[a][e]	2018			35,115	33,443
Subtotal		226,241	215,468	94,177	89,693
Spectra					
CDS - 800232R	2018	75,000	71,429		
FT1 - 800233R	2018	23,822	22,688		
FT1 - 800514R	2019	18,000	17,143		
FT1 - 800515R	2019	18,000	17,143		
FTS2 - 330791	2019	5,394	5,137		
Dominion/GSS/FTS7[e]	2020	6,815	6,490	6,815	6,490
Dominion/GSS/FTS8[e]	2020	22,495	21,424	22,495	21,424
SS1A	2023	44,118	42,017	44,118	42,017
SS1B	2023	20,847	19,854	20,847	19,854
Subtotal		234,491	223,325	94,275	89,785
Total		460,732	438,793	188,452	179,478

(a) Transportation included in FT.
(b) Contracts are assumed renewed based on evergreen clauses beyond their expiration date.
(c) Reference: SDS 6, Page 4 of 4, In the Matter of Proposed Operating Budget FY 2016-2017, Supporting Documentation Gas Costs and Purchasing Plans, Volume I, June 2016.
(d) Reference: SDS 6, Pages 1-2 of 4, In the Matter of Proposed Operating Budget FY 2016-2017, Supporting Documentation - Gas Costs and Purchasing Plans, Volume I, June 2016.
(e) Volumes reflect 87.5% contract limitation on maximum monthly storage withdrawal.
(f) Mcf conversion at 1.050 BTU.

Due to the highly seasonal nature of PGW's load (demand), the efficiency of pipeline transportation service can be increased significantly through the use of storage services. During periods when PGW's load is less than the contracted transportation service, PGW may utilize the available capacity to deliver gas to off-system storage facilities or to liquefy gas for storage in its LNG facilities. The ability to store gas off-system and in LNG facilities provides three significant benefits. First, less capacity needs to be reserved on interstate pipelines to serve higher seasonal loads to the extent that gas can be stored in off-system storage and local LNG facilities. Second, less natural gas needs to be actually purchased during the generally higher cost winter period to the extent that gas be can purchased during the lower cost non-winter period, stored and then redelivered from storage during the winter. Third, market area storage provides increased security of supply.

Of PGW's total contract daily storage withdrawal capacity of 179,478 Mcf per day, services provided on Spectra account for 89,785 Mcf per day, or 50 percent, and Transco-Williams accounts for 89,693 Mcf per day, or 50 percent. Transco WSS storage does not include bundled transportation so volumes from this storage must be transported using the FT transportation contract. All other storage volumes are bundled storage and transportation. This storage deliverability is used primarily to reduce contract demand for long haul transportation services and to reduce the quantity of gas that needs to be purchased during the typically higher cost winter period to meet winter peak demand.

During the 2017 fiscal year, transportation and storage capacity costs are estimated to account for approximately 31 percent of the total gas supply expenses of $176.7 million. The prices paid for these services are determined by long-term contracts and tariff rates regulated by the Federal Energy Regulatory Commission ("FERC"). Generally, these components of gas supply cost represent the purchase of capacity, are relatively fixed, and do not vary directly with the volumes of gas purchased.

5.3. LNG FACILITIES

The City owns and PGW operates two LNG facilities: the Richmond Plant and the Passyunk Plant. The LNG facilities are primarily used to ensure availability of supply needed to serve peak day demand. The LNG facilities provide capacity that would otherwise be needed from flowing gas and off-system storage (i.e., pipeline and storage capacity) to meet peak day demands. The LNG facilities also allow for a nominal reduction in purchases during the higher cost winter period. Based upon current pipeline and storage charges, which have remained relatively constant over the past five years, PGW estimates that utilizing the existing LNG facilities in lieu of additional pipeline and storage capacity saves approximately $75 million per year.

Gas is liquefied at the Richmond Plant. After liquefaction, the LNG is stored and vaporized at both the Richmond Plant and the Passyunk Plant. Total liquefaction (converting natural gas to liquid state for storage) capacity at the Richmond Plant existing facilities is approximately 16,000 Mcf per day. The Richmond Plant can store approximately 49 million gallons of LNG (4.05 Bcf natural gas equivalent) and the Passyunk Plant can store approximately 3.0 million gallons of LNG (253,000 Mcf natural gas equivalent). The LNG stored at the Passyunk Plant is typically liquefied at the Richmond Plant and then transported by cryogenic trailer trucks to the Passyunk Plant, although LNG can also be purchased and transported from third parties. Total vaporization (converting the liquid LNG to gas) capacity at the Richmond Plant with six vaporizers, is 463,000 Mcf per day and 100,000 Mcf per day in reserve, and the capacity at the Passyunk Plant with two vaporizers, is 45,000 Mcf per day and 45,000 Mcf per day in reserve. The highest daily vaporization rate from the LNG facilities of approximately 360,000 Mcf occurred in January 1994 when PGW recorded its maximum system sendout.

5.4. SUPPLY AND DEMAND BALANCE

Table 2 summarizes the supply mix that was used to meet historical peak day demand from fiscal years 2012 through 2017, and the supply mix that would enable PGW to meet future demand assuming design conditions over the 2018 through 2022 fiscal years. PGW's highest actual historical peak day occurred on January 19, 1994, with a demand (sendout) of 752,707 Mcf. The average temperature on that day was 2°F. For design purposes, PGW projects total demand based on a 65 heating degree-day ("HDD") which translates to a design day average temperature of 0°F. This is the lowest expected temperature that PGW believes could reasonably occur and PGW did experience a design day in the 1980's with an average temperature of 0°F. During the past six years, pipeline deliveries (flowing gas plus underground storage) have met between 72.0 and

92.5 percent of actual peak day demand. These figures are relatively high due to significantly warmer than normal winters. During the projection period, approximately 64.8 percent of peak day demand under design conditions would be met from pipeline supply with the remaining 35.2 percent met from LNG. PGW must maintain these capacity levels because it is considered the supplier of last resort if the customer's supplier is unable to deliver natural gas. PGW assigns proportionate shares of pipeline capacity and cost to firm transportation customers. Table 2 shows that PGW has sufficient capacity to meet forecast demand requirements.

Table 3 summarizes the supply mix that is projected to meet annual requirements during normal and design years from 2018 through 2022. For supply planning purposes, PGW defines a normal year as one containing 3,855 HDDs[5]. The supply planning normal year is based on the ten year average HDDs as recorded at the Richmond Plant (PGW had previously used 30-year average HDDs as normal weather, and the Settlement Agreement is based on 20-year average HDDs *see Section 7.1.5*). PGW defines a design year as one containing 5,280 HDDs. A design year is based on the temperatures experienced during the 1977-1978 winter, which was the coldest recorded winter in the last 60 years.

Even though 100 percent of PGW's supply is originally transported through one of the two interstate pipelines, the supply components shown in Table 3 are based on the source of gas when ultimately delivered to the end user. As shown, approximately 61.4 percent of PGW's total gas pipeline supply during a normal year is expected to flow through the Spectra pipeline system. On a projected normal annual basis, approximately 97 percent of volume is delivered to end users through the interstate pipeline systems (of which 81 percent is flowing gas[6] and 19 percent is off-system storage), and 3 percent is delivered from the LNG facilities.

[5] PGW considers the 10-year normal weather average of 3,855 HDDs when planning for supply needs. The difference in volumes between 10-year normal weather and 20-year normal weather as proposed in the Settlement Agreement is not shown in Table 3, however the revenue impact of the Settlement Agreement is shown as a pro forma adjustment in subsequent tables in this Report.

[6] Flowing gas represents gas that is purchased at the same time as delivered to customers.

Table 2 Peak Day Supply and Demand

	Actual					Estimate	Projected - Design [a]				
Description	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Actual[b]											
Peak Heating Degree-Days	41	44	52	54	49	44					
Demand - Mcf	466,478	585,205	635,784	681,394	628,043	574,726					
Supply - Mcf											
Pipeline/Storage	431,293	497,267	457,541	531,051	528,416	497,354					
LNG	35,185	87,938	178,243	150,343	99,627	77,372					
Total	466,478	585,205	635,784	681,394	628,043	574,726					
Projected - Design											
Design Heating Degree-Days[c]							65	65	65	65	65
Demand - Mcf[c]							670,419	674,027	677,601	681,168	684,732
Supply - Mcf											
Pipeline/Storage [d]							438,792	438,792	438,792	438,792	438,792
LNG (net)							231,627	235,235	238,809	242,376	245,940
Total							670,419	674,027	677,601	681,168	684,732

(a) Assumes no unbundling of services.

(b) For 2012-2016, SDS 7, In the Matter of Proposed Operating Budget FY 2016-17, Supporting Documentation - Gas Costs and Purchasing Plans, Volume I, June 2016.

(c) SDS 6, Page 3 of 4, In the Matter of Proposed Operating Budget FY 2016-17, Supporting Documentation - Gas Costs and Purchasing Plans, Volume I, June 2016.

(d) SDS 6, Page 4 of 4, In the Matter of Proposed Operating Budget FY 2016-17, Supporting Documentation - Gas Costs and Purchasing Plans, Volume I, June 2016.

Table 3 Annual Supply and Demand

Line No.	Description	Projected 2018	2019	2020	2021	2022
		dt	dt	dt	dt	dt
	Normal Year - 3,855 Heating Degree-days					
	Requirements - Sales					
1	Firm Service	46,456,119	46,656,209	46,898,021	47,123,723	47,381,514
2	Boiler and Power Plant Service	0	0	0	0	0
3	Load Balancing Service	0	0	0	0	0
4	Cogeneration Service	18,112	18,112	18,112	18,112	18,112
5	Gas Transportation Service	5,221,658	5,332,559	5,420,366	5,488,796	5,542,645
6	LNG Sales	1,068,000	1,068,000	1,068,000	1,068,000	1,068,000
7	Natural Gas Vehicle Service	0	0	0	0	0
8	Trigen	0	0	0	0	0
9	Grays Ferry	0	0	0	0	0
10	Subtotal Sales	52,763,889	53,074,880	53,404,499	53,698,631	54,010,271
11	Plant Use	146,654	147,354	148,355	148,437	148,794
12	Transport Fuel	1,245,384	1,250,547	1,254,749	1,253,781	1,261,477
13	Storage Fuel	359,544	359,843	297,079	307,138	291,528
14	Storage Injections	14,640,193	14,653,403	12,057,805	12,520,941	11,837,183
15	Liquefaction	2,381,702	2,378,531	2,384,901	2,362,531	2,346,531
16	Total Demand	71,537,366	71,864,558	69,547,388	70,291,459	69,895,784
	Supply					
17	Spectra	34,771,911	35,339,332	34,091,442	34,045,629	33,808,007
18	Transco-Williams	19,785,243	19,524,955	21,171,679	21,192,075	21,856,784
19	Pipeline Subtotal	54,557,154	54,864,287	55,263,121	55,237,704	55,664,791
20	Spectra	8,259,829	8,267,710	6,906,142	7,184,126	6,845,371
21	Transco-Williams	6,355,204	6,360,504	4,981,464	5,452,719	4,964,693
22	Storage Subtotal	14,615,033	14,628,214	11,887,606	12,636,846	11,810,064
23	LNG	2,365,179	2,372,057	2,396,661	2,416,909	2,420,929
24	Total Supply	71,537,366	71,864,558	69,547,388	70,291,459	69,895,784
	Design Year - 5,280 Heating Degree-days					
	Requirements - Sales					
25	Firm Service	59,021,437	59,259,829	59,551,082	59,818,494	60,128,326
26	Boiler and Power Plant Service	0	0	0	0	0
27	Load Balancing Service	0	0	0	0	0
28	Cogeneration Service	18,112	18,112	18,112	18,112	18,112
29	Gas Transportation Service	6,346,775	6,475,842	6,576,532	6,657,880	6,721,547
30	LNG Sales	1,068,000	1,068,000	1,068,000	1,068,000	1,068,000
31	Natural Gas Vehicle Service	0	0	0	0	0
32	Trigen	0	0	0	0	0
33	Grays Ferry	0	0	0	0	0
34	Subtotal Sales	66,454,324	66,821,783	67,213,726	67,562,486	67,935,985
35	Plant Use	160,204	165,238	167,319	168,583	170,490
36	Transport Fuel	1,548,127	1,556,161	1,563,783	1,569,576	1,575,029
37	Storage Fuel	296,275	298,719	303,686	311,907	309,467
38	Storage Injections	12,065,547	11,992,404	12,286,802	12,680,788	12,398,110
39	Liquefaction	1,886,215	2,137,188	2,143,559	2,121,188	2,105,192
40	Total Demand	82,410,692	82,971,493	83,678,875	84,414,528	84,494,273
	Supply					
41	Spectra	36,711,047	36,548,088	36,770,434	36,582,067	36,300,914
42	Transco-Williams	30,167,787	30,901,985	31,007,411	31,451,307	32,004,273
43	Pipeline Subtotal	66,878,834	67,450,073	67,777,845	68,033,373	68,305,187
44	Spectra	6,696,452	6,519,288	6,622,206	6,738,451	6,671,782
45	Transco-Williams	5,342,391	5,446,774	5,638,181	5,915,467	5,698,890
46	Storage Subtotal	12,038,844	11,966,062	12,260,388	12,653,918	12,370,672
47	LNG	3,493,015	3,555,358	3,640,642	3,727,237	3,818,414
48	Total Supply	82,410,692	82,971,493	83,678,875	84,414,528	84,494,273

Reference: SDS 4, In the Matter of Proposed Operating Budget FY 2016-17, Supporting Documentation - Gas Costs and Purchasing Plans, Volume I & II, June 2016.

6. Capital Improvement Program

PGW uses a formal process of evaluating capital needs and funding programs to meet those needs. This annual capital planning process is used to identify potential capital improvements at the departmental level based upon certain operating and economic assumptions, evaluate these requirements, and establish priorities considering available financial resources. Based upon this process, PGW formulated a CIP for a six-year period based upon the approved capital budget for 2017 and the forecast period 2018 through 2022. For the large operating departments whose needs comprise the vast majority of PGW's capital requirements, the gas design load forecast is one of the key elements in determining their capital requirements. In addition to ensuring the continued safety of PGW's operations, reliability of service is a major concern when considering the need for capital resources. The Gas Processing Department addresses these concerns by providing and maintaining the necessary facilities to take delivery of pipeline supplies and provides supplemental gas to satisfy peak load requirements. The Distribution Department, in its capital budget process, is concerned with continuing to provide and properly maintain a distribution network and to safely deliver natural gas at adequate pressure to satisfy the requirements of the appliances and equipment of PGW's customers.

Also of major importance is to ensure funding is available to provide facilities to support new load opportunities as identified in the Marketing Department's forecast of customer additions. This forecast drives budget requirements for the Distribution Department for main and service additions, and in Field Services to identify new meter installations that must be provided for in the Capital Budget. Additional systems and technology initiatives are also considered to improve both efficiency and customer service. Under the terms of the Management Agreement, PGW submits the annual CIP to the Director of Finance and the PGC for their review and recommendation to City Council for budget approval.

In keeping with PGW's philosophy of maintaining a safe and reliable infrastructure, all capital projects are assigned a priority. The highest priority projects (Priority 1 and Priority 2) relate to expenditures required for maintaining the safety and reliability of PGW's infrastructure. Priority 3 expenditures relate to enforced main relocations that are based on City, State, and Federal mandated underground infrastructure projects. Priority 4 expenditures relate to projects that will result in additional revenues from load growth opportunities, while Priority 5 are for those expenditures associated with business improvements that increase operational efficiencies and/or productivity.

Table 4 presents a summary of PGW's historical and forecasted CIP expenditures. Capital expenditures for the major departments are shown in the table. Capital expenditures for all departments other than Gas Processing, Distribution, Field Services, and Fleet Operations are grouped together under the general category "Other Departments".

Proposed capital expenditures over the five-year projection period, 2018 through 2022, total $575.8 million (net of salvage, contributions, and reimbursement). For fiscal year 2017, PGW's budgeted capital expenditure of $132.6 million (net of salvage, contributions, and reimbursement) represents a $32.3 million increase from the actual fiscal year 2016 capital expenditures. The major contributing factor for this significant spending increase is associated with implementation of PGW's Long-Term Infrastructure Improvement Plan ("LTIIP") and its increased main replacement goals, particularly high pressure/large diameter mains. The majority of the fiscal year 2017 capital expenditures, $95.8 million or 72.2 percent, are committed to Distribution Department projects. Field Services and Other Departments have planned expenditures of about $6.8 million and $8.3 million, respectively, in fiscal year 2017. Gas Processing and Fleet Operations have planned expenditures of about $8.6 million and $13.1 million, respectively, in fiscal 2017. Over the five-year projected period, Distribution Department projects have planned expenditures of $487.4 million, which represents 84.7 percent of the total capital spending. The majority of the Distribution Department capital projects involve the replacement of gas services and ongoing and required main replacements for high pressure, intermediate and low-pressure mains identified in PGW's LTIIP. Based on our inspections of existing facilities in April of 2017 and under normal operating conditions, the proposed capital expenditures should be sufficient to maintain the system in good condition.

A listing of projects approved in the capital budget for the fiscal year 2017, by major department, is shown in Table 5. This table also shows the priority assigned to each project. In addition to the estimated $99.9 million as shown in Table 5 for fiscal year 2017, PGW anticipates completing $32.8 million of capital improvements carried over from prior fiscal years.

6.1. GAS PROCESSING

As shown in Table 4, the budgeted capital spending for the Gas Processing Department is $8.6 million in fiscal year 2017 (including carryover projects). These capital expenditures are for normal additions and replacements necessary to maintain the safety and reliability of natural gas measurement and control facilities and PGW's LNG supplemental gas capabilities. Project spending is based upon the inventory of projects to be undertaken. For example, the forecast in FY 2019 includes $5.0 million for the replacement of a Shut-off Valve at the Passyunk LNG Tank, which is non-recurring. Also, the work pattern to complete a project will be a factor in the determination of the carryover spending from fiscal year to fiscal year. This affects the respective spending pattern related to the various projects.

6.2. DISTRIBUTION

The ongoing cast iron main replacement capital program is funded through base rates and the Distribution System Improvement Charge ("DSIC"). The base rate funded portion of the program has historically averaged approximately $20 million per year which has funded the removal of approximately 18 miles of cast iron mains annually. The scope of this program is consistent with the recommendations made by Advantica in a June 2008 "Benchmarking Analysis, Risk Analysis and Model, Replacement Analysis and Computerized Main Prioritization and Ranking Program" study. Cast iron pipe was generally used by natural gas utilities many decades ago and was quite common for low-pressure gas mains such as PGW's. While this pipe has performed well, as it ages the pipe becomes brittle and the joints deteriorate, thereby resulting in leaks. Over the last 20 years or so, natural gas utilities have been systematically replacing cast iron mains generally with plastic for low-pressure systems and sometimes wrapped and cathodically protected steel for higher pressure systems.

The estimated capital spending for fiscal year 2017 for the Distribution Department is $95.8 million. This level of capital spending in the Distribution Department is a continuation of increases which began in fiscal year 2013. This significant increase in Distribution Department spending is associated with the replacement of at-risk mains as currently sanctioned in PGW's LTIIP. This program provides the opportunity for PGW to implement a DSIC that will allow PGW to recover the annual cost for its accelerated replacement program on a pay-as-you-go basis, thus avoiding the need to issue additional debt financing to support the program. PGW's accelerated program has the benefit of the following two independent review studies in November 2012 of PGW's cast iron mains in formulating its LTIIP:

- GL Noble Denton Study – 12 Inch & Larger Cast Iron Comprehensive Mains Benchmark Study
- GL Noble Denton – 12 Inch 10-35 psig Cast Iron Mains Benchmark Study

In addition, PGW secured the services of DNV GL to conduct a Benchmarking Summary Report on PGW's Cast Iron Main Replacement Program. The report was completed in January, 2016. In conducting this report, DNV GL utilized PGW's mains and historical leak repair database to conduct an analysis to determine an appropriate annual replacement budget to reduce risk. Five different replacement options were considered using DNV GL's Main Replacement Prioritization software, concluding that replacing between 30 and 50 miles of main per year over a ten year time frame results in a good, cost effective strategy to reduce risk.

Table 6 summarizes the miles of cast iron distribution mains replaced, number of service lines replaced and the capital expenditures for mains and service line replacement for the period 2000 through 2016. As shown in Table 6, the amount of cast iron mains replaced by PGW increased significantly beginning in fiscal year 2013, due to implementation of the DSIC. The 2016 replacement rate of 31.5 miles per year equals approximately 2.2 percent of the total remaining cast iron mains. The decline in the number of service lines replaced is primarily a function of the number of service lines that are connected to the mains replaced and the fact that the total inventory of unprotected steel service lines declined approximately 60 percent from about 225,000 in 2000 to 91,000 in 2016. The capital improvement expenditures for cast iron mains and unprotected steel service lines have more than doubled from approximately $27.2 million in 2001 to $68.6 million in 2016.

The level of main replacement represents a balance among several factors including prioritizing replacements to areas of highest reported leaks, working within the constraints of a highly populated urban area, providing sufficient supervision and oversight by PGW of internal and external construction crews, and the level of rate or surcharge revenues approved by the PUC to fund the replacements. Approximately 18 miles of the current mains replacement program is covered by the current level of approved base rates (which is approximately $20 million per year) and 10 miles through the original DSIC set at a level of 5 percent. The original 5 percent DSIC equated to approximately $22 million per year above the level reflected in current base rates. PGW recently received approval from the PUC to increase the cap on the DSIC from 5 percent to 7.5 percent of the amount billed to customers starting in fiscal year 2016. This increase in the cap will allow PGW to recover up to $33 million per year in the DSIC (which, when combined with the level in base rates, results in approximately $53 million per year). To the extent that PGW and its regulators agree to further accelerate the level of annual mains (and related service lines) replacement, the preferred method of financing these capital improvements would be through the existing DSIC surcharge mechanism or, as an alternative, through increased base rates.

The largest department expenditures relate to the replacement of small diameter (1.25 inches or less) services, which are necessary as a result of the distribution mains replacements as well as leaking services and collection activities, and implementation of PGW's main replacement program, both the 18-mile program as well as the accelerated replacement program.

6.3. FIELD SERVICES

The estimated capital spending for fiscal year 2017 for the Field Services Department is $6.8 million. PGW embarked on an aggressive program to retrofit customer meters with electronic devices to maximize the effectiveness of its automated meter reading system ("AMR"). This program is 100 percent complete. PGW continues to realize benefits from the implementation of the automated meter reading system, including fewer estimated readings, increased reading accuracy, reduction in meter reading personnel and reduced customer complaints. While replacing meters and AMR devices, PGW is testing its meters to comply with PUC requirements.

6.4. FLEET OPERATIONS

The Fleet Operations Department estimated capital expenditures are $13.1 million for fiscal year 2017. The majority of the estimated capital expenditures for this department are associated with vehicle and mobile equipment replacements. The majority of the vehicle replacements are targeted to support critical field operations activities. The FY 2017 spending level in Fleet Operations is based upon PGW's normal replacement criteria. In any particular year spending in this area is based upon the inventory of vehicles to be replaced. Vehicles are analyzed on an annual basis to determine their respective useful life. Also, PGW experienced a delay in the delivery of acquired vehicles in their two year capital budget authorized spending lifespan. PGW sought PGC reauthorization to extend the spending period to three fiscal years.

6.5. OTHER DEPARTMENTS

The Other Departments category includes estimated capital expenditures for Facilities Services, Information Services, Customer Affairs, and other miscellaneous departments. For fiscal year 2017, the combined spending of these departments is estimated at $8.3 million. Projects contributing to this level of spending include funding to complete the replacement of PGW's existing PBX phone system, as well as cost to install Biosparge and Soil Extraction Systems at PGW's Passyunk Plant location. Funding is also requested to maintain PGW's information systems infrastructure in proper condition to support the business in providing service to the customer in an efficient manner.

Table 4 Historical and Proposed Capital Improvement Program Expenditures
(Thousands of Dollars)

	Fiscal Year Ending August 31,[a]											
	Actual					Estimate	Projected					Total
Category	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2018 - 2022
	$	$	$	$	$	$	$	$	$	$	$	$
Gas Processing	3,675	3,095	5,350	2,569	1,726	8,639	7,287	8,897	4,776	2,286	3,873	27,119
Distribution	44,751	57,394	61,768	65,220	82,592	95,812	89,625	96,070	98,291	100,563	102,888	487,437
Field Services	3,441	3,727	5,393	6,055	6,384	6,770	7,733	7,970	8,082	8,356	8,487	40,628
Fleet Operations	1,552	1,111	2,233	3,085	2,592	13,126	2,157	1,276	551	4,317	4,229	12,530
Other Departments [b]	3,713	7,048	8,587	8,570	7,039	8,285	2,208	1,415	1,449	1,487	1,519	8,078
Subtotal	57,132	72,375	83,331	85,499	100,333	132,632	109,010	115,628	113,149	117,009	120,996	575,792

(a) All figures are net of Salvage, Reimbursements, and Contributions.

(b) Includes Approved and Budgeted Program for Building Services, Customer Affairs, Information Technology, and Systems Technology.

Table 5 Capital Projects for Fiscal Year 2017
(Thousands of Dollars)

Category	Priority 1 Safety	Priority 2 Reliability	Priority 3 Enforced	Priority 4 New Rev.	Priority 5 Efficiency	Other	Total
	$	$	$	$	$	$	$
Gas Processing							
Install Block Valve Upstream of V-101 - Richmond	54	-	-	-	-	-	54
Replace H-2 Heater - Richmond	870	-	-	-	-	-	870
DCS Upgrade - Richmond	875	-	-	-	-	-	875
Relocate LNG Control room Transformer - Passyunk	635	-	-	-	-	-	635
Replace Foam Water Piping - Passyunk	975	-	-	-	-	-	975
Replace LNG Tank Dike - Passyunk	83	-	-	-	-	-	83
Replace Oil Recovery Above-ground Storage Tank System - Passyunk	179	-	-	-	-	-	179
Remove and Replace Electrical Panel - Passyunk	105	-	-	-	-	-	105
Replace P-106 Pump - Richmond	320						320
Miscellaneous Capital Additions & Replacements	489	-	-	-	-	-	489
Total Gas Processing	4,585	-	-	-	-	-	4,585
Distribution							-
Prudent Main Replacements	10,300	-	-	-	-	-	10,300
LTIIP Accelerated Cast Iron Main Replacement	3,745	-	-	-	-	-	3,745
High Pressure Main Valves Replacements	-	-	-	-	-	-	-
Long Term Infrastructure Plan-Incremental Cast Iron	10,941	-	-	-	-	-	10,941
Renewal of Small Service-Incremental Cast Iron	-	-	-	-	-	-	-
Replacement/Rehabilitation of HP Main Valves	506	-	-	-	-	-	506
Large Diameter/High Pressure Main Replacement	12,719	-	-	-	-	-	12,719
Small Service Replacements	20,474	-	-	-	-	-	20,474
Large Service Replacements	1,098	-	-	-	-	-	1,098
Small Service Installations	-	-	-	4,074	-	-	4,074
Large Service Installations	-	-	-	2,083	-	-	2,083
Customer Metering & Regulator Installation	-	-	-	585	-	-	585
Installations For Ahead-Of-Paving and Addt'l Loads	-	-	-	1,253	-	-	1,253
Replace Pressure Regulating/Corrosion Control Facilities	-	414	-	-	-	-	414
Purchase Tools, Equipment	-	252	-	-	-	-	252
Pressure Force Paper Chart Upgrade Project	-	-	-	-	-	-	-
Replace Tools, Equipment	-	1,341	-	-	-	-	1,341
Enforced Relocations For System Pressure	-	-	10,040	-	-	-	10,040
Enforced Relocations I-95 Reconstruction	-	-	480	-	-	-	480
Local Mains to Supply New Houses/Increased Capacity	-	-	-	2,147	-	-	2,147
Reimbursements/Contributions	-	-	-	-	-	(4,097)	(4,097)
Total Distribution	59,783	2,007	10,520	10,142	-	(4,097)	78,355
Field Services							-
Regulator Purchases	32	-	-	-	-	-	32
Regulator Installations	-	-	-	41	-	-	41
Meter Installations	-	-	-	1,490	-	-	1,490
Shop Equipment	-	-	-	-	162	-	162
Training Equipment Replacements	-	-	-	-	-	-	-
Meters Purchases for Automatic Meter Reading	-	2,527	-	-	-	-	2,527
AMR Installations	-	-	-	-	140	-	140
AMR Replacements	-	-	-	-	2,373	-	2,373
BPS Metscan & LBS Metretek	272	-	-	-		-	272
Instrumentation Purchases and Installations	-	-	-	-	-	-	-
Total Field Services	304	2,527	-	1,531	2,675	-	7,037
Fleet Operations							-
Vehicle Replacements	-	4,197	-	-	-	-	4,197
Mobile Equipment Replacements	-	677	-	-	-	-	677
Mobile Equipment Additions	80	-	-	-	-	-	80
Shop Equipment	44	-	-	-	-	-	44
Salvage	-	-	-	-	-	-	-
Total Transportation	124	4,874	-	-	-	-	4,998
Other Departments							
Total Other Departments	1,800	2,794	-	-	310	-	4,904
Total FY 2017 Projects	66,596	12,202	10,520	11,673	2,985	(4,097)	99,879
Carryover from Years Prior to FY 2017	22,159	2,520	6,701	1,309	64	-	32,753
Total FY 2017 Expenditures (Net)	88,755	14,722	17,221	12,982	3,049	(4,097)	132,632

Table 6 Historical Cast Iron and Unprotected Steel Service Replacement

Line No.	Description	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
		Fiscal Year Ending August 31,																
1	Cast Iron Main Replaced (miles)	7.81	18.45	21.49	22.57	19.24	19.01	18.93	18.28	17.98	8.67	17.98	18.20	18.35	22.39	28.09	29.25	31.50
2	CI Main Replacement Capital ($000)	$ 8,282	$ 15,148	$ 16,108	$ 13,717	$ 20,393	$ 20,183	$ 17,582	$ 20,180	$ 21,371	$ 18,385	$ 21,718	$ 19,278	$ 24,387	$ 30,680	$ 37,414	$ 38,751	$ 52,712
3	Services Removed from Inventory																	
4	Unprotected - Bare	(17,888) [a]	(8,211)	(6,688)	(7,011)	(7,846)	(40,477) [a]	(8,046)	(4,944)	(5,280)	(5,347)	(2,794)	(3,619)	(3,093)	(2,647)	(3,215)	(3,051)	(3,084)
5	Unprotected - Coated	9,960 [a]	(164)	(573)	(142)	(609)	(56)	(76)	(1,133)	7,027 [a]	(466)	(509)	(455)	(437)	(304)	(255)	(244)	(173)
6	Total	(7,928)	(8,375)	(7,261)	(7,153)	(8,455)	(40,533)	(8,122)	(6,077)	1,747	(5,813)	(3,303)	(4,074)	(3,530)	(2,951)	(3,470)	(3,295)	(3,257)
7	Service Replacement Capital ($000)	$ 10,940	$ 12,010	$ 9,986	$ 13,641	$ 17,652	$ 16,127	$ 17,232	$ 21,172	$ 20,743	$ 15,443	$ 15,793	$ 15,872	$ 16,247	$ 17,514	$ 16,576	$ 16,540	$ 15,854

(a) Change in number of services reflects adjustments to inventory

7. Rates and Tariffs

7.1. REGULATION HISTORY

Prior to July 2000, PGW's rates were regulated by the PGC. Commencing on July 1, 2000, PGW became regulated by the PUC pursuant to the Gas Choice Act which amended the Public Utility Code. Section 2212(b) of the Public Utility Code specifically transferred rate setting authority for PGW from the PGC to the PUC. Although the PGC continues to approve PGW's operating budget, and review and recommend the approval of PGW's capital budget, the PUC has the authority to approve the rates charged by PGW.[7] Since PGW became regulated under the PUC, the PUC has granted PGW base rate increases totaling approximately $171 million. PGW has also filed with the PUC on several occasions regarding revisions to its gas cost rate ("GCR"). The PUC has approved all of the GCRs filed by PGW. Black & Veatch is of the opinion that PGW has requested and received timely changes in its GCR.

7.1.1. 2008 Extraordinary Rate Relief Filing

On November 14, 2008, PGW filed for extraordinary base rate relief of $60 million, effective January 1, 2009. The request was granted December 18, 2008. PGW filed the request primarily to cover the additional financing costs that PGW incurred to improve PGW's financial position so as to enhance its ability to access the financial markets and maintain its bond rating and to provide liquidity and financial flexibility in the tight credit markets. The Office of Small Business Advocate ("OSBA") filed a petition for reconsideration of the PUC's extraordinary rate order, challenging the allocation of the rate increase. The PUC dismissed the petition on March 26, 2009. The PUC imposed several conditions on PGW's receipt of extraordinary rate relief, all of which PGW has accepted. PGW was required to: 1) file its Business Transformation Initiative-Full Plan with the PUC for review, followed up by annual reports on its implementation and savings; 2) provide monthly reports of financial and operational performance and the results of cost containment efforts; 3) submit a performance-based incentive compensation plan for all management employees for comment by the PUC; 4) submit, ninety (90) days in advance of negotiating its next employee collective bargaining agreement, a plan for improving performance and implementing efficiencies for hourly employees; 5) convene a collaborative process to explore options for transitioning default service supply customers to alternative suppliers; and 6) take appropriate steps to seek repeal of the City's ordinance mandating the annual $18.0 million payment to the City. In granting the extraordinary relief, the PUC required PGW to file a base rate case no later than December 31, 2009.

7.1.2. 2009 General Rate Relief Filing

On December 18, 2009, PGW submitted a base rate case filing with the PUC requesting: 1) to maintain the $60 million base rate increase that the PUC granted in 2008; and 2) to provide PGW with a rider above the base rates that will fund PGW's previously booked other post-employment benefits ("OPEB") liability in the amount of $105 million over the 2011 through 2015 period and to fully fund, over 30 years, its unfunded actuarial accrued OPEB. PGW also moved to consolidate PGW's Demand Side Management Plan into the base rate filing. PGW filed the request to: 1) comply

[7] Generally, the PUC is required to rule on an application for base rate relief within nine months of the utility's application.

with the PUC's December 2008 order directing PGW to file a general rate case by the end of 2009; 2) maintain PGW's financial position; 3) maintain PGW's bond rating; 4) provide liquidity and financial flexibility in the then current tight credit markets; 5) better enable PGW to sell bonds to finance its capital program; and 6) enable PGW to provide funding for its OPEB liability.

On May 19, 2010 PGW, along with all active parties to the proceeding, submitted a Petition for Proposed Settlement of the proceeding (the "Settlement"). The PUC approved this Settlement in its Order dated July 29, 2010 (the "Order").

Under the 2010 Order, PGW is permitted to maintain virtually all of the extraordinary base rate relief, received an incremental rate increase of $16 million annually and was required to fund $18.5 million of the OPEB liability in each of the years 2011 through 2015 (the incremental rate increase of $16.0 million annually is related to an OPEB surcharge which was approved to continue beyond 2015 in PGW's 2015-2016 Cost Rate Proceeding; PGW also agreed to continue funding the OPEB liability at $18.5 million annually). The increase granted by the Order represented about 38 percent of the $42.5 million incremental rate increase as originally requested by PGW. The Order's uniform funding approach results in more uniform rates and creates a reasonable transition period from "pay-as-you-go" funding to the full funding of OPEBs.

The 2010 Order required the Net OPEB Obligation to be amortized over a thirty year period. With the thirty year amortization, $3.5 million is projected to be required annually to fund such amortization.

The 2010 Order authorized PGW to implement its proposed five year Demand Side Management ("DSM") Phase I program generally as proposed, although PGW agreed to modifications to the program to address concerns raised by the active parties to the Settlement. PGW was permitted to establish an automatic adjustment clause mechanism to recover its costs of implementing its DSM program. Additional details regarding the DSM program are discussed further in *Section 7.6, Demand Side Management Plan*.

7.1.3. 2012 Pennsylvania General Assembly Act 11

The Pennsylvania General Assembly approved Act 11 on February 14, 2012. This legislation provides Pennsylvania utility companies with a supplemental recovery mechanism for costs related to incremental/accelerated distribution system repair, improvement and replacement. Act 11 permits gas utilities to recover, through a DSIC surcharge, up to 5 percent of their non-gas revenues (which for PGW will be approximately $22.0 million) and permits an increase, if the PUC so permits. In order for a utility company to establish such a recovery mechanism, it must submit, along with other requirements, a LTIIP and a DSIC petition to the PUC for review and approval. Accordingly, PGW filed its LTIIP on December 3, 2012 and filed its DSIC petition on January 18, 2013. The PUC approved PGW's original LTIIP petition for the period FY 2013 - 2017 on April 4, 2013 and its initial DSIC petition on May 9, 2013. The original LTIIP was modified by the PUC by order entered on July 6, 2016 and continues, by its terms, through August 31, 2017. PGW filed its second LTIIP petition on May 3, 2017 for the prospective period FY 2018-2022. PGW's second LTIIP requires PUC approval to be applicable and is currently under evaluation by the PUC. Additional details regarding the LTIIP and DSIC are discussed further in *Section 7.7, Infrastructure Replacement*.

7.1.4. 2015 Management Audit

The PUC conducted a management audit of PGW's operations, via a third party consultant, in fiscal year 2015. A final report regarding audit findings was issued in August 2015[8]. The audit's functional evaluation summary found all areas were generally functioning adequately and the audit produced 76 recommendations for minor to moderate improvement of varying priority. PGW accepted 62 recommendations completely, accepted 13 in-part, and rejected one. PGW submitted its Implementation Plan Progress Report to the PUC in October 2016 which details the progress on the actions being taken, the expected completion dates and the individuals responsible for implementing each recommendation. The PUC had previously conducted a management audit of PGW's operations from October 2007 through September 2008.

7.1.5. 2017 General Rate Relief Filing

On February 27, 2017, PGW filed for an increase in its distribution base rates with the PUC. The filing sought a general rate increase calculated to produce $70 million (11.6 percent) in additional annual operating revenues based upon a 10-year normal weather assumption. The proposed increase sought to increase the fixed customer charge component, as well as the volumetric delivery charge component of base rates. Consistent with its budget process, the base rate increase requested in this filing was based on a fully projected future test year starting on September 1, 2017 and ending on August 31, 2018 ("FPFTY").

The primary issue in this proceeding is what level of base rate increase is supportable by applying PGW's required ratemaking methodology – the Cash Flow Method – and complying with Section 2212(e) and (f) of the Public Utility Code (regarding PGW's bond covenants), as well as the PUC's Policy Statement,[9] which explains the way in which the Commission intends to apply the PGW Cash Flow Method. Additional issues include: 1) the appropriate allocation of the rate increase among the customer classes; 2) the utilization of a ten-year average of heating degree days in order to calculate normal weather for fully projected future test year purposes; 3) PGW's proposed pilot programs: the Technology and Economic Development ("TED") Rider and the Micro- CHP Incentive Program; and 4) PGW's tariff modifications which include: (a) the elimination of three rate schedules, Cogeneration Service (Rate CG), Load Balancing Service (Rate LBS), and Boiler and Power Plant Service (Rate BPS), all of which have few or no customers and have adequate alternative rates; (b) revision to the rate formula for interruptible transportation ("IT") customers that better recognizes the value of the interruptible service compared to alternative energy options or firm services; and (c) the establishment of a new tariff provision to cover "back-up service," where a customer's primary energy source is something other than natural gas (e.g., steam or electricity).

Staff and intervener testimony in this proceeding was filed on May 16, 2017. Opposing parties' recommendations ranged from $28 million to $34 million in base rates (based on different assumptions of normal weather which varied from the assumptions upon which the rate increase filing was based).

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[8] PUC Docket No. D-2015-2468141, Final Stratified Management and Operations Audit Report, August 2015.

[9] 52 Pa.Code §§ 69.2701 to 69.2703; *Petition of Philadelphia Gas Works for a Statement of Policy on the Application of Philadelphia Gas Works' Cash Flow Ratemaking Method*, PUC Docket No. P-2009-2136508, Order of December 30, 2009.

On July 21, 2017, PGW filed the Settlement Agreement for settlement of certain issues in the case[10]. The Settlement Agreement, if approved by the PUC, would authorize for PGW a general rate increase of $42 million in annual operating revenues calculated using a 20-year average HDDs assumption. PGW has determined the estimated pro forma revenue impact from the change from 10-year normal weather (less HDDs) to 20-year normal weather (more HDDs) is approximately an additional $11.6 million in 2018 and averages approximately $17 million per year over the forecast period.

There are two issues remaining to be litigated in the case related to the allocation of the universal service charge and the posting of partial payments. These remaining issues are related to cost allocation and do not impact the overall revenue increase in the Settlement Agreement.

The PUC is required to render a decision by November 28, 2017. If the PUC makes modifications to, or rejects, the Settlement Agreement, PGW would have the option of withdrawing from the Settlement Agreement and demanding a full hearing. The PUC encourages parties in contested on-the-record proceedings to settle cases.[11] The PUC has indicated that settlement results are often preferable to those achieved at the conclusion of a fully litigated proceeding.[12] However, past results are not necessarily indicative of future outcomes. No assurance can be provided that the PUC will approve the Settlement Agreement.

7.2. EXISTING RATES

The current tariff sets forth the rules and regulations for gas service and the rates PGW is allowed to charge for various types of service. Changes to this tariff must be approved by the PUC. Currently, PGW primarily provides service under three broad classifications: firm service, interruptible service, and transportation service. Table 7 summarizes PGW's existing rates and applicable surcharges (which does not reflect the Settlement Agreement). PGW's rates are presented as unbundled and include a customer charge, distribution charge, and GCR. The distribution charge includes a delivery charge, as well as any applicable surcharges. The GCR is not applicable to certain firm service customers who transport gas through a qualified natural gas supplier.

[10] The Joint Petitioners are the active parties in the proceeding: PGW, the Bureau of Investigation and Enforcement, the Office of Consumer Advocate, the Office of Small Business Advocate, the Retail Energy Supply Association, the Philadelphia Industrial and Commercial Gas users Group, the Coalition for Affordable Utility Services and Energy Efficiency in Pennsylvania, the tenant Union Representative Network and Action Alliance of Senior Citizens of Greater Philadelphia.

[11] 52 Pa. Code § 5.231.

[12] 52 Pa. Code § 69.401.

Table 7 Existing Tariff Rates

Tariff	Effective	Existing Tariff Charges [(a)]
FIRM SERVICE		
General Service - Rate GS		
Customer Charge - $/meter per month		
Residential and Public Housing Customers	3/1/17	12.00
Commercial and Municipal Customers	3/1/17	18.00
Industrial Customers	3/1/17	50.00
Supply Charge - $/Mcf[(b)]		
Gas Cost Rate (GCR) + Merchant Function Charge + Gas Procurement Charge		
Residential	3/1/17	5.2143
Public Housing Customers	3/1/17	4.9830
Commercial and Municipal Customers	3/1/17	4.9968
Industrial Customers	3/1/17	4.9978
Distribution Charge - $/Mcf		
Delivery Charge		
Residential	3/1/17	6.0067
Public Housing Customers	3/1/17	4.9441
Commercial and Municipal Customers	3/1/17	4.5984
Industrial Customers	3/1/17	4.5332
Surcharges		
Universal Service and Energy Conservation	3/1/17	1.4628
Restructuring and Consumer Education	9/1/16	0.0100
Efficiency Cost Recovery Surcharge		
Residential and Public Housing Customers	3/1/17	0.0222
Commercial Customers	3/1/17	0.0570
Industrial Customers	3/1/17	0.0556
Other Post Employment Benefits Surcharge	9/1/16	0.3724
Commodity Charge - $/Mcf		
Residential Customers		13.0884
Public Housing Customers		11.7945
Commercial and Municipal Customers		11.4974
Industrial Customers		11.4318
Distribution System Improvement Charge	4/1/17	8.80%
Customer Charge - $/meter per month		
Residential and Public Housing Customers		1.0563
Commercial and Municipal Customers		1.5844
Industrial Customers		4.4011
Commodity Charge - $/Mcf		
Residential Customers		0.6931
Public Housing Customers		0.5996
Commercial and Municipal Customers		0.5722
Industrial Customers		0.5663
Municipal Service - Rate MS		
Customer Charge - $/meter per month	6/1/16	18.00
Supply Charge - $/Mcf[(b)]	6/1/16	3.2579
Distribution Charge - $/Mcf		
Delivery Charge	6/1/16	3.3661
Surcharges		
Universal Service and Energy Conservation	6/1/16	1.4628
Restructuring and Consumer Education	9/1/16	0.0100
Efficiency Cost Recovery Surcharge		0.0000
Other Post Employment Benefits Surcharge	9/1/16	0.3724
Total Commodity Charge - $/Mcf		8.4692
Distribution System Improvement Charge	4/1/16	8.80%
Customer Charge - $/meter per month		1.5844
Commodity Charge - $/Mcf		0.4587
Philadelphia Housing Authority Service - Rate PHA		
Customer Charge - $/meter per month	6/1/16	18.00
Supply Charge - $/Mcf[(b)]	6/1/16	3.2579
Distribution Charge - $/Mcf		
Delivery Charge	6/1/16	4.1101
Surcharges		
Universal Service and Energy Conservation	6/1/16	1.4628
Restructuring and Consumer Education	9/1/16	0.0100
Efficiency Cost Recovery Surcharge	6/1/16	0.0570
Other Post Employment Benefits Surcharge	9/1/16	0.3724
Total Commodity Charge - $/Mcf		9.2702
Distribution System Improvement Charge	4/1/16	8.80%
Customer Charge - $/meter per month		1.5844
Commodity Charge - $/Mcf		0.5292

Table 7 (Continued) Existing Tariff Rates

Tariff	Effective	Existing Tariff Charges [a]
INTERRUPTIBLE SERVICE		
Boiler and Power Plant Service-Small Volume - Rate BPS-S		
Customer Charge - $/meter per month		
Annual consumption less than 10,000 Mcf.	1/1/09	51.00
Annual consumption between 10,000 and 100,000 Mcf, inclusive.	1/1/09	108.00
Annual consumption greater than 100,000 Mcf.	1/1/09	150.00
Commodity Charge [c] - $/Mcf		14.35
Boiler and Power Plant Service - Large Volume - Rate BPS-L		
Customer Charge - $/meter per month		
Annual consumption less than 10,000 Mcf.	1/1/09	51.00
Annual consumption between 10,000 and 100,000 Mcf, inclusive.	1/1/09	108.00
Annual consumption greater than 100,000 Mcf.	1/1/09	150.00
Commodity Charge [c] - $/Mcf		14.30
Boiler and Power Plant Service - Heavy Oil - Rate BPS-H		
Customer Charge - $/meter per month		
Annual consumption less than 10,000 Mcf.	1/1/09	51.00
Annual consumption between 10,000 and 100,000 Mcf, inclusive.	1/1/09	108.00
Annual consumption greater than 100,000 Mcf.	1/1/09	150.00
Commodity Charge [c] - $/Mcf		14.25
Load Balancing Service - Extra-Large Volume - Rate LBS-XL		
Customer Charge - $/meter per month	1/1/09	362.00
Commodity Charge [c] - $/Mcf		14.10
Load Balancing Service - Large Volume - Rate LBS-L		
Customer Charge - $/meter per month	1/1/09	254.00
Commodity Charge [c] - $/Mcf		14.15
Load Balancing Service - Small Volume - Rate LBS-S		
Customer Charge - $/meter per month	1/1/09	145.00
Commodity Charge [c] - $/Mcf		14.20
Gas Transportation Service - Rate GTS		
Customer Charge - $/meter per month	9/1/03	250.00
Commodity Charge[d] - $/Mcf		n/a
Cogeneration Service - Rate CG		
Customer Charge - $/meter per month	9/1/03	362.00
Commodity Charge[e] - $/Mcf		2.88
Developmental Natural Gas Vehicle Service, Firm Service - Rate NGVS		
Customer Charge - $/meter per month	9/1/03	35.00
Supply Charge - $/Mcf[b]	9/1/03	3.2579
Distribution Charge - $/Mcf		
Delivery Charge	9/1/03	1.2833
Surcharges		
Universal Service and Energy Conservation	6/1/16	1.4628
Restructuring and Consumer Education	9/1/16	0.0100
Other Post Employment Benefits Surcharge	9/1/16	0.3724
Total Commodity Charge - $/Mcf		6.3864
Distribution System Improvement Charge	4/1/17	8.80%
Customer Charge - $/meter per month		3.0807
Commodity Charge - $/Mcf		0.2754
Developmental Natural Gas Vehicle Service, Interruptible Service - Rate NGVS		
Customer Charge - $/meter per month	9/1/03	35.00
Commodity Charge - $/Mcf		10.23
TRANSPORTATION SERVICE		
Daily Balancing Service - Rate DB		
Administrative Charge - $/supply pool per month	9/1/03	150.00
Plus charges and/or credits related to balancing and Operational Flow Orders (OFOs)		
Interruptible Transportation - Rate IT	1/1/09	
IT-A - Contracts for not less than 2,500 Dth, maintain standby non-natural gas energy.		
IT-B - Contracts for not less than 5,000 Dth, maintain standby non-natural gas energy.		
IT-C - Contracts for not less than 10,000 Dth, maintain standby non-natural gas energy.		
IT-D - Contracts for not less than 25,000 Dth, maintain standby non-natural gas energy.		
IT-E - Contracts for not less than 80,000 Dth, maintain standby non-natural gas energy.		

Customer Charge - $/meter location per month		Transportation Charge - $/Dth delivered		
IT-A	125.00	IT-A	1.81	maximum
IT-B	225.00	IT-B	0.87	maximum
IT-C	225.00	IT-C	0.68	maximum
IT-D	225.00	IT-D	0.61	maximum
IT-E	350.00	IT-E	0.58	maximum

(a) Reference: Philadelphia Gas Works, Gas Service Tariff, Pa P.U.C No 2.
(b) Sum of Gas Cost Rate (GCR), Merchant Function Charge (MFC), and Gas Procurement Charge (GPC).
(c) Competitively priced based on cost of alternative fuel.
(d) Commodity charge includes Delivery, Transportation, and Standby Service Charges, if applicable. There are no GTS customers at this time.
(e) Commodity charge based on cost of gas purchased and delivered to PGW gate stations.

7.2.1. Firm Service

PGW provides firm service under three rate schedules: General Service, Municipal Service, and Philadelphia Housing Authority ("PHA") Service. The vast majority of PGW's customers are served under the General Service Rate. During the 2017 fiscal year, approximately 99 percent of PGW's customers are estimated to be served under the General Service rate and these customers account for 96 percent of sales volumes (and 57 percent of total throughput). This rate is available to any residential, commercial, or industrial customer pursuant to the applicable rate provision. Monthly customer charges differ depending on whether the customer is classified as residential, commercial, or industrial customer. A different distribution charge applies to residential customers versus commercial and industrial customers. The General Service Rate contains special provisions for separately metered summer air conditioning and compressed natural gas ("CNG") vehicle service. Residential senior citizens may have previously qualified for a discount under this rate. (*See Section 7.10, Senior Citizen Discount Program*).

Table 8 presents a comparison of a typical peak winter month's residential gas bill for PGW and the other principal gas distribution utilities in Pennsylvania. Based on rates, surcharges, and costs of gas currently in effect, PGW's typical winter month residential bill is $61.35 higher than the group average of $143.55. One of PGW's surcharges, the Universal Service and Energy Conservation surcharge, includes the recovery of costs related to the CRP, the CRP Home Comfort program, and the Senior Citizen Discount Program[13]. PGW's Universal and Energy Conservation surcharge is currently $1.4628 per Mcf. For the typical peak winter month residential bill for 15 Mcf of consumption, the Universal Service Charge amounts to $21.94 of the $204.90 total. Black & Veatch understands that, in comparison to PGW, comparable social program related surcharges of other Pennsylvania utilities are significantly lower because the costs of these programs are not as high as they are in Philadelphia.

Table 8 Comparison of Residential Gas Bills
Pennsylvania Utilities for Customers Using 15 Mcf per Month

Utility	Monthly Bill[(a)(b)]
National Fuel Gas	$114.59
PECO Energy	$119.22
UGI Penn Natural Gas (formerly PG Energy)	$120.34
Equitable Gas	$131.83
Peoples Natural Gas	$136.61
UGI Corporation	$139.95
Columbia Gas of Pennsylvania	$180.94
Philadelphia Gas Works	$204.90

(a) PA. PUC Rate Comparison Report 4-15-17
(b) Contributing factors to differences in monthly bills include gas costs, DSIC, and Universal Service Charge.

[13] The Senior Citizen Discount provides eligible customers with a discounted payment plan. The total number of customers receiving the discount as of August 31, 2015 and 2016 was approximately 18,500 and 16,700, respectively. The discount value was approximately $3.8 million for the year ended August 31, 2016. The discount program closed to new customers on September 1, 2003.

7.2.2. Interruptible Service

PGW provides interruptible sales service under several rate schedules. Virtually all interruptible sales service is under the Cogeneration Service ("CG") which is priced at the average commodity cost plus $0.75/MCF. The Boiler and Power Plant Service ("BPS") rates are set within a range, based on the estimated cost of gas and on published No. 2 fuel oil prices in Philadelphia. The Load Balancing Service ("LBS") is priced similarly. Because this service is interruptible, customers taking BPS or LBS service must be able to use an alternate energy source. The rates are competitive. If alternate fuel (No. 2) is less expensive than the equivalent price that PGW offers in any given month, the customer may use the alternate fuel rather than burn natural gas.

7.2.3. Transportation Service

PGW currently provides transportation service to approximately 5,070 customers. The increase in transportation customers from 2,621 in 2012, as shown in Table 9, is primarily due to customers transferring from sales to transportation service. During the calendar year 2016, Grays Ferry and Trigen Cogeneration Facility accounted for approximately 39 percent of PGW's transportation throughput and 3 percent of PGW's transportation revenue. Service to these customers is provided through essentially dedicated facilities under a long-term negotiated contract. Under this contract, PGW receives approximately 8 cents per Mcf for each unit transported plus a service charge intended to cover PGW's cost of operating and maintaining the facilities required to serve these customers. The other customers are served under individually negotiated contracts. In some cases, transportation customers also take some service under the sales rate schedule for a portion of their load.

Although PGW has operated under its Restructuring Compliance Tariff with unbundled rates since September 1, 2003, many of PGW's customers continue to take fully bundled service from PGW. A fully bundled service is a service where the customer deals with one provider and pays for all services through a single charge. All of the separate services (gas supply, transportation, storage, and distribution) currently performed by PGW are packaged into one full-service rate.

Under PGW's restructured rates, customers have the option to continue taking the gas supply, transportation, and storage services from PGW or to choose a third party supplier to provide these services. Whether the customer decides to have PGW provide these services or a third party, the customer continues to take and pay for distribution service from PGW. Under its current tariff, PGW assigns (with recall rights) portions of its pipeline transportation to firm service third party suppliers such that PGW and customers who take a fully bundled service will not be adversely impacted by having to pay for capacity that would otherwise be stranded by customers who choose a third party supplier. PGW retains ownership to the transportation capacity because PGW continues to be the supplier of last resort. If a firm service third party supplier defaults or is no longer able to meet its commitments, PGW is able to recall the transportation capacity and serve the customers who had opted for service from this third party supplier. PGW does not release storage capacity to firm service third party suppliers. PGW provides balancing services from storage as needed. Firm service third party suppliers are assessed a storage and peaking charge for storage balancing services provided by PGW during the winter operating season; firm service third party suppliers return volumes provided from PGW storages during the summer refill season.

Under the unbundled rates, PGW's margin[14] from firm customers is not materially impacted by whether a customer chooses a third party supplier or elects to continue taking the fully bundled service. In effect, the unbundled rates and services make PGW indifferent as to which service a customer takes. Customers will continue to pay the distribution and customer charges no matter which service is taken. The GCR mechanism will keep PGW whole with regard to gas supply, transportation, and storage costs. PGW's ability to assign capacity to the third party suppliers will not adversely impact customers who choose to take the fully bundled service.

PGW estimates for fiscal year 2017, approximately 31.9 Bcf of commercial, industrial and municipal throughput, or 40.8 percent of total throughput for all customers, consists of gas supply and transportation from a third party supplier. PGW projects transportation throughput will continue to grow annually, reaching 36.2 Bcf, or approximately 44.9 percent of total throughput by 2022.

7.3. GAS COST RATE

As previously discussed, all changes in gas supply related costs are passed through to customers through the GCR. The specific components of PGW's current GCR are depicted in Figure 3. PGW's gas supply costs consist of purchased gas costs, transportation costs, and off-system storage costs. This cost is reduced by the cost directly paid by interruptible sales customers (specifically, BPS and LBS customers). Sales are made to these interruptible customers based on prices quoted monthly by PGW. The prices quoted are based on the average delivered price paid by PGW during the month with some consideration given to the customer's cost of alternative fuel. Natural gas service is competing against the price of alternative fuel; however, PGW only incurs gas supply cost attributable to these customers to the extent that sales are made (and gas is purchased to meet load). Total gas supply costs are also adjusted to reflect changes in the inventory cost of off-system and LNG storage and the cost of power purchased for the LNG facilities. The change in inventory cost is attributable to changes in volume as well as the price paid for the gas put into storage.

These costs are divided by the total sales volumes less the volumes attributable to direct billed interruptible sales customers to determine the unit cost of fuel, or sales service charge as depicted in Figure 3. Various adjustments are then made to the sales service charge. An additional adjustment is made for the net over or under collection of natural gas during the previous fiscal year resulting from differences between values used to project the prior year's GCR and those actually experienced. The interest expense or credit on the over or under recovery is also applied to calculate the total adjustment. In addition, an interruptible revenue credit ("IRC") for margin realized from interruptible sales is made. In the aggregate, these components comprise the GCR. The GCR is typically adjusted quarterly although PGW has the ability on thirty days' notice to the PUC to change it monthly.

Prior to the restructuring in 2003, PGW recovered certain non-fuel expenses in addition to gas supply costs through the GCR. These included discounts given to low income customers through the Customer Responsibility Program and funds provided to weatherize the homes for low-income customers through the Conservation Works Program. These costs are now recovered through surcharges which are not included as part of the GCR. By recovering these costs through surcharges, customers cannot avoid these costs by not purchasing gas from PGW.

[14] Margin (non-gas revenues) is total revenues excluding gas costs.

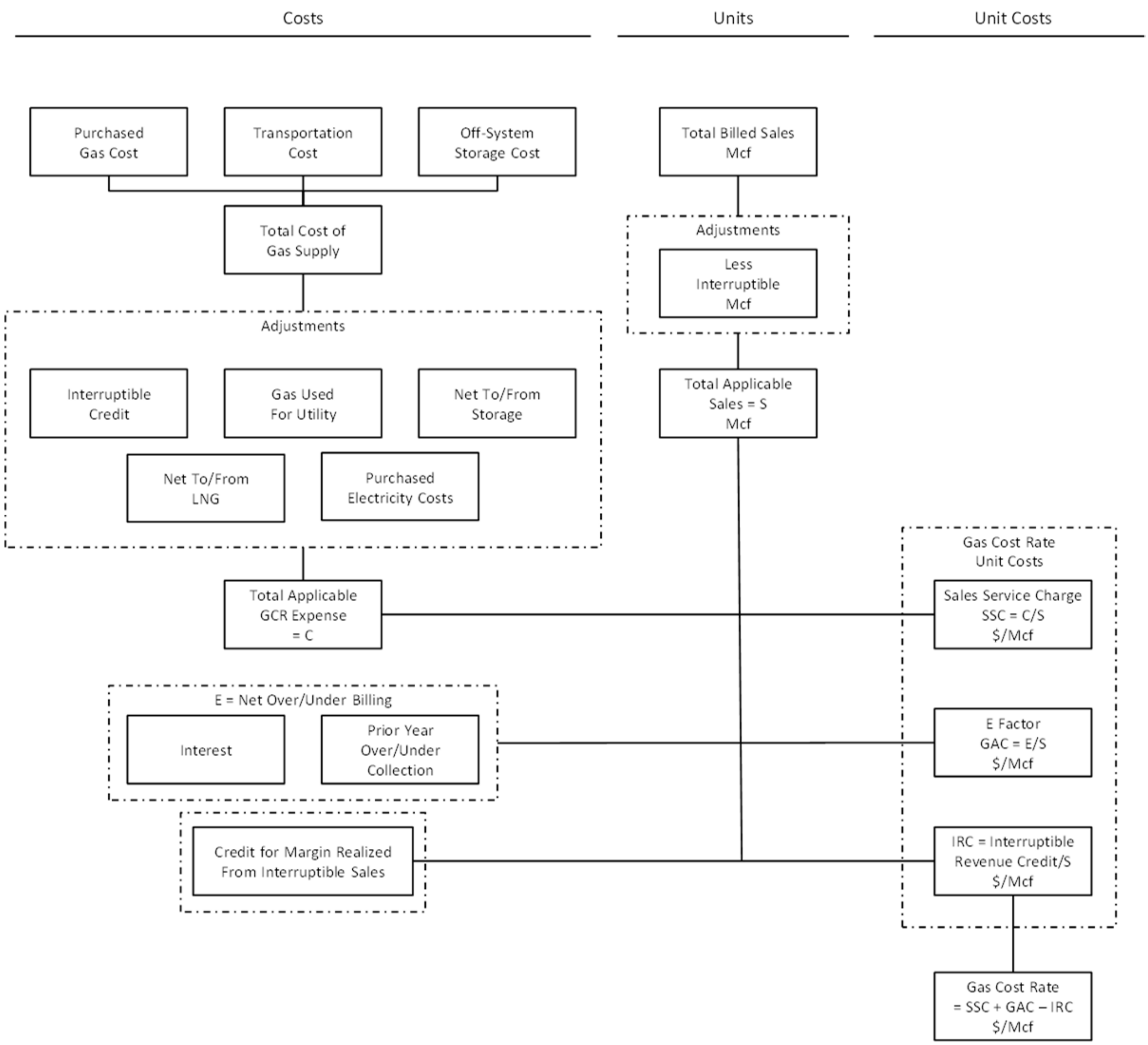

Figure 3 Components of PGW Gas Cost Rate

7.4. WEATHER NORMALIZATION ADJUSTMENT

Since 2002, PGW's Tariff has included a weather normalization adjustment ("WNA") clause. The benefit of a WNA is that it mitigates the single biggest risk to PGW of not recovering its approved margin due to warmer than normal weather during the winter season. PGW's approved commodity charges (exclusive of cost of gas) are derived using throughput (volumes) that is based on the assumption that weather will be normal. If conditions are warmer than normal, sales decline and in conjunction with that, margin declines. Several warmer than normal winters, including one of the warmest winters in PGW's history, created the circumstances that led to PGW's need to file for extraordinary rate relief in 2002.

The WNA is designed to adjust the customers' bills upwards or downwards to reflect differences between actual HDDs and normal HDDs. The benefits of a WNA include the following:

- Stabilizes earnings,
- Stabilizes cash flow during the winter heating season,
- Reduces the need to file rate cases, thereby lowering costs,
- Reduces the need for short-term financing, and
- Stabilizes customers' bills.

Heating customers were charged approximately $41.5 million as a result of the warmer than normal winter period in fiscal year 2016. PGW's WNA applies to customers served under its General Service, Municipal Service, and PHA rate schedules and is calculated for each customer bill rendered between October 1 and May 31.

The type of WNA that PGW implemented is referred to as a Type 1 WNA. This type of WNA adjusts the customer's bill to reflect conditions during the billing cycle covering that bill. This contrasts with a Type 2 WNA which is calculated on a seasonal basis. The advantage of the Type 1 WNA is that the calculation of the customers' bills and PGW's revenue recovery are concurrent with the current billing cycle. The adjustment is calculated as the ratio of the normal HDDs during the billing cycle divided by the actual HDDs during the cycle. For example, assume a residential customer uses 10 Mcf during the period November 16 through December 15, when the actual HDDs during this period are 750, and the normal HDDs during this period are 850. The customer's volumetric charge (exclusive of gas cost) would be calculated as 8 Mcf (10 Mcf minus 2 Mcf base load) times 841.5 HDDs (850 HDDs less 1 percent) divided by 750 HDDs times $6.0067 per Mcf which equals $65.93. Without a WNA, the customer's volumetric charge would have been $60.07 (10 Mcf times $6.0067 per Mcf). The WNA only applies if the actual HDDs deviate by more than 1 percent from the normal HDDs during the billing cycle. Therefore, if the actual HDDs during the cycle in the above example had been within the range of 842 to 859 HDDs, no adjustment would be made to the bill.

In its current rate case, PGW has entered into a Settlement Agreement that, if approved by the PUC, would change the calculation of normal weather from one based upon a 30-year average HDD calculation to one based upon a 20-year average HDD calculation. If approved, this change to 20-year normal weather is expected to reduce the variation in PGW's annual WNA charges.

7.5. SURCHARGES

PGW's surcharges include a Restructuring and Consumer Education Surcharge, Universal Service and Energy Conservation Surcharge, Efficiency Cost Recovery Surcharge, OPEB Surcharge, and DSIC

Surcharge. These surcharges are depicted in Figure 4. Gas utilities in Pennsylvania can recover the costs of social programs through what are generally referred to as universal service charges. The Universal Service and Energy Conservation Surcharge provides for the recovery of discounts to customers on the CRP, of discounts to customers receiving the Senior Citizen Discount, of the costs of the CRP Home Comfort program, and of past due arrearages forgiven to CRP customers entering CRP after September 1, 2003. The Universal Service and Energy Conservation Surcharge is applicable to all PGW customers, excluding interruptible customers, who are delivered natural gas through PGW's distribution system. PGW automatically adjusts the surcharge quarterly in connection with its GCR filing.

The Restructuring and Consumer Education Surcharge separately tracks and recovers costs associated with the transition to customer choice and what are generally referred to as PUC Chapter 56 (Customer Service) and Chapter 59 (Safety) costs. The restructuring costs include the recovery of PUC approved costs which PGW has or will incur to meet requirements of the Gas Choice Act and applicable PUC regulations, orders, and other regulatory requirements. The additional costs associated with Chapter 56 primarily relate to more frequent reading of indoor meters. The additional costs associated with Chapter 59 primarily relate to more frequent meter testing and indoor leak surveys.

The Efficiency Cost Recovery Surcharge recovers the program costs and the administrative costs of the energy efficiency programs (i.e. the demand side management programs) for the firm customer rate classes. The OPEB Surcharge recovers the amounts necessary for PGW's OPEB obligations. Revenues from the DSIC Surcharge are used to supplement PGW's 18-mile pipeline replacement program as part of PGW's LTIIP.

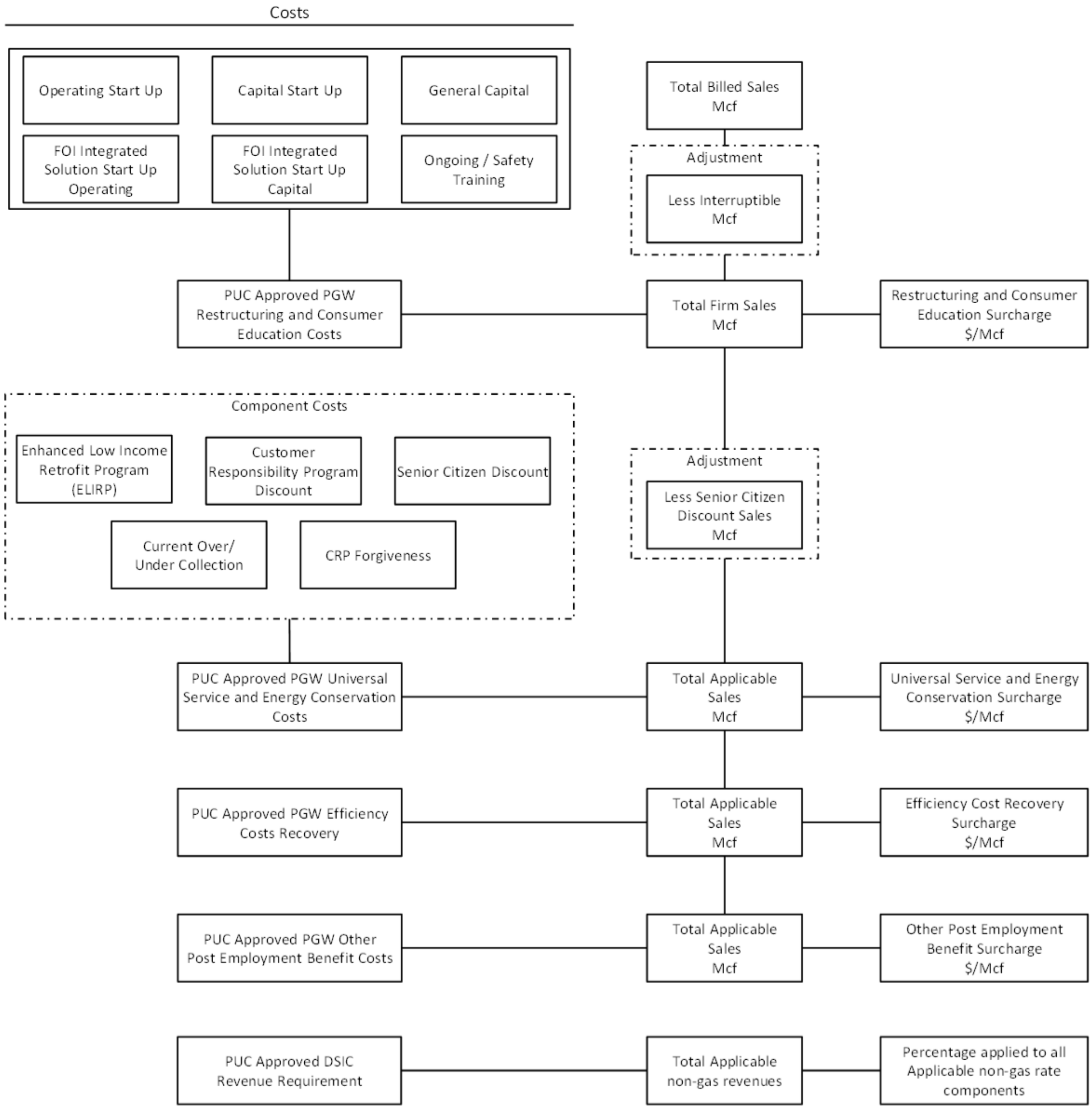

Figure 4 Components of PGW Surcharges

7.6. DEMAND SIDE MANAGEMENT PLAN

PGW's DSM program, marketed as EnergySense, is a portfolio of conservation programs that PGW launched in fiscal year 2011 and was initially approved by the PUC for a 5-year term. On December 23, 2014, PGW filed a Petition for Approval of Demand Side Management Plan 2016-2020 ("DSM Phase II") with the PUC. The PUC subsequently approved a DSM Bridge Plan for an interim period effective September 1, 2015, through the earlier of the effective date of the Phase II Plan or August 31, 2016. On November 1, 2016 the PUC entered a Final Order that approved the continuation of five market rate DSM programs, at a budget of $10.57 million from FY 2017 – FY 2020, and an FY 2017 CRP Home Comfort budget of $5.9 million. Pursuant to that Final Order, PGW will discontinue the Home Rebates program in FY 2017. The Final Order also required that the budget for PGW's CRP Home Comfort program beyond FY 2017 be reviewed as part of the Universal Services and Energy Conservation Plan process. PGW's costs associated with the market rate programs (non- low income) are recovered through the Efficiency Cost Recovery Surcharge. Costs for the Customer Responsibility Program ("CRP") Home Comfort program, PGW's Low Income Usage Reduction Program, are recovered through the Universal Services and Energy Conservation Surcharge.

By its approval of the Phase II Plan, the PUC authorized PGW to continue its DSM programs beyond FY 2020, through the filing of triennial implementation plans.

FY 2017 is the first year of Phase II, and will follow the budget proposed for the first program year, which was initially to be FY 2016. The projected annual budgets, excluding CRP Home Comfort, for FY 2017 through FY 2020 range from $2.5 million to $2.8 million; CRP Home Comfort budgets were switched to a calendar year basis by the PUC, and the budgets for calendar years 2018-2020 are currently pending before the PUC in PGW's Universal Service and Energy Conservation Plan filing.

The full portfolio of energy-efficiency programs, EnergySense conservation, consists of four separate market rate programs and the low income CRP Home Comfort program, offering incentives available to all PGW customers to assist in conserving energy. The portfolio has five broad goals:

- Reduce customer bills.
- Maximize customer value.
- Contribute to the fulfillment of the City's sustainability plan.
- Reduce PGW cash flow requirements.
- Help the Commonwealth and the City reduce greenhouse gas emissions.

These goals will be accomplished by:

- Fielding a portfolio of programs that targets cost-effective gas efficiency measures among all PGW's firm heating customers,
- Maximizing delivery efficiency to minimize costs and maximize coverage from the available budget,
- Treating customers in greatest economic need with the most cost-effective opportunities first,
- Supporting economic development in the City, both directly and indirectly, and
- Exploring opportunities to take advantage of efficiencies by partnering with other parties.

From inception through August 31, 2016, PGW has spent $51.6 million. Over the expected useful life of the measures installed, the activity through the end of fiscal year 2016 is projected by PGW to achieve 9.75 Bcf of natural gas savings (reduced customer usage). Based on the Total Resource Cost test, the actual activity results from inception through August 31, 2016 achieved a positive net savings to customers of approximately $13.2 million from total present value spending of $58 million and $71.2 million in present value savings over the expected useful life of the measures.

PGW filed its DSM Phase II Compliance Plan covering all programs except CRP Home Comfort for the fiscal years 2017 through 2020 in December 2016. Over the expected useful life of the measures installed, the activity for this period is projected by PGW to achieve 2.5 Bcf of natural gas savings (reduced customer usage). Based on the Total Resource Cost test, PGW expects total present value spending of $14.1 million and $16.4 million in present value savings over the useful life of the measures for net savings to customers of $2.4 million.

PGW's FY2017 CRP Home Comfort Program activity is projected to result in annual lifetime savings of 806,000 MMBtu. Based on the Total Resource Cost test, PGW expects total present value spending of $5.1 million and $6.1 million in present value savings for net customer savings of $970,000. Budgets and goals for FY 2018 – FY 2020 will be determined as part of the ongoing Universal Services and Energy Conservation Plan process.

The portfolio has been revised annually since approval, based on actual activities and latest market developments, such as falling gas commodity costs and updated avoided costs calculations. Additional elements in the updated avoided costs calculations for Phase II include the economic value of wholesale price reduction caused by demand reductions resulting from energy-efficiency improvements.

Listed below are the major DSM programs. As used below, the term "retrofit" follows the common use of the term in this kind of program, meaning modification of an existing structure to improve energy efficiency.

1. *CRP Home Comfort*

   Target Audience: Low-income Residential (CRP Participants), participation is required per CRP program enrollment. As ordered by the PUC, PGW launched the Low Income Multifamily Efficiency (LIME) pilot in 2017 targeting multifamily buildings as part of the CRP Home Comfort program.

   Description: Comprehensive residential retrofit measures will be installed at no cost to the customer.

2. *Home Rebates Program (Discontinued in FY 2017)*

3. *Residential Heating Equipment Rebates Program*

   Target Audience: Customers purchasing residential-sized heating equipment

   Description: Prescriptive incentives offered to PGW customers who purchase residential-sized, energy efficient gas appliances and heating equipment. This program targets the entire supply chain, providing incentives designed to cover 80 percent of incremental costs for high efficiency models.

4. *Commercial and Industrial Equipment Rebates Program*

Target Audience:	Commercial and industrial customers purchasing commercial-scale gas equipment.
Description:	Prescriptive incentives offered to PGW customers who purchase commercial-scale, energy efficient gas appliances and heating equipment. This program targets the entire supply chain, providing incentives designed to cover 80 percent of incremental costs for high efficiency models.

5. *Efficient Construction Grants*

Target Audience:	Residential and Commercial Construction
Description:	Customized incentives offered to encourage the design and construction of new residential and commercial buildings that exceed energy code minimum requirements. This program provides incentives of up to $750 for single-family residential customers and up to $60,000 to multifamily and commercial customers based on the projected savings.

6. *Efficient Building Grants*

Target Audience:	Commercial, Multifamily and Industrial Facilities
Description:	Technical assistance and customized incentives offered to PGW commercial and industrial customers to encourage them to complete comprehensive retrofit projects to their existing properties. This program provides incentives of up to $75,000 to cover up to 33 percent of the retrofit project costs.

7.7. INFRASTRUCTURE REPLACEMENT

As discussed earlier in this Report in *Section 6, Capital Improvement Program*, PGW's base rates have historically provided approximately $20 million per year which has funded the replacement of approximately 18 miles of cast iron mains annually. This program was initiated by PGW based on risk assessment and benchmarking studies conducted for PGW. The cost of this program is being paid for by customers under the existing base rates. The 18-mile cast iron main replacement program is supplemented by an accelerated main replacement program as set forth in PGW's LTIIP.

PGW's LTIIP is a five-year plan (fiscal years 2013 - 2017) for accelerated recovery for distribution facilities over and above PGW's base line replacement program (recovery for the base line program is already included in base rates). The LTIIP proposes to accelerate the replacement cycle for PGW's large diameter cast iron mains (i.e. 12-inch and larger diameter high pressure main) and accelerate the more extensive smaller diameter cast iron mains (i.e. 8-inch and smaller, low/intermediate pressure main) replacement program. For forecasting purposes, PGW assumes this program would continue throughout the fiscal year 2022 forecasting period. PGW filed its second LTIIP petition on May 3, 2017 for the prospective period FY 2018-2022.

The original LTIIP includes several key elements:

- The program of replacing 18 miles per year of small diameter, low/intermediate pressure cast iron main increased by approximately 3 miles per year;
- Additionally, replacement of large diameter, high pressure cast iron mains that have been identified as potential risks began in fiscal year 2013 related to:
  - 30-inch cast iron mains that have been identified as being in poor condition, and
  - 12-inch cast iron mains, similar to those that have been involved in two separate incidents in PGW's system; 12-inch cast iron mains were also involved in an incident within UGI Corporation's service territory.

On January 16, 2015, the PUC initiated an inquiry and analysis of PGW's pipeline replacement program, including the need for and any impediments to the expansion of the pipeline replacement program. This inquiry and analysis culminated in a report to the PUC by Commission Staff. On April 21, 2015, the PUC Commission Staff issued its report "Inquiry into Philadelphia Gas Works' Pipeline Replacement Program." In this report, the Staff indicated that it did not believe the current pipeline replacement rate to be aggressive enough. The Staff identified the following seven "areas of opportunity that PGW should explore to increase its mains replacement rate":

1. Increase the DSIC above the current 5 percent cap
2. Levelize and annualize DSIC eligible costs
3. Issue new debt
4. Improve cash management
5. Request that the City of Philadelphia waive all or a portion of the $18 million payment
6. Streamline corporate governance structure
7. Consolidate facilities

PGW met with the PUC to discuss the suggestions made in the PUC's April 2015 report. On September 1, 2015, at Docket No. P-2015-2501500, PGW proposed an increase in the DSIC from 5.0 percent to 7.5 percent of distribution revenues and to levelize and annualize the DSIC. The PUC issued an Opinion and Order granting PGW's request to increase its DSIC to 7.5 percent on January 28, 2016 ("January 28 Order"). The increase, from $22 million to $33 million per year, will generate approximately $11 million in additional revenue to fund PGW's accelerated pipeline replacement program, which PGW is allowed to recover on a pay-as-you-go-basis through the DSIC surcharge. This $33 million per year of DSIC revenue is in addition to the $20 million funded through base rates for cast iron replacement. PGW has not issued any long-term debt to fund the accelerated replacement program. Funding on a pay-as-you-go basis benefits both the ratepayer and PGW because rates will not be impacted by any interest expense or debt service coverage requirements. PGW's debt to equity ratio will not increase as a result of the accelerated spending funded by a DSIC. Separate funding via a pay-as-you-go DSIC model for the accelerated program is also beneficial (versus a base rate case) because it can be approved more timely and efficiently than would be true in a base rate case. The January 28 Order also permits PGW to levelize and annualize DSIC recovery, which will provide PGW with more predictable cash flow and may help mitigate over-and under-collections. PGW's increased DSIC charge of 7.5 percent became effective on February 1, 2016, for service rendered on or after January 1, 2016.

The DSIC surcharge applies to Residential and Public Housing, Commercial and Municipal, and Industrial customers. The surcharge is calculated as a percentage applied to the delivery charge, surcharges, and customer charge. The percentage is equal to the DSIC revenue requirement divided by the annual non-gas cost revenues of the above customers. This percentage is then applied equally to each of the non-gas rate components of those customers.

On July 6, 2016, the PUC issued an Opinion and Order that permitted PGW to recover an additional $11.4 million in DSIC under-collections for the calendar year ending December 31, 2015, over the course of two years. This results in a temporary increase in the DSIC surcharge of an additional $5.7 million a year for two years. Beginning on October 1, 2016, PGW temporarily increased its DSIC surcharge to 8.84 percent, as permitted by the PUC's July 6, 2016 Order. On January 1, 2017, PGW changed its DSIC surcharge percentage to 8.80 percent, where it remains following PGW's April 1, 2017 DSIC quarterly filing.

PGW is considering requesting future increases to the DSIC once the 7.5 percent DSIC has been in place for a period of two years and PGW has had the opportunity to evaluate the effect of such increase on risk and customers and PGW's ability to effectively implement the level of accelerated pipeline replacement associated with the 7.5 percent DSIC (or higher levels).

7.8. CUSTOMER RESPONSIBILITY PROGRAM

In November 1993, the PGC adopted a low-income program known as the CRP. This program became effective in February 1994. The purpose of CRP is to increase the collection of revenues, provide an affordable payment plan for low-income customers, impress payment responsibility on the customer, reinforce the importance of conservation and increase grant assignment. The goals of the program are to increase cash flow to PGW and decrease accounts receivable.

Currently, CRP is open to any customer who is at or below 150 percent of the Federal Poverty Level ("FPL"). Monthly bills for CRP customers are based on income, so that they are affordable for low-income households. If a customer entering CRP has arrears, those arrears are forgiven at a rate of

1/36th per month. As part of their CRP agreement of fixed monthly bills and arrearage forgiveness, CRP customers are required to:

- accept conservation measures offered to them in the CRP Home Comfort;
- make a $5 monthly co-payment toward their pre-program arrears, if they have any;
- apply for LIHEAP, if eligible, and designate PGW as the grant recipient;
- re-certify at least once per year, or when household size or income changes; and
- make payments on time and in full (CRP customers are considered in default when they are one full payment past due).

CRP is a customer assistance program that can help low-income residential customers who are at or below 150 percent of the poverty level to better afford their PGW bills and maintain their gas service. Participants receive a discount based on their gross household income. Applicants must apply by showing proof of income and identification cards for everyone in the household. There are three agreement types:

PGW Annual Bill	Household Income
8% of income	0-50% FPL
9% of income	51-100% FPL
10% of income	101-150% FPL

The minimum payment under a CRP agreement is $25 per month. Customers with pre-program arrears must make a $5 monthly co-payment toward the arrears, in addition to the CRP budget amount. They must also pay their bill on time to receive forgiveness of pre-program arrears.

Approximately 48,580 customers were enrolled in CRP as of February 2017. The main costs associated with the CRP program are the discounts that customers receive (revenue shortfall) and their arrearage forgiveness.

The CRP revenue shortfall is currently recovered in the Universal Service Surcharge. In the past five fiscal years, these amounts were approximately $63.2 million for 2012, $70.6 million for 2013, $65.1 million for 2014; $54.5 million for 2015, and $34.3 million for 2016. Shortfall fluctuation can be primarily attributed to the cost of natural gas supply and participation levels.

PGW forgives 1/36th of CRP pre-program arrears each month, provided that a bill is paid in full. In the past five fiscal years, PGW forgave approximately $8.3 million in 2012, $6.9 million in 2013, $6.2 million in 2014, $6.4 million in 2015, and $8.8 million in 2016.

On April 28, 2016, PGW filed a proposed Universal Service and Energy Conservation Plan for 2017-2020. The PUC has not issued a final Order on this 2017-2020 Plan. In this Plan PGW has proposed: increasing the CRP recertification path timeframe; allowing CRP LIHEAP recipients to recertify for CRP every three years instead of every other year; providing enhanced employee training on CRP recertification; improvements to its CRP outreach efforts; and a pilot CRP consumption limit process.

7.9. CONSERVATION PROGRAMS

PGW's original low-income customer conservation program was called the Conservation Works Program ("CWP"). CWP was designed to provide cost-effective energy savings to PGW's low-income customers who participate in CRP. CWP was intended to reduce the overall long-term costs of CRP.

CWP began in 1990 and was operated by the Energy Coordinating Agency of Philadelphia ("ECA") for the first years of the program. In September 1996, the program was redesigned, a second weatherization contractor was added, and PGW became the program operator. Both contractors pursued a lower cost program approach designed to install only the most cost-effective measures. After redesign, the program continued with an annual budget of approximately $2 million. About 2,000 homes were treated annually under the program.

On January 1, 2011, CWP was expanded into the CRP Home Comfort program, as part of PGW's new portfolio of energy-efficiency programs for all of PGW's customers (as described more fully in *Section 7.6, Demand Side Management Program*). CWP had been designed to spend smaller amounts within each home so as to treat as many homes as possible within the allotted budget amounts. CRP Home Comfort emphasizes greater expenditures within each home entered, so as to realize more savings per home. One of the main goals of CRP Home Comfort is to reduce the Universal Service surcharge imposed on non-CRP customers. CRP Home Comfort accounted for $7.6 million in fiscal year 2016 expenditures and as such represented the most significant portion of total EnergySense activity.

On December 23, 2014, PGW filed a Petition for Approval of Demand Side Management Plan 2016-2020 ("DSM Phase II") with the PUC. On November 1, 2016 the PUC issued a Final Order in the DSM Phase II proceeding that set the FY 2017 CRP Home Comfort budget at $5,860,506 including the multifamily efficiency program. The order referred the FY 2018 – FY 2020 budgets to the Universal Service and Energy Conservation Plan process for further review and modification. PUC review of this plan is currently underway.

7.10. SENIOR CITIZEN DISCOUNT PROGRAM

The senior citizen discount program is a closed program. Since September 1, 2003, the program has not been available to new participants. However, PGW has approximately 15,000 participants as of February 2017 in its senior citizen discount program. All participants currently in the program were "grandfathered" in when the PUC discontinued it in September 2003. In 2004 there were approximately 70,000 "grandfathered" participants in the program. The senior citizen discount amounts to a 20 percent reduction on the participant's total gas bill each month.

7.11. OTHER PROGRAMS AND GRANTS

In addition to the programs described above, PGW also participates in or partially funds several other assistance programs that are intended to increase cash flow and reduce accounts receivable.

7.11.1. Low-Income Home Energy Assistance Program

The Federally funded LIHEAP provides funds to households to ensure continued utility service. The City's low-income residential gas consumers may apply for assistance through the Pennsylvania Department of Human Services (formerly the Department of Public Welfare). PGW district offices and many community organizations throughout Philadelphia offer assistance with the application process. The LIHEAP program consists of two grant components: cash grants and crisis grants. The main difference between the two grant types is that crisis grants are offered only to eligible customers whose utility service is off or in danger of having services terminated. Funds obtained are paid directly to PGW for crediting to the customer's account.

LIHEAP is an important source of low income assistance funding for PGW and has ranged over the last nine years (2007-2016) from a low of $17.3 million in 2016 to a high of $41.5 million in 2010. PGW's share of LIHEAP funds allocated by the Commonwealth of Pennsylvania has ranged from approximately 12 to 17 percent since 2007. These levels have been achieved through a vigorous educational and outreach program by PGW to encourage its low-income residential population to apply for the grants. Funding levels vary based on Federal allocation and program design by state.

Since 1996, the Commonwealth of Pennsylvania has had the flexibility to change the customer eligibility criteria for LIHEAP participation from 210 percent of the FPL to 110 percent of the FPL. During the 2016-2017 grant season, the program capped eligibility at 150 percent of the FPL.

In 2012-2013, Pennsylvania received approximately $185 million in LIHEAP funding by the Federal Government; approximately $153 million of which was used for grants. In 2013-2014, Pennsylvania received approximately $204 million; approximately $149 million of which was used for grants. In 2014-2015, Pennsylvania received approximately $204 million; approximately $149 million was to be used for grants. In 2015-2016, Pennsylvania received approximately $186 million, approximately $124 million was to be used for grants.

7.11.2. Vendor Payment Program

PGW continues to support a Vendor Payment Program for a group of customers known as Scattered Site Tenants of the PHA. The customers occupy dwellings, usually single family homes, owned by the PHA, for which the Federal Government provides rent subsidies. Under agreement with the PHA and the Scattered Site Tenants, the Federal Government's Department of Housing and Urban Development provides funding for a utility allowance to PHA, on behalf of the tenant. There are two groups of PHA tenants: one for which utility payments are received by PGW directly from PHA, and a second group, which is responsible for paying their own utility bills.

7.11.3. Utility Emergency Services Fund

PGW also participates in the Utility Emergency Services Fund ("UESF"), which is a private fuel fund set up with the assistance of the City, the Water Department, PECO Energy, individual contributions, and private foundations. Under this program, customers at or below 175 percent of the FPL may combine a LIHEAP grant with a UESF grant and matching grant from PGW, and their own payment, if necessary, to zero-out all arrearages to avoid termination or restore service. Except for possible special grant programs, the maximum UESF grant and PGW matching grant is $750 each (for a total of $1,500). To be eligible for a UESF grant, the customer must have a termination notice or already have service terminated. The customer must also apply for LIHEAP and must zero out their account. If the total arrearage is not satisfied by the combination of LIHEAP, UESF, and the matching PGW grant, then the customer must pay the balance that would remain prior to being approved for the UESF grant and matching utility grant. Also, customers are limited to one UESF grant every two years.

7.11.4. Dollar Plus Program

PGW also continues to support the Dollar Plus Program, wherein PGW's customers are asked to add $1.00 or more to their gas bill payments as a donation to the Utility Emergency Services Fund.

7.11.5. Payment Plans

PGW maintains a number of residential customer payment plans that are tailored to the customer's ability to pay in order to allow the customer the opportunity to pay down past arrearages and budget future usage and payments.

7.12. BILLING AND COLLECTIONS

To strengthen its financial condition, PGW utilizes a number of programs designed to improve collections and increase operational efficiencies. These programs are as follows:

***Soft-off monitoring*.** PGW automated many of the services associated with soft-off monitoring. Previously, when a customer moved, PGW deployed a field service representative to shut off service. Many times the field service representative would be unable to gain access to the meter and the service would remain on and continue to bill the out-going customer resulting in additional uncollectible receivables. PGW now final bills a customer's account, transfers the future usage expense responsibility to PGW and monitors the premises closely to avoid any excess usage or theft of service. In addition to decreasing the uncollectible receivables as a result of a failed shut off attempt, the soft-off program allows Operations to redirect field employees to other jobs resulting in a more efficient use of resources.

The soft-off monitoring benefits reflect the cost of having the program in place versus not having the program. The goal is for the cost of the program to be 25 percent less than the cost of not having a program.

Landlord Cooperation Program ("LCP"). The LCP allows landlords of residential properties to work collaboratively with PGW in a manner that improves PGW's ability to collect from residential tenants (landlords provide access to the meter) and minimize tenant delinquencies in exchange for not filing a lien on the landlord's property for a tenant's unpaid balance. When a landlord fails to cooperate or enroll in the program, the property is subject to liens. As of February 2017, LCP had approximately 76,900 registered premises.

Commercial Lien Notification Program ("CLNP"). The CLNP allows landlords of commercial properties to work collaboratively with PGW in a manner that improves PGW's ability to collect from commercial tenants (landlords provide access to the meter) and minimize tenant delinquencies in exchange for an additional advance notice of the intended filing of a lien. Regardless of enrollment in the program, a property remains subject to liens. As of February 2017, CLNP had approximately 419 registered premises.

Write-off reactivation. PGW ensures that prior written-off balances are immediately identified and appropriately transferred when the same customer re-applies for service, and when an applicant lived at the property during the time the debt was incurred.

Liens. PGW employs a largely automated lien process which facilitates the liening of eligible properties if there are account arrearages. PGW has reported that the City (on behalf of PGW) is currently defending PGW's liening process with respect to liens placed on properties where the owner was not the customer of record who incurred the arrearage.

In February 2016, the Federal District Court, Eastern District of Pennsylvania denied the City's summary judgment motion, identifying certain purported issues of material fact. In March 2016, the Court nevertheless granted the plaintiffs' summary judgment motion, finding that the process employed by the City to impose liens on non-owner occupied properties violates owners' due process rights.

In May 2016, following a hearing, the Court entered a preliminary injunction against the City and PGW restraining them, pending further order of the Court, from filing any new liens against such properties and from collecting upon existing liens. However, the Court permitted the City and PGW to continue to issue payoff statements to facilitate real estate transactions (PGW's typical method of satisfying its liens) on such properties, and to accept the payoffs, but directed it to segregate such money[15]. A hearing on permanent injunctive relief and other outstanding issues was held July 26, 2016.

On December 1, 2016, the Court issued an Order and Opinion certifying the class. On January 5, 2017 the Court issued an Order and Opinion addressing the request for permanent injunctive relief; however, the Court partially stayed its Order on February 24, 2017. Currently, pursuant to the Order and the partial stay of same, PGW is (a) prohibited from filing new liens against any property where the owner was not the customer who incurred the debt, subject to court review of new processes to impose such liens, (b) required to release, vacate and track certain liens that proceed to closing where the owner is not the customer[16], and (c) required to continue to segregate funds collected from landlord-owners for non-owner debt between May 4, 2016 and January 25, 2017.

On January 25, 2017, the City filed a Notice of Appeal with the Third Circuit Court of Appeals. The City's opening brief was filed and served on June 29, 2017. The City intends to pursue its appellate rights vigorously.

At the time of this Report, PGW cannot predict the impact that the permanent injunction would have on PGW's collections if the stay is vacated and the requirements of the Order of January 5, 2017 are reimposed by the Court on a permanent basis.

PGW also reports that formal complaints filed by a landlord and related entities with the PUC challenging the lawfulness of PGW's billing methodology regarding the application of payments, and the assessment of late payment charges for amounts of unpaid PGW debt liened under the Municipal Lien Act. The complaints were consolidated into several discrete groups for adjudication and disposition purposes owing to the numerous transactions involved and common questions of law and fact presented.

[15] A subsequent Order of the Court directed GW to refund the segregated sums but this order was stayed by the Court on February 24, 2017

[16] This requirement applies with respect to all liens attributable to non-owner debt owed to PGW on commercial rental properties, as well as liens attributable to non-owner debt owed to PGW on residential rental properties where the lien was imposed from 2009 forward, if the lien was imposed after the owner had obtained a residential rental license.

On September 17, 2015, the Administrative Law Judge assigned to the complaints issued an Initial Decision with respect to the first group ("First Initial Decision")[17][18] of the consolidated complaints, in response to which PGW filed Exceptions on October 7, 2015. On December 8, 2016, the PUC issued an Order and Opinion, granting in part and denying in part the PGW Exceptions. Accordingly, the PUC adopted the First Initial Decision as modified consistent with the discussion contained in the Opinion and Order as summarized below.

Per the Order and Opinion, the PUC found that PGW improperly assessed late payment charges on arrearages that had been liened under the Municipal Lien Act. Under the PUC's analysis, the primary legal effect of the City's having filed municipal liens on the subject accounts was to remove the late payment charges for the unpaid utility bills from the PUC's jurisdiction. Following that line of reasoning, the PUC opined that it lacks jurisdiction to determine what, if any, is the appropriate rate of interest that PGW may charge for such arrearages. The PUC stated that the appropriate remedy therefore was to remove late payment charges from the customers' bills.[19]

In a separate analysis, the PUC also found that the manner in which PGW applied partial payments to outstanding balances is unreasonable and does not conform to PUC policies. (PGW's practice is to apply all payments to any unpaid late payment charges first, before satisfying any amount owed for gas service.)

The PUC ordered that the several accounts that are the subject of the first group of complaints required a total bill credit in the sum of $566,544.97. The PUC also assessed a civil penalty of $27,000 for violations of the Public Utility Code. The total liability for the first group of these consolidated matters is $593,544.97.

On December 23, 2016 PGW petitioned the PUC for Reconsideration and Rehearing of this matter including a request to stay the implementation of the Order and Opinion, thus preserving the ability

[17] On November 23, 2015, the Administrative Law Judge assigned to the complaints issued an Initial Decision with respect to a second group of the consolidated complaints ("Second Initial Decision"), to which PGW filed Exceptions on December 14, 2015. That Second Initial Decision is consistent with the First Initial Decision and the Opinion and Order of the first group. That Second Initial Decision ordered that the several accounts that are the subject of the proceedings required a total credit in the sum of $313,157.83, to correct for charging of late payment charges. The Second Initial Decision also assessed a civil penalty of $27,000 for violations of the Public Utility Code. The total liability for consolidated matters in the second group is $340,157.83. The PUC has not issued an Order and Opinion for this group, but the facts are similar to the first group described above, and it is expected that the PUC's treatment of these complaints would ultimately parallel its disposition of the first group currently upon reconsideration.

[18] On February 4, 2016, the Administrative Law Judge assigned to the complaints issued an Initial Decision with respect to a third group ("Third Initial Decision") of the consolidated complaints, to which PGW filed Exceptions on February 24, 2016. That Third Initial Decision is consistent with the First Initial Decision and the Opinion and Order of the first group. That Third Initial Decision ordered that the several accounts that are the subject of the third group of complaints required a total credit in the sum of $157,698.85, to correct for charging of late payment charges. The Third Initial Decision also assessed a civil penalty of $27,000 for violations of the Public Utility Code. The total liability for these consolidated matters in the third group is $184,698.85. The PUC has not issued an Order and Opinion for this group, but the facts are similar to the first group described above, and it is expected that the PUC's treatment of these complaints would ultimately parallel its disposition of the first group currently upon reconsideration.

[19] The Order and Opinion mandated removal of the late payment charges from the bill, but did not per se invalidate the late charges.

to appeal the matter to the Commonwealth Court. On December 28, 2016, the PUC granted PGW's petition, which operates as a stay, pending review on the merits. PGW is awaiting the PUC's determination on the petition.

At this time, PGW cannot predict the impact that the initial Opinion and Order would have on PGW's collections and collections practices if late payment charges could not be assessed on monthly bills with respect to arrearages that are liened. Further, PGW has not quantified the impact of the PUC's adjustment of PGW's traditional application of payments, described above.

Risk-based collections. PGW utilizes a risk based collection strategy. Customers' past payment patterns are analyzed, and each customer is assigned a "score" based on the age of the receivable, amount of the receivable, and risk of their receivable going to write off. Actual write-off occurs 90 days after the shut-off for accounts when there are no payments against the final bill. Based on a customer's score, PGW determines an appropriate collection path. If a customer has a high score, they are selected for the physical shut off path, however if a customer has a lower score, more frequent customer communications may be sufficient to ensure payment.

Public Utility Law and Collections. PGW continues to abide by all regulations with respect to collections. On November 30, 2004, the Pennsylvania General Assembly passed and the Governor signed Act 201, entitled the "Responsible Utility Customer Protection Act" (now codified in the Pennsylvania Public Utility Code and referred to hereafter as "Chapter 14").

Chapter 14 provides a number of tools to help PGW collect payment, including but not limited to confirmation that termination of service following shut off notification may occur up to 60 days after notice; shut off with notice is permitted for things such as failure to meet the terms of a payment agreement; shut off without notice is permitted for things such as theft of service, obtaining service through fraud, tampering with a gas meter; winter termination (December 1 – March 31) without PUC prior approval for customers whose household income exceeds 250 percent of the federal poverty level; and winter termination (January 1 – March 31) without PUC prior approval (under specified conditions) for customers whose household income exceeds 150 percent but does not exceed 250 percent of the federal poverty level.

Chapter 14 was scheduled to expire on December 31, 2014, but the law was extended and amended effective December 21, 2014. Amendments include (among other things) a change in the deposit interest rate and elimination of a 24 month hold maximum for security deposits. In addition, Chapter 14 is now scheduled to expire December 31, 2024.

In addition to its collection efforts, PGW continues to offer customers many options to pay their bills in order to avoid collection activity:

Customer Service Centers ("CSC"). A CSC or District Office is a remote office owned or leased by PGW that accepts payments for all PGW services. PGW has six CSCs located throughout Philadelphia. Due to staffing requirements, only four CSCs are operational per day.

Authorized Agents for walk–in payments. Customers can make payments at authorized agent locations, usually check cashing agencies. These locations are "In Person Payment" centers, or have BuyPay or Americash and Checkfree service. An authorized agent is an establishment that accepts payments from PGW customers and remits the total to PGW.

Pay by Phone. Credit card or check payments are accepted through the Interactive Voice Response ("IVR") system using a 3rd party vendor and by PGW customer service representatives through a desktop application maintained by the same vendor.

Web Payments. Customers may pay their bill by credit card or check on PGW's website which is processed through a third-party vendor's web portal.

Auto Payments. Customers may sign up to have monthly payments automatically deducted from their bank account on their bill due date.

7.13. COMPETITION

PGW's customer, volume, and revenue mix is heavily weighted towards the residential and smaller commercial markets. PGW currently holds in excess of 85 percent of the home heating market in the City with fuel oil constituting most of the remaining market. This high market share, combined with a service territory that is not growing, limits PGW's ability to increase its customer base. For residential and small commercial customers, the short-run cost of changing energy sources is generally cost prohibitive without some kind of incentive to switch appliances (rebates or financing of appliances, for example). While not totally immune from competition, the residential and small to medium-sized commercial markets are quite stable, however opportunities for PGW to increase market share are limited without investment in marketing or incentive programs.

Generally, competition in the larger commercial and industrial markets is common. PGW's customers utilizing the interruptible, third-party supplied gas rate (known as Interruptible Transportation or "IT") have the ability to switch between alternate energies (oil, electric or steam). If the equivalent price of natural gas is higher than alternative energy's, many customers will opt to switch energy sources. Further, these IT customers may be limited during peak periods in the winter (curtailed by PGW or third-party suppliers). While large commercial and industrial loads are an important part of PGW's base, PGW's risk to competition is lower than most natural gas utilities that have a relatively higher industrial load. In addition, regulations of the Clean Air Act will at times cause dual fuel commercial and industrial consumers to use natural gas (instead of fuel oil) in order to meet stringent air emission operating permits.

PGW encourages its commercial customers to utilize CHP solutions. On-site CHP provides the customer with the capability to reduce their electric consumption from the grid while capturing the waste heat from the CHP unit for heating or cooling needs. CHP projects provide significant operating savings to the customer and revenue for PGW, but are subject to a significant upfront investment in capital cost.

PGW is promoting the utilization of Natural Gas Vehicles (NGVs) internally and externally. Its internal fleet consists of approximately 40 sedans with plans to expand the fleet with utility trucks. From an external perspective the City of Philadelphia has acquired grants, with the guidance of PGW, to purchase a fleet of refuse trucks. PGW is actively pursuing the construction of an NGV fueling station open to the public and strategically located near the City's refuse truck station.

Finally, the commodity price of natural gas has fallen significantly with predictions of low stable prices for several years. The spread between natural gas and alternative energy sources has resulted in large commercial and industrial customers switching to natural gas.

8. Financial Feasibility for the Fifteenth Series Bonds

The financial data used in the analyses presented herein were obtained from the historical financial records of PGW, PUC GCR filings, and proposed operating and capital budgets for fiscal years 2018 through 2022. PGW's financial statements are audited annually. The most recently available audited financial statement is for fiscal year 2016 and may be viewed at www.pgworks.com. PGW's financial statements are maintained in conformity with U.S. Generally Accepted Accounting Principles (U.S. GAAP), and are in accordance with City reporting requirements.

8.1. PROJECTED REVENUES

Operating revenues for PGW consist principally of revenues from the sale and transportation of natural gas to residents of the City. Non-operating revenues include interest income and miscellaneous other revenues from non-operating sources.

8.1.1. Projected Average Number of Customers

While PGW had experienced a declining customer base for many years, the number of customers has stabilized in recent years and the average number of customers has increased slightly each year since 2015. This improved trend is reflected in the small growth projected in the number of customers served by PGW during fiscal years 2018 through 2022. Table 9 summarizes projected average number of customers. Historical average number of customers (for fiscal years 2012 through 2016) has been approximately 499,000. The total average number of customers served is projected to increase from approximately 501,800 in fiscal year 2017 to about 504,600 in fiscal year 2022, a total increase of about 0.6 percent over five years[20]. Most of this projected increase is in the number of residential heating customers served.

It is estimated that for fiscal year 2017, 5,070 commercial, industrial and municipal customers, or 1.0 percent of total customers, will take gas supply, transportation and storage services from a third party supplier. For purposes of this Report, it is assumed that the number of transport customers will continue to grow annually, reaching 6,058, or 1.2 percent of total customers, by 2022.

The principal difference between customers taking sales versus transportation service is that PGW does not buy the natural gas commodity for the transportation customers. However, PGW charges customers taking transportation service for the delivery of gas through its distribution system. This charge for transportation service should not differ appreciably from the charge (less gas cost) that would apply to sales service customers. Therefore, PGW is unlikely to experience a material reduction in margin (gross revenues less cost of gas) due to customers migrating to transportation service. While it is difficult to predict with certainty the actual number of customers who will migrate and the timing of such a migration, PGW's projection of interruptible customers transferring to transportation service appears to be reasonable. If the rates for transportation service are properly designed, the margin realized by PGW will not be materially sensitive to whether customers take sales or transportation service, or both.

[20] PGW's Marketing Department produces an annual load forecast detailing load growth by rate class based off of forecasted sales data and five years of actual data. The Gas Planning Department references this load forecast to project customer count data.

Table 9 Historical and Projected Average Number of Customers

Line		Actual					Estimate	Budget	Projected[a]			
No.	Description	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
1	**Gas Sales Volumes**											
2	**Non-Heating Customers**											
3	***Firm***											
4	Residential	28,165	26,277	24,239	22,730	20,814	20,493	19,250	17,971	16,690	15,408	14,124
5	CRP Residential	725	564	375	258	197	238	246	254	262	270	278
6	Commercial	4,605	4,405	4,257	4,138	3,745	4,023	3,982	3,954	3,934	3,923	3,926
7	Commercial A/C	0	0	0	0	1	1	1	1	1	1	1
8	Industrial	174	162	154	142	120	136	136	136	136	136	136
9	Municipal	112	102	104	104	86	102	102	102	102	102	102
10	Municipal A/C	0	0	0	0	2	2	2	2	2	2	2
11	Housing Authority	0	0	0	0	0	0	0	0	0	0	0
12	NGV Firm	1	1	2	4	3	3	3	3	3	3	3
13	Total Average Firm Non-Heating	33,782	31,512	29,130	27,377	24,967	24,999	23,721	22,422	21,129	19,844	18,571
14	***Interruptible***											
15	LNG - Direct	0	0	0	2	0	4	4	4	4	4	4
16	Other Interruptible	38	12	7	3	4	4	4	4	4	4	4
17	Total Average Interruptible	38	12	7	5	4	8	8	8	8	8	8
18	**Total Average Non-Heating Customers**	**33,820**	**31,524**	**29,138**	**27,382**	**24,972**	**25,007**	**23,729**	**22,430**	**21,137**	**19,852**	**18,579**
19	**Heating Customers**											
20	Residential	359,770	367,969	379,057	386,902	395,816	391,403	390,726	390,088	389,451	388,810	388,168
21	CRP Residential	80,909	75,594	66,298	60,848	55,339	60,387	62,379	64,372	66,364	68,356	70,348
22	PHA/GS	1,702	1,660	1,733	1,835	1,950	1,863	1,863	1,863	1,863	1,863	1,863
23	Commercial	17,640	17,390	17,242	17,141	17,343	17,155	17,392	17,665	17,974	18,312	18,678
24	Commercial A/C	1	1	4	1	0	0	0	0	0	0	
25	Industrial	444	418	410	393	399	388	388	388	388	388	388
26	Municipal	416	384	379	378	388	380	379	378	377	376	375
27	Housing Authority	845	833	825	877	360	152	147	142	137	132	127
28	**Total Average Heating Customers**	**461,727**	**464,249**	**465,948**	**468,374**	**471,594**	**471,728**	**473,274**	**474,896**	**476,554**	**478,237**	**479,947**
29	**Total Average Sales Customers**	**495,547**	**495,773**	**495,085**	**495,756**	**496,566**	**496,735**	**497,003**	**497,326**	**497,691**	**498,089**	**498,526**
30	**Transportation**											
31	Firm Transportation	2,254	2,760	3,081	3,285	4,086	4,643	4,930	5,170	5,363	5,514	5,631
32	Interruptible Transportation	367	409	424	431	427	427	427	427	427	427	427
33	**Total Average Transportation Customers[b]**	**2,621**	**3,169**	**3,505**	**3,716**	**4,513**	**5,070**	**5,357**	**5,597**	**5,790**	**5,941**	**6,058**
34	**Total Average Number of Customers**	**498,167**	**498,942**	**498,590**	**499,472**	**501,079**	**501,804**	**502,360**	**502,923**	**503,480**	**504,030**	**504,584**

(a) Projected figures are based on budgeted department figures.

(b) Increase in transportation customers is due to the transfer of interruptible customers to GTS service and firm sales customers to firm transportation service. No firm customers are assumed to transfer to GTS service.

8.1.2. Historical and Projected Gas Sales and Throughput

Historical throughput (sales plus transportation volumes) for the 2012 through 2016 fiscal years and estimated or projected throughput for the 2017 through 2022 fiscal years are summarized in Table 10. The throughput volumes for the projected period are based on 3,855 HDDs[21] for 2018 through 2022.

The increase in projected total residential throughput (heating and non-heating) from 2018 through 2022 is consistent with the projected increase in the average number of residential customers. The projection for residential and commercial throughput generally reflects a constant use per customer.

As interruptible customers migrate to transportation service, sales volumes attributable to interruptible customers also decline as transportation volumes increase. As stated previously, if transportation rates are designed properly, the migration of customers and volumes from firm or interruptible sales service to transportation service should not translate into a material change in margin. Although transportation throughput increases from 32.3 million Mcf in 2018 to 36.2 million Mcf in 2022, sales volumes remain relatively constant. Therefore, most of this increase in transportation throughput is attributable to incremental new business. This increase in transportation throughput is resulting in an increase in the overall PGW throughput. This trend is primarily due to the price advantage that natural gas has over alternate fuels (such as oil) and this trend is expected to continue during the projection period.

[21] 3,855 HDDs is the 10-year normal weather average HDDs that were the basis of PGW's original rate filing on February 27, 2017. The difference between 10-year normal weather and 20-year normal weather as proposed in the Settlement Agreement is not shown in the volumes in Table 10, however the revenue impact is shown as a pro forma adjustment in subsequent tables in this Report.

Table 10 Historical and Projected Sales and Throughput

Line No.	Description	Actual[a] 2012	2013	2014	2015	2016	Estimate 2017	Budget 2018	Projected 2019	2020	2021	2022
		MMcf	MMcf	MMcf	MMcf	MMcf	MMcf	MMcf	MMcf	MMcf	MMcf	MMcf
1	**Gas Sales Volumes**											
2	**Non-heating**											
3	***Firm***											
4	Residential	553	531	508	487	412	447	402	375	348	321	294
5	CRP Residential	32	28	21	16	13	19	18	18	19	20	20
6	Commercial	1,199	1,191	1,141	1,161	952	1,056	956	895	837	782	730
7	Commercial A/C	-	-	9	4	5	5	5	5	5	5	5
8	Industrial	239	135	116	110	83	107	101	101	101	101	101
9	Municipal	119	114	151	127	99	135	126	126	126	126	126
10	Municipal A/C	5	3	7	2	2	2	2	2	2	2	2
11	Housing Authority	-	-	-	-	-	-	-	-	-	-	-
12	NGV Firm	1	1	2	4	1	2	2	2	2	2	2
13	Total Average Firm Non-Heating	2,148	2,003	1,955	1,911	1,569	1,772	1,611	1,524	1,440	1,358	1,280
14	***Interruptible***											
15	LNG - Direct	-	239	1,044	499	10	1,000	1,000	1,000	1,000	1,000	1,000
16	Other Interruptible	192	652	53	15	28	17	17	17	17	17	17
17	Total Interruptible	192	891	1,097	514	38	1,017	1,017	1,017	1,017	1,017	1,017
18	**Total Non-Heating**	**2,341**	**2,894**	**3,052**	**2,425**	**1,606**	**2,788**	**2,628**	**2,541**	**2,457**	**2,375**	**2,297**
19	**Heating**											
20	Residential	21,361	26,272	30,097	30,563	24,194	28,896	26,898	26,800	26,715	26,610	26,516
21	CRP Residential	7,969	8,758	8,349	7,766	5,823	7,414	7,104	7,311	7,522	7,729	7,938
22	PHA/GS	146	163	189	194	162	178	166	166	166	166	166
23	Commercial	5,546	6,169	6,468	6,496	5,149	6,173	5,956	6,121	6,305	6,498	6,702
24	Commercial A/C	-	-	-	-	-	-	-	-	-	-	-
25	Industrial	272	344	386	363	250	298	277	276	275	274	273
26	Municipal	454	462	492	525	417	491	455	453	452	451	450
27	Housing Authority	448	573	597	597	121	47	43	42	40	39	38
28	**Total Heating**	**36,196**	**42,741**	**46,577**	**46,504**	**36,115**	**43,497**	**40,899**	**41,170**	**41,477**	**41,767**	**42,082**
29	**Total Sales Volumes**	**38,537**	**45,635**	**49,629**	**48,929**	**37,722**	**46,285**	**43,527**	**43,711**	**43,934**	**44,142**	**44,380**
30	**Transportation**											
31	Firm Transportation	2,483	3,427	4,087	4,294	4,123	4,996	4,860	4,963	5,044	5,108	5,158
32	Interruptible Transportation	21,890	23,055	25,271	26,004	23,958	26,893	27,394	28,309	29,279	30,132	31,040
33	**Total Transportation[b]**	**24,373**	**26,483**	**29,358**	**30,298**	**28,081**	**31,889**	**32,254**	**33,272**	**34,323**	**35,240**	**36,198**
34	**Total Throughput**	**62,910**	**72,118**	**78,987**	**79,227**	**65,803**	**78,175**	**75,780**	**76,983**	**78,257**	**79,382**	**80,578**

(a) PGW historical data. CRP volumes are included in appropriate residential figure.

(b) Increase in transportation sales is due to the transfer of interruptible customers to GTS service and firm sales customers to firm transportation service. No firm customers are assumed to transfer to GTS service.

8.1.3. Sales and Transportation Revenues

Historical revenues (sales plus transportation service) for the 2012 through 2016 fiscal years and estimated or projected revenues for the 2017 through 2022 fiscal years are summarized in Table 11. The revenue figures shown in Table 11 are based on application of PGW's existing rates to the projected number of customers, projected normal sales and transported volumes, the gas cost assumptions discussed in *Section 8.3.1, Gas Costs* , DSIC surcharge revenue, the $42.0 million of base rate relief revenue proposed in the Settlement Agreement in PGW's ongoing rate case, and a pro forma adjustment for the change in normal weather assumption (reflected in line 37a of Table 11). The revenue projections reflect the same adjustments made to sales and throughput (migration of interruptible customers to transportation). Black & Veatch assumes, consistent with PGW's existing GCR, that changes in the gas cost recovery portion of revenues will equal changes in gas costs.

In this Report, the revenue projections reflect currently effective rates and a 96 percent collection factor on billed revenues (*See Table 13*). This Report reflects the base rates which are the same rates as those reflected in the case PGW filed in December 2009 as those same base rates were reflected in the May 19, 2010 Settlement and July 29, 2010 PUC Order. This Report assumes that PGW will realize a net increase in base rate revenues of $42.0 million (based on 20-year normal weather) in fiscal year 2018 as discussed in *Section 7.1.5, 2017 General Rate Relief Filing* of this Report, and that PGW will realize a net increase in base rate revenues of $40.0 million in fiscal year 2021 in a future rate case. We have assumed for the purpose of this Report that the PUC will follow its Policy Statement which reaffirmed: 1) the use of the cash flow method to determine PGW's allowable revenue requirement, and 2) the PUC's obligation to establish rate levels adequate to permit PGW to satisfy its bond ordinance covenants. If revenues are less than the projections reflected in this Report or costs increase to levels above those reflected in this Report, PGW may have to file for additional rate relief (or PGW will have to achieve an equivalent combination of permanent revenue enhancements or cost savings). If the base rate increase proposed in the Settlement Agreement is approved for fiscal year 2018, it will represent the first base rate increase in eight years.

The level of revenues projected for fiscal years 2017 through 2022 is based on 20-year normal weather conditions[22]. As discussed in *Section 7.4, Weather Normalization Adjustment*, the WNA essentially removes the single biggest risk to PGW of recovering its approved margin during periods of warmer than normal weather during the winter season as long as it remains in effect. Because PGW's WNA tariff has no sunset provision, the WNA will continue in place unless the PUC issues an order directing that it be discontinued. Black & Veatch assumes for the purposes of this Report that the WNA will remain in effect through the projected period.

As with the projected volume and number of customers, as interruptible sales volumes and customers migrate to interruptible transportation service, so do revenues. Total transportation revenues also increase due to the previously discussed forecasted increase in customers migrating from firm sales to firm transportation service. As stated previously, if transportation rates are

[22] Table 11 shows projected revenue by rate class based on 10-year normal weather as originally proposed by PGW in its initial rate relief filing on February 27, 2017, and a pro forma adjustment for the projected revenue associated with the 20-year normal weather as proposed in the Settlement Agreement (line 37a).

designed properly, this migration should not translate into a material reduction in net contribution margin and hence, net cash flow and income should not be materially affected.

Table 11 Historical and Projected Revenues

(Thousands of Dollars)

Line		Actual[a]					Estimate	Budget	Projected			
No.	Description	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
		$	$	$	$	$	$	$	$	$	$	$
	Gas Sales Revenues											
	Non-heating											
	Firm											
1	Residential	12,362	11,987	11,030	9,943	7,883	8,032	7,523	7,092	6,648	6,195	5,737
2	CRP Residential[b]	-	-	-	-	-	248	249	260	271	283	295
3	CRP Shortfall	(31)	(98)	(62)	(60)	(58)	(88)	(82)	(87)	(93)	(99)	(105)
4	Commercial	16,265	16,215	15,386	14,439	10,322	11,389	10,799	10,323	9,829	9,356	8,925
5	Industrial	3,234	1,875	1,497	1,351	896	1,142	1,122	1,141	1,155	1,171	1,189
6	Municipal	1,444	1,360	1,746	1,368	879	1,194	1,173	1,194	1,213	1,234	1,256
7	Housing Authority	-	-	-	-	-	-	-	-	-	-	-
8	NGV	9	12	15	30	8	10	11	11	11	12	12
9	Total Firm Non-heating	33,283	31,351	29,612	27,071	19,930	21,927	20,795	19,934	19,034	18,152	17,309
	Interruptible											
10	LNG - Direct	-	1,415	6,201	3,032	49	4,130	4,301	4,365	4,436	4,522	4,635
11	Other Interruptible	3,338	3,288	2,867	640	297	72	77	80	82	85	87
12	Total Interruptible	3,338	4,703	9,068	3,672	346	4,202	4,378	4,445	4,518	4,607	4,722
13	**Subtotal Non-Heating**	**36,621**	**36,054**	**38,680**	**30,743**	**20,276**	**26,129**	**25,173**	**24,379**	**23,552**	**22,759**	**22,031**
14	Cost of Gas Increase	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
15	Prior Year's Gas Cost Recovery	433	(842)	218	(511)	762	(860)	9	3	(2)	(1)	(2)
16	**Total Non-Heating**	**37,054**	**35,212**	**38,898**	**30,232**	**21,038**	**25,269**	**25,182**	**24,382**	**23,550**	**22,758**	**22,029**
	Heating											
17	Residential	492,044	574,369	605,617	575,202	406,286	384,528	374,542	378,353	382,009	385,571	389,612
18	CRP Residential[c]	-	-	-	-	0	93,732	93,733	97,738	101,783	105,898	110,225
19	CRP Shortfall	(63,200)	(70,500)	(65,024)	(54,425)	(34,175)	(38,425)	(36,269)	(38,387)	(40,545)	(42,763)	(45,189)
20	Commercial	76,027	83,706	84,920	79,958	54,853	65,088	65,562	68,437	71,346	74,521	77,981
21	Industrial	3,821	4,806	4,914	4,439	2,724	3,197	3,090	2,515	3,162	3,195	3,233
22	Municipal	5,470	5,485	5,579	5,601	3,677	4,322	4,201	4,264	4,324	4,384	4,451
23	Housing Authority	5,788	7,314	7,374	6,884	1,328	2,562	2,496	3,133	2,531	2,547	2,567
24	**Subtotal Heating**	**519,950**	**605,180**	**643,380**	**617,659**	**434,693**	**515,004**	**507,355**	**516,053**	**524,610**	**533,353**	**542,880**
25	Cost of Gas Increase	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
26	Prior Year's Gas Cost Recovery	4,244	(12,408)	6,174	(12,124)	17,424	(19,790)	208	43	(18)	(37)	(26)
27	**Total Heating**	**524,194**	**592,772**	**649,554**	**605,535**	**452,117**	**495,214**	**507,563**	**516,096**	**524,592**	**533,316**	**542,854**
28	WNA Adjustment - Heating	44,016	8,061	(11,811)	(10,372)	39,021	5,556	-	-	-	-	-
29	**Total Adjusted Heating**	**568,210**	**600,833**	**637,743**	**595,163**	**491,138**	**500,770**	**507,563**	**516,096**	**524,592**	**533,316**	**542,854**
30	**Total Sales Revenues**	**605,264**	**636,045**	**676,641**	**625,395**	**512,176**	**526,039**	**532,745**	**540,478**	**548,142**	**556,074**	**564,883**
31	**Total Transportation[d]**	**27,912**	**36,698**	**40,807**	**39,293**	**36,962**	**43,309**	**42,352**	**43,893**	**45,216**	**46,432**	**47,595**
32	WNA Adjustment - Transportation	1,412	331	(488)	(374)	2,458	349	-	-	-	-	-
33	**Total Adjusted Transportation**	**29,324**	**37,029**	**40,319**	**38,919**	**39,420**	**43,658**	**42,352**	**43,893**	**45,216**	**46,432**	**47,595**
34	**Total Weather Normalization Adjustment**	**45,428**	**8,392**	**(12,299)**	**(10,746)**	**41,479**	**5,905**	**-**	**-**	**-**	**-**	**-**
35	**Total Revenues[e]**	**634,588**	**673,074**	**716,960**	**664,314**	**551,596**	**569,697**	**575,097**	**584,371**	**593,358**	**602,506**	**612,478**
36	DSIC Surcharge	0	681	19,173	13,817	22,581	32,541	30,579	30,895	31,214	31,518	31,846
37	Net Revenue Increase[f]	0	0	0	0	0	0	42,000	42,000	42,000	82,000	82,000
37a	Pro Forma Adjustment, 20HDD Average[g]	0	0	0	0	0	0	11,824	16,875	16,910	17,251	17,388
38	**Adjusted Total Gas Revenues[e]**	**634,588**	**673,755**	**736,133**	**678,131**	**574,177**	**602,238**	**659,500**	**674,141**	**683,482**	**733,275**	**743,712**

(a) PGW historical data.
(b) Actual revenues for 2012 through 2016 included in Residential, Line 1
(c) Actual revenues for 2012 through 2016 included in Residential, Line 17
(d) Increase in transportation revenues is due to the transfer of interruptible customers to GTS service. No firm customers are assumed to transfer to GTS service.
(e) Total Revenues does not include Unbilled Gas Adjustment
(f) Settlement Agreement revenue *(See Section 7.1.5)* , plus revenue enhancement, cost savings and/or base rate increase of $40 million in FY2021.
(g) Estimated pro forma revenue impact from the change from 10-year average HDDs (February 27, 2017 filing) to 20-year average HDDs (Settlement Agreement)

8.1.4. Other Operating Revenues

Other operating revenues are projected to be approximately $21.0 to $21.9 million for fiscal years 2017 through 2022 (Table 17, Line 9). These revenues consist of sales of energy-related appliance services, finance charges realized on overdue accounts, field collection charges, margin on LNG sales and other miscellaneous sources.

8.1.5. Assistance Programs

As part of PGW's proactive approach to managing accounts receivable balances, PGW has continued to develop programs targeted at assisting customers with meeting their energy costs. Table 12 details PGW's LIHEAP participation in recent years and provides an estimate for fiscal year 2017. Assistance programs are estimated to contribute $20.7 million in revenues in fiscal year 2017 and projected to contribute $21.0 million in fiscal year 2018.

8.1.6. Accounts Receivable

Table 13 summarizes historical and projected accounts receivable and account write-offs. As shown in Table 13, net accounts receivable decreased approximately 10 percent from $82.0 million in 2012 to $73.6 million in 2016. Between 2017 and 2022, net accounts receivable are projected to decrease 10 percent primarily due to a projected decline in receivables as a percentage of billed revenues. If actual gas costs increase, accounts receivable and bad debts may increase. Conversely, if gas costs are less than these levels, accounts receivable and bad debts may decrease.

Realized bad debt expense as a percent of billed gas revenues is projected to range between 4.4 and 4.9 percent from 2017 to 2022. Table 13 also shows PGW's historical and projected average collection rate. PGW's collection rate has averaged 95.7 percent over the period 2012 through 2016, reaching as high as 98.4 percent in 2016. A collection rate of 96 percent is projected during the 2017 through 2022 period.

If there is an economic downturn, and/or the commodity price of natural gas increases significantly, then billing and collections could be adversely affected, and a corresponding decrease in the collection rate and increase in receivables beyond those levels assumed in our projections could result.

Table 12 Historical and Budgeted Assistance Programs

	Historical										Estimate		Budget	
Description	2012		2013		2014		2015		2016		2017		2018	
Grant Money Available	**$172,168,332**		**$153,405,881**		**$149,467,482**		**$149,051,201**		**$159,500,539**		**$140,956,948**		**$150,000,000**	
Cash	$143,057,420	83.1%	$111,256,630	72.5%	$92,464,195	61.9%	$94,822,769	63.6%	$119,674,070	75.0%	$108,505,078	77.0%	$108,000,000	72.0%
Crisis	$29,110,912	16.9%	$42,149,251	27.5%	$57,003,287	38.1%	$54,228,432	36.4%	$39,826,469	25.0%	$32,451,870	23.0%	$42,000,000	28.0%
Number of Grants														
State of PA														
Cash	392,338	78.9%	390,872	76.6%	397,954	76.8%	390,121	75.0%	345,246	76.0%	348,140	78.4%	361,200	76.4%
Crisis	105,183	21.1%	119,264	23.4%	120,000	23.2%	130,349	25.0%	108,993	24.0%	95,679	21.6%	111,700	23.6%
Total State of PA	497,521	100.0%	510,136	100.0%	517,954	100.0%	520,470	100.0%	454,239	100.0%	443,819	100.0%	472,900	100.0%
PGW Share of Total PA														
Cash	64,223	16.4%	64,882	16.6%	66,565	16.7%	60,103	15.4%	47,447	13.7%	60,769	17.5%	56,100	15.5%
Crisis	8,381	8.0%	12,118	10.2%	13,379	11.1%	14,060	10.8%	19,131	17.6%	5,176	5.4%	12,800	11.5%
Total PGW Share of Total PA	72,604	14.6%	77,000	15.1%	79,944	15.4%	74,163	14.2%	66,578	14.7%	65,945	14.9%	68,900	14.6%
Total Funding - Final														
State of PA														
Cash	$143,057,420		$111,256,630		$92,464,195		$94,822,769		$119,674,070		$108,505,078		$108,000,000	
Crisis	$29,110,912		$42,149,251		$57,003,287		$54,228,432		$39,826,469		$32,451,870		$42,000,000	
Total State of PA	$172,168,332		$153,405,881		$149,467,482		$149,051,201		$159,500,539		$140,956,948		$150,000,000	
PGW Share of Total PA														
PGW - Cash	$24,238,191	16.9%	$16,336,081	14.7%	$15,675,586	17.0%	$15,249,011	16.1%	$15,239,849	12.7%	$19,060,877	17.6%	$17,000,000	15.7%
PGW - Crisis	$1,981,965	6.8%	$3,371,291	8.0%	$4,688,877	8.2%	$4,178,706	7.7%	$4,861,736	12.2%	$1,624,897	5.0%	$4,000,000	9.5%
Total PGW Share of Total PA	$26,220,155	15.2%	$19,707,371	12.8%	$20,364,463	13.6%	$19,427,717	13.0%	$20,101,585	12.6%	$20,685,774	14.7%	$21,000,000	14.0%
Value of Grants, per customer														
State of PA														
Cash	$365		$285		$232		$243		$347		$312		$299	
Crisis	$277		$353		$475		$416		$365		$339		$376	
PGW														
Cash	$377		$252		$235		$254		$321		$314		$303	
Crisis	$236		$278		$350		$297		$254		$314		$313	

Table 13 Historical and Projected Accounts Receivable and Write-offs

Description	Historical					Estimate	Budget	Projected			
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Billed Gas Revenues ($000) [(a)]	629,911	687,005	729,741	690,766	555,991	622,888	659,283	674,095	683,502	733,313	743,740
Accounts Receivable ($000)	179,754	203,326	208,806	188,882	147,849	142,641	139,800	136,128	132,841	128,775	125,182
Less: Reserve for Bad Debt	(97,757)	(105,577)	(107,349)	(102,029)	(74,286)	(71,890)	(69,928)	(67,438)	(65,693)	(63,378)	(61,581)
Net Accounts Receivable	81,997	97,749	101,457	86,853	73,563	70,751	69,872	68,690	67,148	65,397	63,601
Bad Debt Reserve/Accounts Receivable	54.4%	51.9%	51.4%	54.0%	50.2%	50.4%	50.0%	49.5%	49.5%	49.2%	49.2%
Net Write-Offs ($000)	38,401	29,028	38,056	40,153	54,610	33,000	30,738	31,966	31,949	34,795	34,744
Receivable/Billed Gas Revenues	28.5%	29.6%	28.6%	27.3%	26.6%	22.9%	21.2%	20.2%	19.4%	17.6%	16.8%
Bad Debt ($000)	36,702	39,971	38,848	34,833	27,133	30,654	28,826	29,526	30,254	32,530	32,997
Bad Debt/Billed Gas Revenues	5.8%	5.8%	5.3%	5.0%	4.9%	4.9%	4.4%	4.4%	4.4%	4.4%	4.4%
Bad Debt/Accounts Receivable	20.4%	19.7%	18.6%	18.4%	18.4%	21.5%	20.6%	21.7%	22.8%	25.3%	26.4%
Total Customer Receipts ($000)	633,497	657,125	724,622	700,933	571,544	626,853	661,952	676,525	685,899	734,612	744,992
Total Customer Billings ($000)	655,711	715,196	763,077	721,833	580,801	652,971	689,534	704,713	714,478	765,221	776,034
Collection Factor	96.61%	91.88%	94.96%	97.10%	98.41%	96.00%	96.00%	96.00%	96.00%	96.00%	96.00%
Five-Year Average Collection Factor (2012-2016)					95.67%						

(a) Adjusted Total Revenues (Table 11, Line 39) less Prior Year's Gas Cost Recovery (Table 11, Lines 26 and 15)

8.2. CAPITAL IMPROVEMENT PROGRAM FINANCING

The CIP described earlier (*See Section 6, Capital Improvement Program*) will be paid for by PGW through the combination of internally generated funds and the issuance of Bonds. Also, in financial support of PGW's LTIIP for the Distribution Department, approximately $31 to $32 million in annual DSIC proceeds are projected to fund the DSIC portion of the CIP through the projection period.

The City expects to use a portion of the proceeds of the Fifteenth Series Bonds to repay the $101 million in Notes projected to be outstanding, to potentially refund a portion of PGW's outstanding 1998 General Ordinance Gas Works Revenue Bonds, and to fund additional capital improvements. The Notes will be repaid contemporaneously with the issuance of the Fifteenth Series Bonds. The forecast anticipates issuing $180 million of bonds in fiscal year 2020.

The budget and projected CIP expenditures for the five-year period ending August 31, 2022, are shown on Line 14 of Table 14 and total approximately $576 million. Lines 1 through 11 outline the sources available to meet the CIP financing requirements. Line 1 in fiscal year 2017 shows no funds available in the Capital Improvement Fund as of August 31, 2016. Lines 2 through 6 show the net proceeds from bond sales, Lines 8 through 11 show the amount projected to be available from the DSIC surcharge, the Notes and internally generated funds, and Line 13 presents the total funds available. Planned fund uses are summarized on Lines 14 through 17 of Table 14.

Table 14 Capital Improvement Fund
(Thousands of Dollars)

Line No.	Description	Actual 2016	Estimate 2017	Budget 2018	Projected 2019	Projected 2020	Projected 2021	Projected 2022
		$	$	$	$	$	$	
1	Balance from Previous Year	0	0	113,603	58,864	0	120,693	60,689
2	Bond Proceeds @ Par	0	270,000	0	0	180,000	0	0
3	Less Discount & Issuance Costs	0	(3,510)	0	0	(500)	0	0
4	Less Deposit to Sinking Fund Reserve	0	(17,600)	0	0	(11,800)	0	0
5	Plus Draw from Sinking Fund Reserve	0	0	0	0	10,000	0	0
6	Net Bond Proceeds	0	248,890	0	0	177,700	0	0
7	Other Sources of Funds							
8	Distribution System Improvement Charge	26,253	32,541	30,579	30,895	31,214	31,518	31,846
9	Capital Restricted Fund	0	0	0	0	0	0	0
10	Twelfth Series (Notes)	41,000	30,000	0	0	0	0	0
11	Internally Generated Funds	33,080	35,091	23,431	25,991	24,935	25,491	28,597
12	Total Other Sources of Funds	100,333	97,632	54,010	56,886	56,149	57,009	60,443
13	Total Sources of Funds	100,333	346,522	167,613	115,750	233,849	177,702	121,132
14	Capital Expenditures	100,333	132,632	109,010	115,628	113,149	117,009	120,996
15	Interest Earned	0	(713)	(761)	(378)	(493)	(796)	(364)
16	Withdrawal of Interest Received	0	0	500	500	500	800	500
17	Repayment of Twelfth Series (Notes)	0	101,000	0	0	0	0	0
18	Total Uses of Funds	100,333	232,919	108,749	115,750	113,156	117,013	121,132
19	Net Balance - End of Year	0	113,603	58,864	0	120,693	60,689	0

As presented in Table 14, revenue bond issuance proceeds in fiscal years 2017 and 2020, coupled with $352.1 million from other funding sources (DSIC surcharge and internally generated funds) in fiscal years 2017 through 2022 are expected to provide sufficient funding for PGW to complete its planned CIP.

8.3. PROJECTED REVENUE REQUIREMENTS

PGW's rates are developed to provide sufficient levels of revenue to meet cost of gas, all operation and maintenance expenses of the System, debt service requirements on obligations issued for the System, capital improvement expenditures to be funded from current revenues, and other specific bond ordinance and revenue requirements. This section provides a discussion of the components that make up PGW's revenue requirements.

8.3.1. Gas Costs

Table 15, Line 1 presents PGW's historical and projected natural gas costs. The unit gas costs assumed by PGW and relied upon in this Report are projected to increase from approximately $4.25 per Mcf in fiscal year 2018 to $4.77 per Mcf in fiscal year 2022. PGW gas cost assumptions are based on pricing input from the futures prices from the New York Mercantile Exchange. PGW purchases its gas supplies under a portfolio approach as discussed in *Section 5.1, Supply Services*. As a result of the GCR, changes in the cost of gas result in equal changes in revenues. The mechanism by which PGW recovers its gas supply costs is discussed in *Section 7.3, Gas Cost Rate*. Line 1a of Table 15 shows the estimated increase in gas costs associated with the change from the 10-year normal weather assumption as originally filed by PGW on February 27, 2017 and the 20-year normal weather assumption included in the Settlement Agreement.

8.3.2. Operation and Maintenance Expenses

Table 15 presents PGW's historical and projected operation and maintenance expense. The audited expenses for 2016 serve as a base for the projected years.

As discussed in *Section 8.1.3, Sales and Transportation Revenues*, PGW's collection factor is projected to be approximately 96 percent of billed revenues for the 2018-2022 fiscal years with bad debt expense projected to range from $28.8 million in 2018 to $33.0 million in 2022. The higher level of bad debt expense for PGW relative to other gas utilities is consistent with the higher level of costs associated with social programs for PGW. Pension fund and health insurance costs are based on PGW's fiscal year 2017 operating budget filing and have been updated with the most current information from PGW for the projected period through fiscal year 2022. The number of employees is assumed to be 1,643 throughout the projected period.

Table 15 Historical and Projected Operation and Maintenance Expenses
(Thousands of Dollars)

Line		Historical					Estimate	Budget	Projected			
No.	Description	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
		$	$	$	$	$	$	$	$	$	$	$
	Operating Expenses											
1	Natural Gas	233,709	255,496	304,040	252,158	146,515	176,731	184,960	191,471	197,808	204,518	211,904
1a	Pro Forma Adjustment, 20HDD Average							4,874	5,483	5,663	5,855	6,063
2	Other Raw Materials	4	5	11	11	9	10	10	10	10	10	10
3	Subtotal Fuel	233,713	255,501	304,051	252,169	146,524	176,741	189,844	196,964	203,481	210,383	217,977
4	Gas Processing	15,640	17,592	19,637	18,180	17,948	17,666	17,521	17,837	18,216	18,457	18,857
5	Field Services	33,883	34,926	37,577	36,874	36,276	39,369	40,340	41,299	42,096	42,611	43,456
6	Distribution	27,750	30,259	36,929	38,629	37,173	41,690	42,562	43,528	44,358	44,925	45,824
7	Collection	3,939	3,766	3,629	3,457	3,341	4,354	4,420	4,519	4,609	4,651	4,695
8	Customer Services	11,946	11,102	11,187	12,262	12,432	13,503	13,807	14,126	14,408	14,627	14,919
9	Customer Accounting	7,552	7,531	7,644	7,735	7,571	8,399	8,487	8,671	8,844	8,977	9,157
10	Bad Debt Expense	36,702	39,971	38,848	34,833	27,133	30,654	28,826	29,526	30,254	32,530	32,997
11	Marketing & Point-of-Sale Expenses	6,664	6,789	7,783	6,956	3,671	4,355	4,439	4,538	4,625	4,694	4,785
12	Administrative & General	53,962	54,737	58,962	60,253	67,139	69,025	66,334	66,160	67,162	67,518	68,595
13	Health Insurance	44,343	42,787	46,483	51,051	53,370	54,505	27,058	29,609	32,318	35,186	38,310
14	Capitalized Fringe Benefits	(10,526)	(10,958)	(9,951)	(8,860)	(10,077)	(11,537)	(11,620)	(12,238)	(12,937)	(13,744)	(14,613)
15	Capitalized Admin. Charges	(6,819)	(8,360)	(9,622)	(9,097)	(10,778)	(15,791)	(12,945)	(13,738)	(13,409)	(14,032)	(15,579)
16	BT[(a)] Supply Chain Initiative	201	0	0	0	0	0	0	0	0	0	0
17	Pensions	23,972	23,614	27,214	43,748	62,336	65,022	51,800	40,308	39,678	22,691	20,383
18	Other Post Employee Benefits	20,119	16,492	11,228	6,726	9,929	6,632	31,028	29,663	28,023	26,045	23,683
19	Taxes	7,122	7,220	7,687	7,823	7,521	8,232	8,437	8,647	8,821	8,997	9,177
20	Environmental Expenses	0	0	0	0	0	0	0	2,045	1,696	927	997
21	Cost Savings/Productivity Improvements	0	0	0	0	0	(2,073)	0	0	0	0	0
22	**Total Other Operating Expenses**	276,450	277,468	295,235	310,570	324,985	334,005	320,494	314,500	318,762	305,060	305,643
23	**Total Operating Expenses**	**510,163**	**532,969**	**599,286**	**562,739**	**471,509**	**510,746**	**510,338**	**511,464**	**522,243**	**515,443**	**523,620**
24	Depreciation	42,561	43,037	44,766	46,474	47,894	48,842	50,596	52,436	54,244	56,019	57,827
25	Cost of Removal	2,484	2,875	2,662	2,897	3,785	4,100	4,100	4,100	4,100	4,100	4,100
26	Less: Clearing Account Depreciation	(4,870)	(4,870)	(5,771)	(5,584)	(6,231)	(6,771)	(7,516)	(7,562)	(7,579)	(7,219)	(7,186)
27	Net Depreciation	40,175	41,042	41,657	43,787	45,448	46,171	47,180	48,974	50,765	52,900	54,741
28	**Total Operating Expense & Depreciation**	**550,338**	**574,011**	**640,943**	**606,526**	**516,957**	**556,917**	**557,518**	**560,438**	**573,008**	**568,343**	**578,361**

(a) Business Transformation ("BT") was a program designed to enable PGW to improve its operational practices, improve service quality and reduce the cost of operations.

8.3.3. Debt Service Requirements

Table 16 presents a summary of the existing and proposed long-term debt service requirements for the five-year projection period. In addition to the Fifteenth Series issuance in 2017, there is a bond issuance expected to occur in 2020.

The assumed all-in interest rates for the Fifteenth Series and anticipated 2020 bonds are as follows:

Issuance	All-in Interest Rate
Fifteenth Series	5.0875%
2020 Bond Issuance	5.0875%

Table 16 Projected Long Term Debt Service Requirements

(Thousands of Dollars)

Line		Fiscal Year Ending August 31,					
No.	Description	2017	2018	2019	2020	2021	2022
		$	$	$	$		
	Revenue Bonds under 1998 Ordinance						
	Senior Debt						
1	A-2 Fifth Series Variable	600	600	600	600	600	600
2	Seventh Series	752	9,205	4,525	151	151	151
3	Eighth Series	12,765	4,513	4,513	4,513	4,513	4,513
4	Ninth Series	3,376	6,821	6,821	6,817	6,819	6,821
5	Tenth Series	7,503	6,757	1,853	5,275	2,059	3,785
6	Thirteenth Series	29,995	28,467	26,941	25,405	28,529	27,042
7	Fourteenth Series	11,877	27,793	32,459	37,531	33,516	34,157
8	Fifteenth Series	0	17,564	17,564	17,566	17,563	17,564
9	New Bond Issue - 2020	0	0	0	0	11,709	11,709
10	Total Senior Debt	66,868	101,720	95,276	97,858	105,459	106,342
11	*Subordinate Debt*						
12	Twelfth Series (Notes)	675	0	0	0	0	0
13	Total Subordinate Debt	675	0	0	0	0	0
14	Total 1998 Ordinance Debt	67,543	101,720	95,276	97,858	105,459	106,342
15	Total Long-Term Debt Service	67,543	101,720	95,276	97,858	105,459	106,342

8.3.4. Payments to City

In accordance with the Management Agreement and the Gas Choice Act, PGW makes an annual base payment of $18.0 million to the City. In fiscal year 2016, PGW paid $18.0 million to the City. For fiscal year 2017 and through the projected period, PGW is projected to pay $18.0 million annually to the City.

8.4. ADEQUACY OF PROJECTED REVENUES TO MEET PROJECTED REVENUE REQUIREMENTS UNDER ORDINANCE REQUIREMENTS

Table 17 presents a pro forma statement developed from the revenue and expense projections for fiscal years 2017 through 2022. This table is presented in conjunction with Table 18, which presents a statement of cash flows, provides an indication of the adequacy of PGW's revenues, and shows the financial feasibility of the proposed Fifteenth Series Bonds.

The operating revenue projections presented earlier in Table 11, Line 35 are summarized in Lines 1 through 3 of Table 17. These projected revenues are based on PGW's currently effective rate schedules. The DSIC revenue is projected to be $32.5 million in fiscal year 2017 and from $30.6 to $31.8 million for the projected period 2018 through 2022, as shown on Line 6 of Table 17. The projected base rate increase in 2018 of $42.0 million is shown on Line 7, as well as an additional base rate increase of $40 million beginning in fiscal year 2021. The pro forma adjustment related to the change from 10-year normal weather to 20-year normal weather as proposed in the Settlement Agreement is shown on line 7a. As previously discussed, the $42.0 million additional revenue (based on 20-year average HDDs) in 2018 and the $40.0 million of revenue enhancements, cost savings, or base rate increases in 2021 are required to achieve the net income levels shown in Table 17. Revenues from Other Sales, primarily unbilled gas adjustments, are shown on Line 4 of Table 17.

Other Operating Revenues presented on Table 17, Line 9 include revenues from sales of energy-related appliance services, field collection charges, and margin from LNG sales. Projected Other Income for the System presented on Table 17, Line 30 includes interest earnings from the different reserve funds.

The projected operation and maintenance expenses shown on Table 17, Lines 11 through 23 are from Table 15. PGW's projected Net Operating Income before interest is summarized on Line 31 of Table 17. Interest expense on existing Bonds and proposed Bonds is presented on Line 32, and the minimum maintenance fee for the Capital Projects Notes is shown on Line 33. Other interest costs including loss from refunded debt and the allowance for funds used during construction ("AFUDC") are shown on Lines 35 and 36. PGW's projected net income is shown on Line 38 of the table and ranges from $25.4 million in fiscal year 2017 to $143.5 million in fiscal year 2022.

Table 17 Projected Statement of Income
(Thousands of Dollars)

Line No.	Description	2017	2018	2019	2020	2021	2022
		Fiscal Year Ending August 31,					
		$	$	$	$	$	$
	Projected Revenues						
1	Non-Heating	25,269	25,182	24,382	23,550	22,758	22,029
2	Gas Transport Service	43,658	42,352	43,893	45,216	46,432	47,595
3	Heating	500,770	507,563	516,096	524,592	533,316	542,854
4	Other Sales	1,673	315	104	83	119	109
5	Total Gas Revenues - Existing Rates	571,370	575,412	584,475	593,441	602,625	612,587
6	DSIC Revenue	32,541	30,579	30,895	31,214	31,518	31,846
7	Net Revenue Increase[(a)]	0	42,000	42,000	42,000	82,000	82,000
7a	Pro Forma Adjustment, 20HDD Average	0	11,824	16,875	16,910	17,251	17,388
8	Total Gas Revenues	603,911	659,815	674,245	683,565	733,394	743,821
9	Other Operating Revenues	21,205	21,022	21,250	21,475	21,701	21,940
10	**Total Operating Revenues**	625,116	680,837	695,495	705,040	755,095	765,761
	Operating Expenses						
11	Natural Gas	176,731	184,960	191,471	197,808	204,518	211,904
11a	Natural Gas Pro Forma Adjustment, 20HDD Avg.	0	4,874	5,483	5,663	5,855	6,063
12	Other Raw Materials	10	10	10	10	10	10
13	Total Fuel	176,741	189,844	196,964	203,481	210,383	217,977
14	Gas Processing	17,666	17,521	17,837	18,216	18,457	18,857
15	Field Services	39,369	40,340	41,299	42,096	42,611	43,456
16	Distribution	41,690	42,562	43,528	44,358	44,925	45,824
17	Collection	4,354	4,420	4,519	4,609	4,651	4,695
18	Customer Services	13,503	13,807	14,126	14,408	14,627	14,919
19	Customer Accounting	8,399	8,487	8,671	8,844	8,977	9,157
20	Bad Debt Expense	30,654	28,826	29,526	30,254	32,530	32,997
21	Other Post Employee Benefits	6,632	31,028	29,663	28,023	26,045	23,683
22	A&G and Other Expenses	171,738	133,503	125,331	127,954	112,237	112,055
23	Total Non-Fuel O&M	334,005	320,494	314,500	318,762	305,060	305,643
24	Depreciation	48,842	50,596	52,436	54,244	56,019	57,827
25	Cost of Removal	4,100	4,100	4,100	4,100	4,100	4,100
26	Less: Clearing Accounts	(6,771)	(7,516)	(7,562)	(7,579)	(7,219)	(7,186)
27	**Net Depreciation**	46,171	47,180	48,974	50,765	52,900	54,741
28	**Total Operating Expenses**	**556,917**	**557,518**	**560,438**	**573,008**	**568,343**	**578,361**
29	**Net Operating Income**	**68,199**	**123,319**	**135,057**	**132,032**	**186,752**	**187,400**
30	Other Income	2,898	3,031	2,684	2,879	3,291	2,890
31	**Net Income Before Interest Charges**	**71,097**	**126,350**	**137,741**	**134,911**	**190,043**	**190,290**
	Interest						
32	Long Term Debt	44,834	49,160	46,807	48,738	50,601	47,766
33	Capital Projects Notes[(b)]	1,946	1,271	1,271	1,271	1,271	1,271
34	Other	(6,005)	(8,164)	(7,523)	(6,790)	(6,055)	(5,275)
35	Loss From Refunded Debt	6,081	5,666	5,300	4,894	4,490	4,072
36	AFUDC	(1,136)	(920)	(985)	(964)	(997)	(1,030)
37	Total Interest	45,720	47,013	44,870	47,149	49,310	46,804
38	**Net Income[(c)]**	**25,377**	**79,337**	**92,871**	**87,762**	**140,733**	**143,486**

(a) Settlement Agreement revenue *(See Section 7.1.5)* , plus revenue enhancement, cost savings and/or base rate increase of $40 million in FY2021.

(b) Includes assumed cost of Capital Projects Notes assuming a minimum annual maintenance fee of $1.27 million.

(c) Net Income is net of all payments to the City excluding the $18 million Payment to City/Distribution of Earnings.

Table 18, Line 1 presents PGW's cash balance as of September 1 for each fiscal year. From this starting point, the net income line from Table 17 is combined with non-cash adjustments (such as depreciation and amortization) expensed on the Income Statement. External sources of funds are summarized on Lines 9 through 13 and include revenue bond proceeds, and drawdowns on the capital improvement fund. The total for all sources of funds is shown on Line 14 of Table 18.

Uses of funds are summarized on Lines 15 through 23 of Table 18. Line 15 represents the principal payments made on long-term debt. CIP requirements are shown on Line 17, and payments to the City are shown on Line 18. Deposits to CIP Fund are shown on Line 19. Repayment of the Notes by the proposed issuance of the Fifteenth Series Bonds is shown on Line 21. Changes in non-cash working capital items, including changes in accounts payable and accounts receivable, are shown on Line 22.

The net increase or decrease in available cash for each fiscal year is shown on Line 24 of Table 18. The ending cash balance for the year, which is the sum of Lines 1 and 24, is shown on Line 25. The ending cash balance for 2017 represents approximately 17 weeks of operation and maintenance expense (excluding the cost of gas) and the ending cash balances for fiscal years 2018 through 2022 represent from approximately 16 to 22 weeks of operation and maintenance expense (excluding the cost of gas). These projected year-end cash balances for fiscal years 2018 through 2022 should be sufficient for PGW to accommodate normal fluctuations in expenditures for utility operations.

A detailed calculation of debt service coverage requirements under the 1998 General Ordinance is presented in Table 19. The results presented in the table indicate that, provided the assumptions made herein are realized, PGW will meet the requirements of the 1998 General Ordinance for all years in the projection period.

Table 18 Projected Statement of Cash Flows
(Thousands of Dollars)

Line No.	Description	Fiscal Year Ending August 31, 2017	2018	2019	2020	2021	2022
		$	$	$	$	$	$
1	**Beginning Cash Balance**	**91,743**	**109,600**	**111,694**	**112,011**	**96,660**	**117,250**
	Sources of Funds						
	Internal Sources						
2	Net Income	25,377	79,337	92,871	87,762	140,733	143,486
3	Depreciation	48,842	50,596	52,436	54,244	56,019	57,827
4	Amortized Costs[a]	(3,793)	(3,596)	(3,322)	(2,998)	(2,669)	(2,309)
5	Earnings on Restricted Funds	(1,663)	(1,324)	(958)	(1,133)	(1,224)	(1,104)
6	Bond Proceeds to Pay Issuance Cost	2,700	0	0	500	0	0
7	Increased/(Decreased) Other Liabilities	29,078	(3,092)	(15,816)	(28,403)	(42,902)	(50,119)
8	Total Internal Sources	100,541	121,921	125,211	109,972	149,957	147,781
	External Sources						
9	Net Revenue Bond Proceeds	248,890	0	0	177,700	0	0
10	Capital Improvement Fund Drawdown	35,000	55,000	58,742	57,000	60,000	60,553
11	Release of Excess Sinking Fund Money	0	0	0	0	0	0
12	Notes	30,000	0	0	0	0	0
13	Total External Sources	313,890	55,000	58,742	234,700	60,000	60,553
14	**Total Sources of Funds**	**414,431**	**176,921**	**183,953**	**344,672**	**209,957**	**208,334**
	Uses of Funds						
15	Debt Reduction paid on all Bonds	34,790	51,834	47,747	52,905	54,084	57,749
16	Debt Reduction Funding	0	0	0	0	0	0
17	CIP Requirements	132,632	109,010	115,628	113,149	117,009	120,996
18	Payment to City/Distribution of Earnings	18,000	18,000	18,000	18,000	18,000	18,000
19	Deposit to CIP Fund[b]	147,890	0	0	177,700	0	0
20	Repayment of Prior Bonds	0	0	0	0	0	0
21	Repayment of Twelfth Series (Notes)	101,000	0	0	0	0	0
22	Change in Non-Cash Working Capital[c]	(37,738)	(4,017)	2,261	(1,731)	274	552
23	**Total Uses of Funds**	**396,574**	**174,827**	**183,636**	**360,023**	**189,367**	**197,297**
24	Increase/(Decrease) in Cash	17,857	2,094	317	(15,351)	20,590	11,037
25	**Ending Cash Balance**	**109,600**	**111,694**	**112,011**	**96,660**	**117,250**	**128,287**

(a) Includes amortization on bond issuance costs and extraordinary losses.
(b) Relects the gross Deposit to CIP Fund, however Capital Improvment Fund Drawdown in Row 10 will be drawn from that fund in FY 2017.
(c) Includes changes in Accounts Payable, Accounts Receivable, and Materials and Supplies.

Table 19 Projected Debt Service Coverage
(Thousands of Dollars)

Line No.	Description	Fiscal Year Ending August 31, 2017	2018	2019	2020	2021	2022
		$	$	$	$	$	
	SOURCES OF FUNDS						
1	Total Gas Revenues	603,911	659,815	674,245	683,565	733,394	743,821
2	Other Operating Revenues	21,205	21,022	21,250	21,475	21,701	21,940
3	Total Operating Revenues	625,116	680,837	695,495	705,040	755,095	765,761
4	Other Income	2,371	2,627	2,711	2,710	3,064	2,816
5	**Total Sources of Funds**	627,487	683,464	698,206	707,750	758,159	768,577
	USES OF FUNDS						
6	Fuel Costs	176,741	189,844	196,964	203,481	210,383	217,977
7	Other Operating Costs	380,176	367,674	363,474	369,527	357,960	360,384
8	Total Operating Expenses	556,917	557,518	560,438	573,008	568,343	578,361
9	Less: Non-Cash Expenses	(92,630)	(78,214)	(68,463)	(69,770)	(55,503)	(55,924)
10	**Total Uses of Funds**	464,287	479,304	491,975	503,238	512,840	522,437
11	**Funds Available for Debt Service**	**163,200**	**204,160**	**206,231**	**204,512**	**245,319**	**246,140**
12	1998 Ordinance Bonds Debt Service	66,868	101,720	95,276	97,858	105,459	106,342
13	1998 Ordinance Subordinate Debt Service - Twelfth Series	675	0	0	0	0	0
14	**Total Debt Service**	**67,543**	**101,720**	**95,276**	**97,858**	**105,459**	**106,342**
15	**Debt Service Coverage**	**2.42**	**2.01**	**2.16**	**2.09**	**2.33**	**2.31**

9. Potential LNG Plant Expansion

PGW is currently studying the feasibility of expanding the liquefaction capacity of its Richmond Plant and/or adding liquefaction to its Passyunk Plant. Given the current state of discussions as described below, this Report does not take into account any costs or the potential revenue which might be generated from such expansion. PGW solicited non-binding expressions of interest from potential LNG buyers as to their interest in purchasing LNG in year-round direct sales, from its Richmond and Passyunk Plants, if LNG was available. Based on the responses received, PGW has identified a potential annual market for up to 5 Bcf of direct LNG sales. If PGW was to address this interest, as well as provide redundancy for PGW's existing facilities and additional capacity to serve PGW customers, PGW would need to increase the liquefaction capacity of its Richmond Plant and/or add liquefaction to its Passyunk Plant. Various scenarios of additional capacity were studied with 21,000 Mcf/day being determined to best meet PGW's needs and the perceived interest. This additional liquefaction capacity would allow PGW to cycle its 4.05 Bcf of storage capacity to meet both the demand of these year round LNG sales as well as the peak day and design winter LNG demand (2.2 Bcf) of its natural gas sales business.

Based on the non-binding expressions of interest and subsequent analysis, PGW issued a Request for Proposals ("RFP") in connection with a proposed PGW-financed expansion at the Richmond Plant with an option for proposer-financed development at the Passyunk Plant.

PGW has engaged in preliminary discussions with two proposers who responded to the RFP and who would purchase LNG. Those discussions contemplate that the financing and construction of any facilities needed to provide the LNG and the financial liability therefor would be the sole obligation of the proposer, with PGW's sole obligation being to operate the facilities. All discussions are preliminary. There is no assurance that the LNG facility, as described above, will be built, or that the proposed structure will not change. However, since at the present time PGW does not anticipate a project for which it would incur debt or, in the normal course of business, incur expenses in excess of the revenue it estimates it will receive from the LNG expansion, the Independent Consultant's Engineering Report does not take into account any potential expansion of the LNG facilities.

Effective July 5, 2017, PGW entered into a memorandum of understanding with a counterparty relating to adding liquefaction capacity at the Passyunk Plant, possibly though a leasing structure. The memorandum of understanding contemplates that, for six months, PGW and the counterparty would exclusively pursue the development of a market for LNG sales from the Passyunk Plant, with the potential to negotiate definitive agreements. The memorandum of understanding does not require either party to ultimately enter into any definitive agreement and does not impose any financial penalty upon the parties.

10. Assumptions and Opinions

In developing the information which Black & Veatch utilized for preparing the projections presented herein, Black & Veatch relied on PGW's financial planning model and PGW's assumptions contained within that model with several exceptions as noted in this Report. The analyses summarized in this Report are based on assumptions that have been provided by or reviewed by PGW and others and relied on currently available information and present circumstances. Black & Veatch has not conducted verification tests of this information. While Black & Veatch believes that these data and the underlying assumptions are reasonable, actual results may materially differ 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. Such factors may include PGW's ability to execute the capital improvement plan as scheduled and within budget, regional climate and weather conditions affecting the demand for gas, PGW's ability to obtain the full amount of increased revenue proposed in the Settlement Agreement in fiscal year 2018, PGW's ability to obtain the revenue enhancements, cost savings, or base rate increases in fiscal year 2021as assumed herein, and adverse legislative, regulatory or legal decisions (including environmental laws and regulations) affecting PGW's ability to operate the System.

10.1. CONSIDERATIONS AND PRINCIPAL ASSUMPTIONS

The following, while not all inclusive, is a list of critical assumptions used in the development of the projections presented herein. Black & Veatch assumes that:

1. The Fifteenth Series Bonds will be issued in one or more series with the proceeds assumed for the purposes of this Report to be used to finance various elements of PGW's ongoing CIP and to refund PGW's outstanding Notes and to potentially refund a portion of PGW's outstanding 1998 General Ordinance Gas Works Revenue Bonds.

2. PGW will continue to operate and maintain the System as described in this Report.

Revenues

1. As set forth by the PUC in its order dated February 22, 2001, the PUC will comply with its statutory obligations pursuant to the Gas Choice Act as it amends the provisions of the Public Utility Code (66 Pa C.S.A. §2212(b)) requiring that the PUC, in determining PGW's revenue requirement and approving overall rates and charges, "follow the same rate-making methodology and requirements that were applicable to [PGW] prior to the assumption of jurisdiction by the [PUC]" and permit PGW to "impose, charge and collect rates or charges as necessary to permit...PGW to comply with its covenants to the holders of any approved bonds." The PUC affirmed this intention in a Policy Statement issued on April 19, 2010.

2. The throughput and revenue figures are based on the assumption of normal weather. To the extent that weather is warmer than normal, the resulting contribution margin will be maintained to the extent that the WNA remains in effect.

3. Projected revenue figures are based on the assumption that PGW will recover, in a timely manner, 100 percent of all gas supply costs (including upstream transportation, upstream storage, and LNG related costs) and 100 percent of the costs (or discounted revenues) attributed to the Customer Responsibility Program, Customer Works Program, Senior Citizen Discount Program, restructuring transition costs, and costs attributable to PUC mandated

programs such as those indicated in Chapters 56 and 59 of the Public Utility Code (less certain avoided costs).

4. If PGW were unable to meet the rate covenant required under the 1998 General Ordinance, PGW would then have to reduce expenditures, develop other sources of Gas Works Revenues, and/or file for and receive timely rate relief.

5. If lost margins resulting from customers' reducing usage due to DSM programs are significant, PGW will file for additional base rate increases.

6. PGW's current DSIC surcharge will allow the recovery of $31 to 32 million in annual revenues to fund annual capital improvements in such amount associated with the LTIIP. The Pennsylvania PUC will continue to provide either rate increases or surcharges to fund these expenditures. If the PUC determines that PGW's cast iron main replacement should be accelerated above current levels, the PUC will also provide rate increases or surcharges to fund the additional expenditures.

7. PGW will realize $42.0 million (based on 20-year normal weather) in base rate increases on a levelized annual basis beginning in fiscal year 2018.

8. PGW will realize $40.0 million in revenue enhancements, cost savings, or base rate increases on a levelized annual basis beginning in fiscal year 2021.

Operating Expenses

1. PGW's annual bad debt expense will range from $28.8 to $33.0 million and PGW's collection factor on billed revenues will be 96 percent during the projected 2018-2022 period.

Debt Service

1. The debt service and interest costs reflect refunding the outstanding Twelfth Series Notes and a new bond issue in 2020. If PGW refunds additional bonds, it is assumed that such additional refunding will result in a reduction in interest costs and annual debt service from the levels reflected in this Report.

Capital Improvement Program (2018 – 2022)

1. The planned capital improvements will be completed at the levels budgeted, for the projects currently planned and within the timeframe projected. Any additional capital improvements required to meet future regulatory requirements will be made to comply with those regulatory requirements.

2. Projected levels of capital improvements that are paid for by internally generated funds are assumed to comply with PGW's internal policies for financing capital improvements with other funding sources.

City of Philadelphia

1. PGW will make an annual payment to the City in fiscal years 2017 through 2022 of $18.0 million.

10.2. OPINIONS

Based on these analyses and the assumptions set forth or referred to in this Report, Black & Veatch offers the following opinions to indicate PGW's conformance with specific requirements which must be met for the issuance of the Fifteenth Series Bonds, as provided in the 1998 General Ordinance:

1. PGW is a competently managed and operated gas distribution utility. PGW and the System are organized, operated, and maintained at a level equal to, or in excess of, regulatory requirements and generally accepted industry practices. The System is in good operating condition.

2. Based upon Black & Veatch's evaluation of financial projections and certain assumptions with respect to the System which Black & Veatch believes to be reasonable, and on the basis of actual and estimated future annual financial operations of the System, the System should yield Gas Works Revenues (which are pledged under the 1998 General Ordinance) over the amortization periods of the Bonds issued under the 1998 General Ordinance (including the Notes) which will be sufficient to: (a) meet all expenses of operation, maintenance, repair and replacement of the System, (b) meet all reserve or special funds required to be established under the 1998 General Ordinance, (c) meet the principal of and interest on all Bonds issued under the 1998 General Ordinance (including the Notes), as the same shall become due and payable, and (d) provide such surplus requirements as are contained in the rate covenant of the 1998 General Ordinance. The Gas Works Revenues forming the basis of this opinion comply with the requirements of the definition of Project Revenues contained in Section 2 of the First Class City Revenue Bond Act.

3. The Gas Works Revenues which are pledged as security for the Bonds (including the Notes) issued under the 1998 General Ordinance are currently, and are projected to be, sufficient to comply with the rate covenant set forth in Section 4.03(b) of the 1998 General Ordinance.

4. The capital improvements proposed during the projection period, September 1, 2017, through August 31, 2022, should, along with continued good operation and maintenance practices, enable PGW to maintain the System in good operating condition. Review of present management practices indicates that good operation and maintenance is likely to continue.

5. Contracted PGW gas supplies plus: (a) spot market purchases, (b) anticipated additional contracted supplies plus supplemental gas capacities, as well as, (c) the pipeline transport capacity to move these supplies to PGW, appear adequate to meet PGW's projected demand on a day of maximum demand (a "design peak day"), in an hour of maximum demand (a "design peak hour"), and during a year of maximum demand (a "design peak year").

APPENDIX C

THE CITY OF PHILADELPHIA GOVERNMENT AND FINANCIAL INFORMATION

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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 sixth largest city in the United States with approximately 1.57 million residents (based on 2016 estimates). The City is also the center of the United States' seventh largest metropolitan statistical area, which is an 11-county area encompassing the City, Camden, NJ, and Wilmington, DE and represents approximately 6.07 million residents (based on 2016 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 La Salle University are certain of the well-known institutions of higher education located in the City. There are also a number of other well-known 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 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, and schools of medicine, dentistry, pharmacy, 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 includes Independence Hall, the Liberty Bell, Carpenters' Hall, the Betsy Ross House, and Elfreth's Alley, the nation's oldest residential street. The Parkway District includes the Philadelphia Museum of Art, the Barnes Foundation, and the Rodin Museum. The Avenue of the Arts, located along a mile-long section of South Broad Street between City Hall and Washington Avenue, includes the Kimmel Center, the Academy of Music, and other performing arts venues. All of the foregoing are key tourist attractions in the City.

For more information on the City's demographic and economic resources and economic development initiatives, see APPENDIX D 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 one 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 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"), the City Representative (the "City Representative"), and the Director of Planning and Development (the "Director of Planning and Development"). Under the City Charter, the Mayor appoints the Managing Director, the Director of Finance, the Director of Commerce, the City Representative, and the Director of Planning and Development. The Mayor, with the advice and consent of a majority of City Council, also appoints the City Solicitor.

The Managing Director, in coordination with the senior officials of City departments and agencies, 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 Director of Planning and Development oversees the Department of Planning and Development, which includes three divisions: (i) the Division of Development Services; (ii) the Division of Planning and Zoning; and (iii) the Division of Housing and Community Development.

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 established pursuant to the City Charter and 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 Kenney'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 Kenney, his Chief of Staff, the Director of Finance, and the City Treasurer.

James F. Kenney, Mayor. On November 3, 2015, James F. Kenney was elected as the City's 99th Mayor and was sworn into office on January 4, 2016. Mayor Kenney is a lifelong resident of the City and a graduate of La Salle University. In 1991, Mayor Kenney was elected to serve as a Democratic City Councilman At-Large and was a member of City Council for 23 years.

Jane Slusser, Chief of Staff. Ms. Slusser was the campaign manager for Mayor Kenney's mayoral campaign. Previously, Ms. Slusser was Organizing Director at Equality Pennsylvania and led

Human Rights Campaign's Americans for Workplace Opportunity statewide campaign in Pennsylvania. In 2008 and 2012, Ms. Slusser worked on President Obama's campaigns in South Philadelphia and Northeastern Pennsylvania. Ms. Slusser is a graduate of Barnard College.

Rob Dubow, Director of Finance. Mr. Dubow has served as Director of Finance since being appointed on January 7, 2008. Prior to that 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.

Rasheia Johnson, City Treasurer. Ms. Johnson was appointed as City Treasurer on January 19, 2016. Ms. Johnson has over 15 years of experience in government and public finance. In public finance, she has worked in the capacities of investment banker, financial advisor, and issuer officer, including positions at Siebert Brandford Shank, Loop Capital Markets, and Public Financial Management, and as Assistant to the Director of Finance for Debt Management for the City.

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 D – "KEY CITY-RELATED SERVICES AND BUSINESSES – Water and Wastewater." For information on the Airport System, see APPENDIX D – "TRANSPORTATION – 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. For more information on PGW, see "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 the Philadelphia Authority for Industrial Development ("PAID"), along with the City's Commerce Department, coordinate the City's efforts to maintain an attractive business environment, attract new businesses to the City, and retain existing businesses. PIDC manages PAID's activities through a management agreement. Of the 30 members of the board of PIDC, eight are City officers or officials (the Mayor, the Managing Director, the Finance Director, the Commerce Director, the Director of Planning and Development, the City Solicitor, and two members of City Council), nine members are designated by the President of the Chamber of Commerce of Greater Philadelphia (the "Chamber of Commerce"), and the remaining 13 members are jointly designated by the Chamber of Commerce and the Commerce Director. 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 "PLB") was created in December 2013 with a mission to return vacant and tax delinquent property to productive reuse. The PLB is an independent agency formed under the authority of City ordinance and Pennsylvania law. The PLB 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. For more information on the PLB, see APPENDIX D – "ECONOMIC DEVELOPMENT STRATEGIES AND IMPLEMENTATION – City and Quasi-City Economic Development Agencies – Philadelphia Land Bank."

Philadelphia Housing Authority. The Philadelphia Housing Authority (the "PHA") 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. PHA 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. PHA is also responsible for administering rental subsidies to landlords who rent their units to housing tenants qualified by PHA for such housing assistance payments. PHA 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 PHA residents. For more information on PHA, see APPENDIX D – "ECONOMIC DEVELOPMENT STRATEGIES AND IMPLEMENTATION – City and Quasi-City Economic Development Agencies – The Philadelphia 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. For more information on SEPTA, see "EXPENDITURES OF THE CITY – City Payments to SEPTA" and APPENDIX D – "TRANSPORTATION – Southeastern Pennsylvania Transportation Authority (SEPTA)."

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. For more information on the Convention Center Authority, see "EXPENDITURES OF THE CITY – City Payments to Convention Center Authority."

The School District. The School District was established, pursuant to the First Class City Home Rule Education Act, by the Educational Supplement to the City Charter as a separate and independent home rule school district 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 Code authorizes the School Reform Commission to delegate duties to the Board of Education if it so chooses. There has been no sitting Board of Education for many years. Two of the five members of the School Reform Commission are appointed by the Mayor and three by the Governor of the Commonwealth (the "Governor"), 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 subjects 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.

The School District is part of the Commonwealth system of public education. In a number of matters, including the incurrence of short-term and long-term debt, the School District is governed 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. For more information on the School District, see "EXPENDITURES OF THE CITY – City Payments to 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, and it continues in existence for a period not exceeding one year after all of its liabilities, including the PICA Bonds (as defined herein), have been fully paid and discharged. The City is the only city of the first class in the Commonwealth. The Governor, 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."

Under the PICA Act and for so long as any PICA Bonds are outstanding, the City is required to submit to PICA: (i) a five-year financial plan on an annual basis; and (ii) quarterly financial reports, each as further described below under "DISCUSSION OF FINANCIAL OPERATIONS – Five-Year Plans of the City" and "– Quarterly Reporting to PICA." Under the PICA Act, at such time when no PICA Bonds are outstanding, the City will no longer be required to prepare such annual financial plans or quarterly reports. See "DEBT OF THE CITY – PICA Bonds" for the current final stated maturities of outstanding PICA Bonds.

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: (i) the construction and operation of parking facilities in the City and at Philadelphia International Airport ("PHL"); and (ii) enforcement of on-street parking regulations. The members of the PPA's board are appointed by the Governor, 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.

<u>Governmental Funds</u>. 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 2016 (the "Fiscal Year 2016 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 2016 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 2018 operating budget ordinance was presented to City Council on March 2, 2017, approved by City Council on June 15, 2017, and signed by the Mayor on June 21, 2017. There is no practical consequence to adopting the budget ordinances after the deadline in the City Charter, but before the end of the Fiscal Year.

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. The Capital Program ordinance for Fiscal Years 2018-2023 (the "Adopted Capital Program") was approved by City Council on June 15, 2017, and signed by the Mayor on June 21, 2017.

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 City's Fiscal Year 2017 Adopted Budget (as defined below), see "– Summary of Operations" and "– Current Financial Information" herein. For information on the City's Fiscal Year 2018 Adopted Budget (as defined below), see "– Current Financial Information – Fiscal Year 2018 Adopted Budget and Twenty-Sixth Five-Year Plan" herein. For information on the City's capital program, see "CITY CAPITAL PROGRAM" herein.

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 annual operating 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 its 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. Historically, the results for General Fund fund balance have not materially changed between the Annual Financial Reports and the CAFRs.

The Annual Financial Report for Fiscal Year 2016 was released on October 26, 2016. The Fiscal Year 2016 CAFR was filed with the Municipal Securities Rulemaking Board ("MSRB") on February 24, 2017. See "CITY FINANCES AND FINANCIAL PROCEDURES – Current City Disclosure Practices."

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. For information on the Modified Twenty-Fifth Five-Year Plan (as defined below), see "– Current Financial Information – Fiscal Year 2017 Adopted Budget and Modified Twenty-Fifth Five-Year Plan." For information on the Twenty-Sixth Five-Year Plan (as defined below), see "– Current Financial Information – Fiscal Year 2018 Adopted Budget and Twenty-Sixth Five-Year Plan."

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. 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 March 31, 2017, which was released on May 15, 2017 (the "Third Quarter QCMR"). The next Quarterly City Manager's Report will be the report for the period ending June 30, 2017, and is expected to be released on or about August 15, 2017.

Summary of Operations

The following table presents the summary of operations for the General Fund for Fiscal Years 2013-2016, budgeted amounts and current estimates for Fiscal Year 2017, and budgeted amounts for Fiscal Year 2018. 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 (except as otherwise indicated) to the most recently revised Fiscal Year 2017 estimate, which was published by the City on June 21, 2017, as part of the Twenty-Sixth Five-Year Plan.

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Table 1
General Fund
Summary of Operations (Legal Basis)
Fiscal Years 2013-2016 (Actual), 2017 (Adopted Budget and Current Estimate), and 2018 (Adopted Budget)
(Amounts in Millions of USD)[1], [2]

	Actual 2013	Actual 2014	Actual 2015	Actual 2016	Adopted Budget 2017	Current Estimate 2017	Adopted Budget 2018
Revenues							
Real Property Taxes[3]	540.5	526.4	536.4	571.6	594.9	583.1	651.5
Wage and Earnings Tax	1,221.5	1,261.6	1,325.8	1,373.0	1,418.1	1,421.0	1,464.6
Net Profits Tax	19.2	16.3	21.2	25.4	24.5	29.1	29.7
Business Income and Receipts Tax	450.9	461.7	438.2	474.2	441.6	435.1	489.9
Sales Tax[4]	257.6	263.1	149.5	169.4	177.5	186.6	198.1
Other Taxes[5]	243.7	266.9	305.9	353.0	369.1	354.1	372.2
Philadelphia Beverage Tax[6]	0.0	0.0	0.0	0.0	46.2	39.7	92.4
Total Taxes	2,733.5	2,795.9	2,777.0	2,966.6	3,071.9	3,048.7	3,298.3
Locally Generated Non-Tax Revenue	266.2	301.8	294.4	291.0	287.3	305.1	307.1
Revenue from Other Governments							
Net PICA Taxes Remitted to the City[7]	314.0	318.7	346.5	383.4	384.7	394.7	419.2
Other Revenue from Other Governments[8]	337.5	347.3	302.8	305.6	312.3	314.2	316.3
Total Revenue from Other Governments	651.5	666.0	649.3	689.1	697.0	709.0	735.5
Receipts from Other City Funds	46.8	42.0	39.0	42.3	75.6	75.4	64.2
Total Revenue	3,698.0	3,805.6	3,759.8	3,989.0	4,131.8	4,138.2	4,405.1
Obligations/Appropriations							
Personal Services	1,362.4	1,450.6	1,508.7	1,562.6	1,565.8	1,590.8	1,628.9
Purchase of Services[9]	757.8	787.6	810.6	822.2	896.9	887.5	935.1
Materials, Supplies and Equipment	85.4	88.8	90.6	92.1	109.1	109.1	105.7
Employee Benefits	1,119.1	1,194.1	1,099.5	1,181.3[12]	1,229.8[13]	1,258.6[14]	1,307.8[15]
Indemnities, Contributions, and Refunds[10]	138.3	208.6	150.7	192.7	189.4	189.4	196.0
City Debt Service[11]	118.9	122.5	132.0	132.1	154.0	154.0	157.3
Payments to Other City Funds	31.5	34.4	39.4	32.8	32.1	32.3	36.0
Advances & Miscellaneous Payments / Labor Reserve	0.0	0.0	0.0	0.0	10.0	0.0	20.0[16]
Advances & Miscellaneous Payments / Federal Funding Reserve	0.0	0.0	0.0	0.0	0.0	0.0	50.9[16]
Total Obligations/Appropriations	3,613.3	3,886.6	3,831.5	4,015.8	4,187.1	4,221.7	4,437.7
Operating Surplus (Deficit) for the Year	84.7	(80.9)	(71.7)	(26.8)	(55.3)	(83.5)	(32.6)
Net Adjustments – Prior Year	25.4	26.1	21.1	23.6	19.5	23.7	19.5
Cumulative Fund Balance Prior Year	146.8	256.9	202.1	151.5	76.1[17]	148.3[17]	88.6
Cumulative Adjusted Year End Fund Balance (Deficit)	256.9	202.1	151.5	148.3	40.3	88.6	75.5

(1) Sources: For Fiscal Years 2013-2016, the City's CAFRs for such Fiscal Years. For Fiscal Year 2017, the Fiscal Year 2017 Adopted Budget and the Twenty-Sixth Five-Year Plan. For Fiscal Year 2018, the Fiscal Year 2018 Adopted Budget and the Twenty-Sixth Five-Year Plan.

(2) Figures may not sum due to rounding.

(3) The amount for Fiscal Year 2013 reflects a 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) The amounts for Fiscal Years 2013-2014 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 Municipal Pension Fund. See "REVENUES OF THE CITY – Sales and Use Tax."

(5) Includes Amusement Tax, Real Property Transfer Tax, Parking Lot Tax, Smokeless Tobacco Tax and miscellaneous taxes.

(6) The Philadelphia Beverage Tax (as defined herein) taxes the distribution of certain beverages at 1.5 cents per ounce and became effective January 1, 2017. See "REVENUES OF THE CITY – Other Taxes" for a discussion of litigation relating to the Philadelphia Beverage Tax.

(7) For a detailed breakdown of "Net PICA Taxes Remitted to the City," see Table 43. Such figures reflect revenues received by the City from 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."

(8) For a detailed breakdown of "Other Revenue from Other Governments," see Table 12. "Other Revenue from Other Governments" includes state gaming revenues.

(9) Includes debt service on lease and service agreement financings.

(10) Includes contributions to the School District. See also Table 21 and the accompanying text herein.

(11) Includes debt service on General Obligation Debt (as defined herein) and tax and revenue anticipation notes; excludes debt service on PICA bonds and lease and service agreement financings.

(12) Includes $9.7 million from City Sales Tax revenues for the Municipal Pension Fund. See "REVENUES OF THE CITY – Sales and Use Tax."

(13) Assumes $13.7 million from City Sales Tax revenues for the Municipal Pension Fund. See "REVENUES OF THE CITY – Sales and Use Tax."

(14) Assumes $18.3 million from City Sales Tax revenues for the Municipal Pension Fund. See "REVENUES OF THE CITY – Sales and Use Tax."

(15) Assumes $24.0 million from City Sales Tax revenues for the Municipal Pension Fund. See "REVENUES OF THE CITY – Sales and Use Tax."

(16) The Labor Reserve is set aside for the potential costs of anticipated new labor agreements with certain of the City's municipal unions. See "EXPENDITURES OF THE CITY – Overview of City Employees." The Federal Funding Reserve is set aside to address certain federal funding that may become unavailable as a result of cuts in the federal budget or the implementation of other federal policies that may affect federal funding for the City.

(17) In the Fiscal Year 2017 Adopted Budget, the City estimated that Fiscal Year 2016 would end with a General Fund balance of $76.1 million. In the Fiscal Year 2016 CAFR, the City reported that Fiscal Year 2016 ended with a General Fund balance of $148.3 million and such number has been included in the current estimate for Fiscal Year 2017.

Current Financial Information

Table 2 below shows General Fund balances for Fiscal Year 2016, budgeted amounts and current estimates for Fiscal Year 2017, and budgeted amounts for Fiscal Year 2018.

Table 2
General Fund – Fund Balance Summary
(Amounts in Thousands of USD)[1]

	Fiscal Year 2016 Actual[2] (June 30, 2016)	Fiscal Year 2017 Adopted Budget[3] (June 20, 2016)	Fiscal Year 2017 Current Estimate[4] (June 21, 2017)	Fiscal Year 2018 Adopted Budget[5] (June 21, 2017)
REVENUES				
Taxes	$2,966,648	$3,071,895[6]	$3,048,694[6]	$3,298,332[6]
Locally Generated Non – Tax Revenues	290,990	287,291	305,120	307,058
Revenue from Other Governments	689,076	697,010	708,950	735,524
Revenues from Other Funds of City	42,253	75,571	75,426	64,191
Total Revenue	**$3,988,967**	**$4,131,767**	**$4,138,190**	**$4,405,105**
OBLIGATIONS / APPROPRIATIONS				
Personal Services	1,562,628	1,565,831	1,590,847	1,628,903
Personal Services – Employee Benefits	1,181,265[7]	1,229,794[7]	1,258,611[7]	1,307,799[7]
Purchase of Services[8]	822,159	896,926	887,459	935,078
Materials, Supplies, and Equipment	92,086	109,128	109,060	105,678
Contributions, Indemnities, and Taxes	192,729	189,395	189,445	196,010
Debt Service[9]	132,089	153,950	153,950	157,322
Payments to Other Funds	32,839	32,064	32,278	36,026
Advances & Miscellaneous Payments	0	10,000	0	70,893[10]
Total Obligations / Appropriations	**$4,015,795**	**$4,187,088**	**$4,221,650**	**$4,437,709**
Operating Surplus (Deficit)	**(26,828)**	**(55,321)**	**(83,460)**	**(32,604)**
OPERATIONS IN RESPECT TO PRIOR FISCAL YEARS				
Net Adjustments – Prior Years	23,612	19,500	23,741	19,500
Operating Surplus/(Deficit) & Prior Year Adj.	(3,216)	(35,821)	(59,719)	(13,104)
Prior Year Fund Balance	151,531	76,103[11]	148,315[11]	88,596
Year End Fund Balance	**$148,315**	**$40,282**	**$88,596**	**$75,492**

(1) Figures may not sum due to rounding.
(2) From the Fiscal Year 2016 CAFR.
(3) From the Fiscal Year 2017 Adopted Budget.
(4) From the Twenty-Sixth Five-Year Plan.
(5) From the Fiscal Year 2018 Adopted Budget.
(6) For Fiscal Year 2017 Adopted Budget, assumes $46.2 million in revenue from the Philadelphia Beverage Tax. For Fiscal Year 2017 Current Estimate, assumes $39.7 million in revenue from such tax. For Fiscal Year 2018 Adopted Budget, assumes $92.4 million in revenue from such tax. The Philadelphia Beverage Tax taxes the distribution of certain beverages at 1.5 cents per ounce and became effective January 1, 2017. See "REVENUES OF THE CITY – Other Taxes" for a discussion of litigation relating to the Philadelphia Beverage Tax.
(7) For Fiscal Year 2016 Actual, includes $9.7 million from City Sales Tax revenues for the Municipal Pension Fund. For Fiscal Year 2017 Adopted Budget, assumes $13.7 million from such tax revenues for the Municipal Pension Fund. For Fiscal Year 2017 Current Estimate, assumes $18.3 million from such tax revenues for the Municipal Pension Fund. For Fiscal Year 2018 Adopted Budget, assumes $24.0 million from such tax revenues for the Municipal Pension Fund. See "REVENUES OF THE CITY – Sales and Use Tax."
(8) Includes debt service on lease and service agreement financings.
(9) Includes debt service on General Obligation Debt (as defined herein) and tax and revenue anticipation notes; excludes debt service on PICA bonds and lease and service agreement financings.
(10) Includes (i) $20.0 million for the Labor Reserve, which is set aside for the potential costs of anticipated new labor agreements with certain of the City's municipal unions (see "EXPENDITURES OF THE CITY – Overview of City Employees"), and (ii) $50.9 million for the Federal Funding Reserve, which is set aside to address certain federal funding that may become unavailable as a result of cuts in the federal budget or the implementation of other federal policies that may affect federal funding for the City.
(11) In the Fiscal Year 2017 Adopted Budget, the City estimated that Fiscal Year 2016 would end with a General Fund balance of $76.103 million. In the Fiscal Year 2016 CAFR, the City reported that Fiscal Year 2016 ended with a General Fund balance of $148.315 million and such number has been included in the current estimate for Fiscal Year 2017.

The following discussion of the Fiscal Year 2017 Adopted Budget, the Modified Twenty-Fifth Five-Year Plan, the current estimate for Fiscal Year 2017, the Fiscal Year 2018 Adopted Budget, and the Twenty-Sixth Five-Year Plan, as applicable, is based, in part, on projections and forward-looking statements related to Fiscal Years 2017 and 2018. No assurance can be given that the applicable budget estimates and forward-looking statements will be realized. The accuracy of such budget estimates and forward-looking statements cannot be verified until after the close of the applicable Fiscal Year and the completion of the related audit.

Fiscal Year 2017 Adopted Budget and Modified Twenty-Fifth Five-Year Plan. On March 3, 2016, Mayor Kenney submitted his proposed Fiscal Year 2017 budget to City Council, along with the proposed five-year plan for Fiscal Years 2017-2021. On June 16, 2016, City Council approved the Fiscal Year 2017 operating budget ordinance, which was signed by the Mayor on June 20, 2016 (the "Fiscal Year 2017 Adopted Budget").

On August 8, 2016, the City submitted to PICA its modified FY 2017-2021 Five Year Financial Plan Per Council Approved Budget (the "Modified Twenty-Fifth Five-Year Plan"). PICA approved the Modified Twenty-Fifth Five-Year Plan on August 31, 2016.

In the Modified Twenty-Fifth Five-Year Plan, the City set forth certain priorities, including: (i) finding efficiencies to stretch taxpayer funds; (ii) increasing collection and revenue efforts; (iii) making investments in children and families; (iv) making investments in the City's workforce; (v) improving public safety; (vi) improving economic opportunities; and (vii) improving the City's neighborhoods.

Labor Agreements. The Modified Twenty-Fifth Five-Year Plan provides $30 million for increased labor obligations in Fiscal Year 2017 and $328.4 million through Fiscal Year 2021. In July 2016, a collective bargaining agreement was reached with American Federation of State, County and Municipal Employees District Council 33 ("AFSCME DC 33"), which provides for pension reforms coupled with salary increases, lump sum payments for health care, and a one-time bonus. This collective bargaining agreement was ratified on August 19, 2016. The costs of such agreement, along with the cost of the wage reopener with International Association of Fire Fighters ("IAFF") Local 22, the City's firefighter union, which resulted in a 3.25% wage increase in Fiscal Year 2017, are included within the $328.4 million set-aside. The $328.4 million included in the Modified Twenty-Fifth Five-Year Plan also provides additional resources for compensation changes for other unionized and non-unionized employees.

Fiscal Year 2017 Current Estimate. The current estimate for Fiscal Year 2017 is derived from information included in the Twenty-Sixth Five-Year Plan. In the Twenty-Sixth Five-Year Plan, the City estimates that it will end Fiscal Year 2017 with a General Fund balance (on the legally enacted basis) of approximately $88.6 million. Although such estimated General Fund balance is higher than projected in the Fiscal Year 2017 Adopted Budget, it is still far below levels recommended by government finance experts.

Fiscal Year 2018 Adopted Budget and Twenty-Sixth Five-Year Plan. On March 2, 2017, Mayor Kenney submitted his proposed Fiscal Year 2018 budget to City Council, along with the proposed five-year plan for Fiscal Years 2018-2022. On June 15, 2017, City Council approved the Fiscal Year 2018 operating budget ordinance, which was signed by the Mayor on June 21, 2017 (the "Fiscal Year 2018 Adopted Budget").

On June 19, 2017, the City submitted to PICA its FY 2018-2022 Five Year Financial Plan Per Council Approved Budget (the "Twenty-Sixth Five-Year Plan"). PICA approved the Twenty-Sixth Five-Year Plan on July 18, 2017. PICA staff, in recommending that PICA approve the Twenty-Sixth Five-Year Plan, noted that the revenue and expenditure projections presented in the Twenty-Sixth Five-Year Plan were [quoting from the PICA Act] "based on reasonable and appropriate assumptions and methods of estimation . . . consistently applied." The PICA staff report concluded that "PICA is confident that the [Twenty-Sixth Five-Year Plan] is based on reasonable assumptions, which will ultimately result in positive fund balances over each of the five years presented" in the Twenty-Sixth Five-Year Plan. The PICA report did, however, note that there are certain risk factors present, which include: (i) that the labor reserve of $200 million may not be sufficient if future labor contracts are on parity with the new AFSCME DC 33 contract; (ii) that the Twenty-Sixth Five-Year Plan's projections do not take into account the impact of a recession or the possibility of an economic downturn; (iii) the sensitivity of the projected investment return assumption on pension fund performance; and (iv) the School Reform Commission approval on June 20, 2017 of a three-year contract for the Philadelphia Federation of Teachers, which will cost approximately $395 million through Fiscal Year 2022, the funding for which is not in the City's nor the School District's current budget projections.

In the Twenty-Sixth Five-Year Plan, the City set forth certain priorities, including: (i) protecting the City's most vulnerable populations; (ii) increasing public safety in all neighborhoods; (iii) ensuring City government runs efficiently and effectively; (iv) improving economic opportunities for City residents; (v) making progress on initiatives funded by the Philadelphia Beverage Tax; and (vi) improving the fiscal health of the City with a focus on program-based budgeting and General Fund balance.

For Fiscal Years 2018-2022, the Twenty-Sixth Five-Year Plan projects that the City will end such Fiscal Years with General Fund balances (on the legally enacted basis) of $75.5 million (Fiscal Year 2018), $85.0 million (Fiscal Year 2019), $60.5 million (Fiscal Year 2020), $75.2 million (Fiscal Year 2021), and $123.1 million (Fiscal Year 2022). The City continues to face uncertainty regarding the pace of economic growth. The estimated General Fund balances in Fiscal Years 2018-2022, which are low, could lead to financial risk.

The Twenty-Sixth Five-Year Plan includes (i) a $200.0 million Labor Reserve for potential costs of anticipated new labor agreements with certain of the City's municipal unions (see "EXPENDITURES OF THE CITY – Overview of City Employees"), and (ii) a $274.6 million Federal Funding Reserve to address certain federal funding that may become unavailable as a result of cuts in the federal budget or the implementation of other federal policies that may affect federal funding for the City.

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."

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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 2016 CAFR and notes therein. The Fiscal Year 2016 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 Escrow Fund accounts for funds held in escrow for various purposes.

- The Employees Health & Welfare Fund accounts for funds deducted from employees' salaries for payment to various organizations.

- The Departmental Custodial Accounts account for funds held in custody by various departments of the City.

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 Airport System.

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 MSRB as soon as practicable after delivery of such report. For bonds issued in calendar year 2015 and after, the annual filing deadline is February 28; for bonds issued prior to calendar year 2015, the annual filing deadline is 240 days after the end of the respective Fiscal Year, being February 25. The Fiscal Year 2016 CAFR was filed with the MSRB on February 24, 2017, through the MSRB's Electronic Municipal Market Access ("EMMA") system.

A wide variety of information concerning the City is available from publications and websites of the City and others, including the City's investor information website at http://www.phila.gov/investor (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.

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 2016 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 basic financial statements of the City in the Fiscal Year 2016 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) personal 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 is permitted to levy any tax that was not specifically pre-empted by the Commonwealth. Acting under the Sterling Act and other Pennsylvania 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; (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), and (v) enacting the City Sales Tax (as defined herein) for City general revenue purposes effective beginning in Fiscal Year 1992.

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 2013-2016, as well as the budgeted amounts and current estimates for Fiscal Year 2017 and the budgeted amounts for Fiscal Year 2018. 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 2013 through 2016 are contained in the Fiscal Year 2016 CAFR.

Table 3 provides a detailed breakdown of the "Total Taxes" line from Table 1 above. Table 3 does not include "Revenues from Other Governments," which consists of "Net PICA Taxes Remitted to the City" and "Other Revenue from Other Governments." "Net PICA Taxes Remitted to the City" is set forth in Table 1 and a detailed breakdown of such revenues is shown in Table 43. "Other Revenue from Other Governments" is set forth in Table 1 and a detailed breakdown of such revenues is shown in Table 12.

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Table 3
General Fund Tax Revenues
Fiscal Years 2013-2016 (Actual), 2017 (Adopted Budget and Current Estimate), and 2018 (Adopted Budget)
(Amounts in Millions of USD) [(1), (2), (3)]

	Actual 2013	Actual 2014	Actual 2015	Actual 2016	Adopted Budget 2017	Current Estimate 2017	Adopted Budget 2018
Real Property Taxes[(4)]							
Current	$504.2	$483.9	$493.1	$521.2	$537.9	$533.5	$602.1
Prior	36.3	42.5	43.4	50.4	57.0	49.6	49.3
Total	$540.5[(4)]	$526.4	$536.4	$571.6	$594.9	$583.1	$651.5
Wage and Earnings Tax[(5)]							
Current	$1,219.5	$1,255.9	$1,318.8	$1,364.6	$1,411.1	$1,413.9	$1,457.4
Prior	2.0	5.7	7.1	8.4	7.0	7.0	7.2
Total	$1,221.5	$1,261.6	$1,325.8	$1,373.0	$1,418.1	$1,421.0	$1,464.6
Business Taxes							
Business Income and Receipts Tax							
Current & Prior	$450.9	$461.7	$438.2	$474.2	$441.6	$435.1	$489.9
Net Profits Tax							
Current	$17.2	$13.2	$14.7	$23.3	$21.4	$26.0	$26.6
Prior	1.9	3.1	6.5	2.1	3.1	3.1	3.1
Subtotal Net Profits Tax	$19.2	$16.3	$21.2	$25.4	$24.5	$29.1	$29.7
Total Business and Net Profits Taxes	$470.1	$478.0	$459.4	$499.6	$466.1	$464.2	$519.6
Other Taxes							
Sales and Use Tax[(6)]	$257.6	$263.1	$149.5	$169.4	$177.5	$186.6	$198.1
Amusement Tax	19.1	20.0	19.0	19.4	20.5	21.2	22.1
Real Property Transfer Tax	148.0	168.1	203.4	237.3	249.6	232.9	242.9
Parking Taxes	73.3	75.1	79.7	92.7	95.1	96.7	103.7
Other Taxes	3.4	3.7	3.8	3.6	3.9	3.4	3.4
Subtotal Other Taxes	$501.3	$530.0	$455.4	$522.4	$546.6	$540.7	$570.3
Philadelphia Beverage Tax[(7)]	0.0	0.0	0.0	0.0	46.2	39.7	92.4
TOTAL TAXES	$2,733.5	$2,795.9	$2,777.0	$2,966.6	$3,071.9	$3,048.7	$3,298.3

(1) Sources: For Fiscal Years 2013-2016, the City's CAFRs for such Fiscal Years. For Fiscal Year 2017, the Fiscal Year 2017 Adopted Budget and the Twenty-Sixth Five-Year Plan. For Fiscal Year 2018, the Fiscal Year 2018 Adopted Budget.

(2) See Table 7 in the Fiscal Year 2016 CAFR for tax rates.

(3) Figures may not sum due to rounding.

(4) The amount for Fiscal Year 2013 reflects a 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) The amounts for Fiscal Years 2013-2014 reflect a 1% increase in the City Sales Tax effective October 8, 2009, which expired June 30, 2014. For Fiscal Years 2015-2018, figures include the remaining 1% City Sales Tax, an additional $15,000,000 for debt service, plus any amounts designated for the Municipal Pension Fund. See "– Sales and Use Tax."

(7) The Philadelphia Beverage Tax taxes the distribution of certain beverages at 1.5 cents per ounce and became effective January 1, 2017. See "– Other Taxes" for a discussion of litigation relating to the Philadelphia Beverage Tax.

Wage, Earnings, and Net Profits Taxes

The largest tax revenue source (comprising more than 45% of all tax revenues in Fiscal Year 2016) 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 2013-2018, the annual wage, earnings and net profits tax receipts in Fiscal Years 2013-2016, the budgeted amount and current estimate of such receipts for Fiscal Year 2017, and the budgeted amount of such receipts for Fiscal Year 2018.

Table 4
Summary of Wage, Earnings and Net Profits Tax Rates and Receipts
Fiscal Years 2013-2016 (Actual), 2017 (Adopted Budget and Current Estimate), and 2018 (Adopted Budget)[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]
2013	3.9280%	3.4985%	$1,617.2 (Actual)
2014	3.9240%	3.4950%	$1,662.3 (Actual)
2015	3.9200%	3.4915%	$1,755.5 (Actual)
2016	3.9102%	3.4828%	$1,842.9 (Actual)
2017	3.9004%	3.4741%	$1,892.6 (Adopted Budget)
			$1,910.1 (Current Estimate)
2018	3.8907%	3.4654%	$1,969.5 (Adopted Budget)

(1) See Table 7 in the Fiscal Year 2016 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 2013-2016, the City's CAFRs for such Fiscal Years. For Fiscal Year 2017, the Fiscal Year 2017 Adopted Budget and the Twenty-Sixth Five-Year Plan. For Fiscal Year 2018, the Fiscal Year 2018 Adopted Budget.

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 $86.3 million in Fiscal Years 2013-2016. For Fiscal Year 2017, the budgeted amount and current estimate of gaming revenues is $86.3 million. For Fiscal Year 2018, the budgeted amount of gaming revenues is $86.3 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 2018 under the Twenty-Sixth Five-Year Plan.

In a 2015 decision by the Supreme Court of the United States (*Comptroller of the Treasury of Maryland v. Wynne*, 135 S. Ct. 1787 (2015)), a state's failure to provide certain credits against its personal income tax was held to have violated the dormant Commerce Clause of the United States Constitution. Such personal income tax was applied to income earned outside of the state of residency, and residents were not given a credit for income taxes paid to the state where such income was earned, resulting, in the circumstances presented, in taxing income earned interstate at a rate higher than income earned intrastate. The City does not provide a credit to resident taxpayers against their respective wage, earnings, and net profits tax liabilities for similar taxes paid to another jurisdiction. Over the last two years, the City has paid approximately $350,000 in the aggregate to resident taxpayers in connection with this matter.

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, 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 2012-2023. 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
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.

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. 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. Alternative programs are also available to reduce Real Estate Tax bills for homeowners, including the Longtime Owner-Occupant Program (LOOP) to provide relief to longtime owners with large increases and the ten-year tax abatement. In addition to the homestead exemption, the City has also instituted several other property tax relief programs for taxpayers.

The Real Estate Tax rates for tax years 2012-2018 are set forth in Table 6 below:

Table 6
Real Estate Tax Rates and Allocations

Tax Year	City	School District	Total
2012	4.1230%	5.3090%	9.4320%
2013	4.4620%	5.3090%	9.7710%
2014[1]	0.6018%	0.7382%	1.3400%
2015[1]	0.6018%	0.7382%	1.3400%
2016[1]	0.6317%	0.7681%	1.3998%
2017[1]	0.6317%	0.7681%	1.3998%
2018[1]	0.6317%	0.7681%	1.3998%

(1) The reduction of the Real Estate Tax rates from tax year 2013 to tax year 2014 and succeeding tax years reflects the City's Actual Value Initiative.

For Fiscal Year 2015, the actual amount of Real Estate Tax revenue for the City was $493.1 million (excluding delinquent collections). For Fiscal Year 2016, the actual amount of Real Estate Tax revenue for the City was $521.2 million (excluding delinquent collections). For Fiscal Year 2017, the current estimate of Real Estate Tax revenue for the City is $533.5 million (excluding delinquent collections). For Fiscal Year 2018, the budgeted amount of Real Estate Tax revenue for the City is $602.1 million (excluding delinquent collections). See Table 3 above. Real Estate Tax bills are sent in December for the following year and payments are due March 31. A discount of 1% is available for taxpayers who pay their Real Estate Taxes on or before the last day of February.

Table 7 shows the assessed values of properties used for tax year 2016 and 2017 Real Estate Taxes (both of which reflect the effect of AVI). Under AVI, the OPA certifies the market values by March 31 of the prior year (that is, for tax year 2016, the OPA certified the market values on March 31, 2015). 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 proposed.

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Table 7
Certified Property Values for Tax Years 2016 and 2017

Tax Year 2016*

Category	Tax Status	Assessed Value	Taxable Assessed Value	Exempt Assessed Value	Number of Parcels
Residential	Fully Taxable	$26,264,061,193	$26,264,061,193	$0	227,060
Residential	Abatement	8,297,419,600	2,773,190,544	5,524,229,056	31,295
Residential	Exemption	32,665,233,808	25,863,433,627	6,801,800,181	214,564
Total		**$67,226,714,601**	**$54,900,685,364**	**$12,326,029,237**	**472,919**
Hotels and Apartments	Fully Taxable	$11,097,523,000	$11,097,523,000	$0	21,864
Hotels and Apartments	Abatement	2,519,189,900	803,639,111	1,715,550,789	1,326
Hotels and Apartments	Exemption	3,118,605,200	913,756,282	2,204,848,918	4,017
Total		**$16,735,318,100**	**$12,814,918,393**	**$3,920,399,707**	**27,207**
Store with Dwelling	Fully Taxable	$2,710,425,800	$2,710,425,800	$0	12,722
Store with Dwelling	Abatement	248,270,600	135,312,637	112,957,963	760
Store with Dwelling	Exemption	273,755,100	215,685,182	58,069,918	1,281
Total		**$3,232,451,500**	**$3,061,423,619**	**$171,027,881**	**14,763**
Commercial	Fully Taxable	$15,061,397,900	$15,061,397,900	$0	10,020
Commercial	Abatement	1,710,678,900	841,467,004	869,211,896	400
Commercial	Exemption	25,401,030,100	529,930,868	24,871,099,232	4,394
Total		**$42,173,106,900**	**$16,432,795,772**	**$25,740,311,128**	**14,814**
Industrial	Fully Taxable	$2,781,476,200	$2,781,476,200	$0	4,129
Industrial	Abatement	127,442,100	50,481,990	76,960,110	60
Industrial	Exemption	553,087,800	27,130,885	525,956,915	238
Total		**$3,462,006,100**	**$2,859,089,075**	**$602,917,025**	**4,427**
Vacant Land	Fully Taxable	$1,447,838,635	$1,447,838,635	$0	33,302
Vacant Land	Abatement	32,505,900	2,054,545	30,451,355	47
Vacant Land	Exemption	1,985,521,500	17,718,350	1,967,803,150	12,057
Total		**$3,465,866,035**	**$1,467,611,530**	**$1,998,254,505**	**45,406**
Grand Total		**$136,295,463,236**	**$91,536,523,753**	**$44,758,939,483**	**579,536**

* Certified Market Value as of 3/31/2015.

Tax Year 2017*

Category	Tax Status	Assessed Value	Taxable Assessed Value	Exempt Assessed Value	Number of Parcels
Residential	Fully Taxable	$27,239,032,724	$27,239,032,724	$0	227,596
Residential	Abatement	5,656,888,300	1,584,639,283	4,072,249,017	13,906
Residential	Exemption	35,439,456,377	27,462,644,199	7,976,812,178	231,790
Total		**$68,335,377,401**	**$56,286,316,206**	**$12,049,061,195**	**473,292**
Hotels and Apartments	Fully Taxable	$11,309,938,300	$11,309,938,300	$0	21,819
Hotels and Apartments	Abatement	2,732,361,800	781,802,004	1,950,559,796	768
Hotels and Apartments	Exemption	3,144,407,300	1,009,817,435	2,134,589,865	4,629
Total		**$17,186,707,400**	**$13,101,557,739**	**$4,085,149,661**	**27,216**
Store with Dwelling	Fully Taxable	$2,654,179,000	$2,654,179,000	$0	12,611
Store with Dwelling	Abatement	113,049,600	49,070,436	63,979,164	211
Store with Dwelling	Exemption	410,214,200	295,454,160	114,760,040	1,830
Total		**$3,177,442,800**	**$2,998,703,596**	**$178,739,204**	**14,652**
Commercial	Fully Taxable	$13,987,005,400	$13,987,005,400	$0	9,873
Commercial	Abatement	2,474,106,400	787,638,368	1,686,468,032	426
Commercial	Exemption	24,712,736,300	430,585,920	24,282,150,380	4,358
Total		**$41,173,848,100**	**$15,205,229,688**	**$25,968,618,412**	**14,657**
Industrial	Fully Taxable	$2,654,419,300	$2,654,419,300	$0	3,960
Industrial	Abatement	292,220,700	49,509,849	242,710,851	107
Industrial	Exemption	499,667,800	28,545,270	471,122,530	291
Total		**$3,446,307,800**	**$2,732,474,419**	**$713,833,381**	**4,358**
Vacant Land	Fully Taxable	$1,397,808,735	$1,397,808,735	$0	33,804
Vacant Land	Abatement	42,839,500	117,908	42,721,592	35
Vacant Land	Exemption	1,921,166,000	18,996,099	1,902,169,901	11,898
Total		**$3,361,814,235**	**$1,416,922,742**	**$1,944,891,493**	**45,737**
Grand Total		**$136,681,497,736****	**$91,741,204,390**	**$44,940,293,346**	**579,912**

* Certified Market Value as of 3/31/2016
** Based on revised market values for tax year 2017, as of 4/11/2017, the revised assessed value is $138,276,358,121 (based on 581,919 parcels).

As part of the transition to the new assessment system, OPA set up a new process called a first level review, where a taxpayer could request an administrative review of its assessment notice prior to launching a formal appeal with the BRT. The BRT has the authority, following a formal appeal, to either 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.

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 permits such adjustment for the reassessment year and the two years thereafter. 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.

For tax year 2017, OPA conducted reassessments on certain residential properties and on vacant land parcels not currently being used for commercial purposes. For tax year 2018, OPA conducted reassessments on commercial, industrial, and institutionally-owned parcels. OPA plans to conduct a comprehensive reassessment of all properties in the City for tax year 2019 and each year thereafter.

Since 2010, the City has pursued a number of initiatives to improve the collection of Real Estate Taxes, including (i) prompt correspondence with taxpayers with overdue Real Estate Taxes, (ii) using outside collection firms to collect overdue Real Estate Taxes, (iii) sequestration of delinquent properties occupied by commercial tenants, and (iv) tax lien sales. The City's current estimated Real Estate Tax collection rate for tax year 2017 is 93.9%.

See Table 8 below for data with respect to Real Estate Taxes levied from 2012 to 2016 and collected by the City from January 1, 2012 to June 30, 2016. See Table 9 for the assessed property values of the City's principal taxable assessed parcels in 2016. See Table 10 for the 2016 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.

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Table 8
City of Philadelphia
Real Property Taxes Levied and Collected
For the Calendar Years 2012-2016
(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[(6)]	Percentage Collected in the Calendar Year of Levy	Collections in Subsequent Years[(5), (6)]	Total Collections to Date: All Years[(6)]	Percentage Collected to Date: All Years[(6)]
2012	$508.6	$491.1	$459.2	93.5%	$22.7	$481.9	98.1%
2013	$554.0	$537.7	$505.6	94.0%	$22.8	$528.4	98.3%
2014	$553.2	$515.4	$482.1	93.5%	$21.2	$503.3	97.7%
2015	$547.4	$519.1	$489.1	94.2%	$10.9	$500.0	96.3%
2016	$569.9	$552.7	$502.6	90.9%	N/A	$502.6	90.9%

(1) Source: Fiscal Year 2016 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.
(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) For calendar year 2016, the data shown reflects collections through June 30, 2016. For earlier calendar years, the data shown reflects collections through December 31 of the respective year.

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Table 9
Principal Taxable Assessed Parcels – 2016
(Amounts in Millions of USD) (1)

Taxpayer	2016 Assessment(2)	2016 Percentage of Total Assessments
HUB Properties Trust	$265.7	0.29%
Nine Penn Center Associates	232.6	0.25
Phila Liberty Place ELP	207.7	0.23
Philadelphia Market Street	203.7	0.22
Tenet Health Systems Hahnemann	192.1	0.21
Commerce Square Partners	178.2	0.19
Maguire / Thomas	170.1	0.19
NNN 1818 Market Street 37	170.0	0.19
Franklin Mills Associates	163.2	0.18
Brandywine Cira	160.7(3)	0.18
Total	$1,944.0	2.12%
Total Taxable Assessments(4)	$91,536.5	

Source: City of Philadelphia, Office of Property Assessment.

(1) Figures may not sum due to rounding.
(2) 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.
(3) Brandywine Cira was made fully taxable in error for tax year 2016, which was corrected after March 31, 2015. Following such correction, Brandywine Cira was assessed at $159.4 million.
(4) Total 2016 Taxable Assessment as of March 31, 2015.

Table 10
Ten Largest Certified Market and Assessment Values of Tax-Abated Properties
Certified Values for 2016
(Amounts in Millions of USD)

Location	2016 Certified Market Value	Total Assessment	Total Taxable Assessment	Total Exempt Assessment	Exempt Through Tax Year
1701 John F Kennedy Blvd.	$212.5	$212.5	$9.1	$203.4	2017
1001 N Delaware Ave.	$150.9	$150.9	$39.3	$111.6	2020
1500-30 Spring Garden St.	$138.7	$138.7	$78.4	$60.3	2020
2116 Chestnut St.	$72.5	$72.5	$1.4	$71.1	2023
2323 Race St.	$72.4	$72.4	$2.8	$69.5	2016
2026-58 Market St.	$65.0	$65.0	$8.4	$56.6	2023
1601 N 15th St.	$64.2	$64.2	$0.5	$63.7	2017
233-43 S Broad St.	$62.4	$62.4	$56.1	$6.3	2023
3401 Chestnut St.	$61.2	$64.6	$0.0	$61.2	2017
907-37 Market St.	$61.0	$61.0	$41.4	$19.6	2016

Source: City of Philadelphia, Office of Property Assessment.

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% is 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 $57.5 million in bonds to fund a portion of the School District's operating deficit for Fiscal Year 2015 and refund certain outstanding bonds that funded a portion of the Fiscal Year 2014 operating deficit. The debt service on such bonds is approximately $15 million annually through Fiscal Year 2018 and the City expects to continue paying 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 deficits for Fiscal Years 2014-2015, 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 21.

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The following table sets forth the City Sales Taxes collected in Fiscal Years 2013-2016, the budgeted amount and current estimate for Fiscal Year 2017, and the budgeted amount for Fiscal Year 2018.

Table 11
Summary of City Sales Tax Collections
Fiscal Years 2013-2016 (Actual), 2017 (Adopted Budget and Current Estimate), and 2018 (Adopted Budget)
(Amounts in Millions of USD)[1]

Fiscal Year	City Sales Tax Collections
2013 (Actual)	$257.6
2014 (Actual)	$263.1
2015 (Actual)	$149.5[2]
2016 (Actual)	$169.4[2]
2017 (Adopted Budget)	$177.5[2]
2017 (Current Estimate)	$186.6[2]
2018 (Adopted Budget)	$198.1[2]

(1) Sources: For Fiscal Years 2013-2016, the City's CAFRs for such Fiscal Years. For Fiscal Year 2017, the Fiscal Year 2017 Adopted Budget and the Twenty-Sixth Five-Year Plan. For Fiscal Year 2018, the Fiscal Year 2018 Adopted Budget.
(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.

Other Taxes

The City also collects real property transfer taxes, parking taxes, an amusement tax, a valet parking tax, an outdoor advertising tax, a smokeless tobacco tax, the Philadelphia Beverage Tax (see below), and other miscellaneous taxes.

In June 2016, City Council passed the Philadelphia Beverage Tax (Chapter 19-4100 of the Philadelphia Code) (the "Philadelphia Beverage Tax"). On October 31, 2016, the Department of Revenue adopted regulations for the Philadelphia Beverage Tax. The Philadelphia Beverage Tax taxes the distribution of certain beverages at 1.5 cents per ounce and became effective January 1, 2017.

The Philadelphia Beverage Tax is providing funding for pre-kindergarten, community schools, and improvements to parks, recreational centers, and libraries. For Fiscal Years 2017-2022, the City projects it will collect approximately (i) $39.7 million (Fiscal Year 2017), (ii) $92.4 million (Fiscal Year 2018), (iii) $92.5 million (Fiscal Year 2019), (iv) $92.6 million (Fiscal Year 2020), (v) $92.1 million (Fiscal Year 2021), and (vi) $91.7 million (Fiscal Year 2022) in revenues from the Philadelphia Beverage Tax in such Fiscal Years.

On September 14, 2016, a lawsuit challenging the Philadelphia Beverage Tax was filed by the American Beverage Association and other co-plaintiffs in the Philadelphia Court of Common Pleas – Trial Division – Civil. On December 19, 2016, the Court of Common Pleas dismissed the complaint in its entirety. The plaintiffs appealed this ruling. On June 14, 2017, the Commonwealth Court of Pennsylvania, which is one of the Commonwealth's intermediate appellate courts, upheld the decision of the Court of Common Pleas. The plaintiffs have petitioned the Pennsylvania Supreme Court to review this decision. The decision to grant or deny any such petition is at the discretion of the Pennsylvania Supreme Court. Such petition is pending. For more general information on judgments and settlements on claims against the City, see "LITIGATION."

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 and tax lien sales, 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 2013-2016, the budgeted amounts and current estimate for Fiscal Year 2017, the budgeted amounts for Fiscal Year 2018, 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 2013-2016 (Actual), 2017 (Adopted Budget and Current Estimate), and 2018 (Adopted Budget)
(Dollar Amounts in Millions of USD)[(1), (2), (3)]

Fiscal Year	Commonwealth[(4)]	Federal Government	Other Governments[(5)]	Total	Percentage of General Fund Revenues
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 (Actual)	$212.7	$30.1	$60.0	$302.8	8.1%
2016 (Actual)	$223.7	$29.7	$52.3	$305.6	7.7%
2017 (Adopted Budget)	$220.8	$31.4	$60.1	$312.3	7.6%
2017 (Current Estimate)	$219.4	$38.1	$56.7	$314.2	7.6%
2018 (Adopted Budget)	$221.4	$35.6	$59.3	$316.3	7.2%

(1) Sources: For Fiscal Years 2013-2016, the City's CAFRs for such Fiscal Years. For Fiscal Year 2017, the Fiscal Year 2017 Adopted Budget and the Twenty-Sixth Five-Year Plan. For Fiscal Year 2018, the Twenty-Sixth Five-Year Plan.
(2) Figures may not sum due to rounding.
(3) Does not include the PICA Tax.
(4) Such revenues are for health, welfare, court, and various other specified purposes.
(5) Such revenues primarily consist of payments from PGW, parking fines and fees from PPA, and other authorized adjustments.

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 2013-2016, the budgeted amount and current estimate for Fiscal Year 2017, and the budgeted amounts for Fiscal Year 2018.

Table 13
Transfers from Water Fund to General Fund (Excess Interest on Sinking Fund Reserve)
Fiscal Years 2013-2016 (Actual), 2017 (Adopted Budget and Current Estimate), and 2018 (Adopted Budget)[(1)]

Fiscal Year	Amount Transferred
2013 (Actual)	$560,156
2014 (Actual)	$400,364
2015 (Actual)	$745,585
2016 (Actual)	$1,555,702
2017 (Adopted Budget and Current Estimate)	$900,000[(2)]
2018 (Adopted Budget)	$1,000,000[(2)]

(1) Sources: For Fiscal Years 2013-2016, the City's Supplemental Report of Revenues & Obligations for such Fiscal Years. For Fiscal Year 2017, the Fiscal Year 2017 Adopted Budget and the Twenty-Sixth Five-Year Plan. For Fiscal Year 2018, the Fiscal Year 2018 Adopted Budget.
(2) For Fiscal Years 2017 and 2018, the Water Department has budgeted $1,200,000 and $1,500,000, respectively, as its transfer from the Water Fund to the General Fund. Historically, the Water Department's budgeted amount is greater than the figure included in the City's operating 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. PGW is required to make an annual payment of $18 million to the General Fund. Both the Fiscal Year 2017 Adopted Budget and the Fiscal Year 2018 Adopted Budget include such $18 million annual payment to the General Fund from PGW for such Fiscal Years. In certain past Fiscal Years, the City granted back to PGW such annual payments. For more information on PGW, see "THE GOVERNMENT OF THE CITY OF PHILADELPHIA – Government Services."

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.

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.

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, the effect of which commenced in Fiscal Year 2015, the threshold, which was previously set at $25 million, was 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 for on-street parking for Fiscal Years 2013-2016, the budgeted amount and current estimate for Fiscal Year 2017, and the budgeted amount for Fiscal Year 2018.

Table 14
PPA On-Street Parking Payments to the City
Fiscal Years 2013-2016 (Actual), 2017 (Adopted Budget and Current Estimate), and 2018 (Adopted Budget)[(1)]

Fiscal Year	Payments to the City
2013 (Actual)	$36.5
2014 (Actual)	$37.7
2015 (Actual)	$38.1
2016 (Actual)	$33.7
2017 (Adopted Budget)	$39.6
2017 (Current Estimate)	$38.1
2018 (Adopted Budget)	$38.8

(1) Sources: For Fiscal Years 2013-2016, the City's Supplemental Report of Revenues & Obligations for such Fiscal Years. For Fiscal Years 2017-2018, the Twenty-Sixth Five-Year Plan and the Fiscal Year 2018 Adopted Budget.

Proposed Tax Rate Changes

The Twenty-Sixth Five-Year Plan includes 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. The following table details rates under the Twenty-Sixth Five-Year Plan.

Table 15
Changes in Wage and Earnings Tax Rates[(1)]

	Twenty-Sixth Five-Year Plan	
Fiscal Year	Resident Wage and Earnings Tax Rates[(2)]	Non-Resident Wage and Earnings Tax Rates
2017	3.9004%	3.4741%
2018	3.8907%	3.4654%
2019	3.8420%	3.4221%
2020	3.7844%	3.3707%
2021	3.7276%	3.3202%
2022	3.6997%	3.2953%

(1) Source: The Twenty-Sixth Five-Year Plan.
(2) Includes PICA Tax. See "DEBT OF THE CITY – PICA Bonds" for a description of the PICA Tax.

Under the Twenty-Sixth Five-Year Plan, receipts from the Wage and Earnings Tax are estimated to grow at a rate of 3.68% in Fiscal Year 2017, 3.41% in Fiscal Year 2018, 3.78% in Fiscal Year 2019, 3.62% in Fiscal Year 2020, 3.56% in Fiscal Year 2021, and 3.59% in Fiscal Year 2022.

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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 June 30, 2016, the City employed 27,042 full-time employees, representing approximately 3.89% of non-farm public and private employment in the City (approximately 694,900 employees, according to non-seasonally adjusted data from the Bureau of Labor Statistics). Of these full-time public employees, the salaries of 21,427 were paid from the General Fund. Additional sources of funding for full-time public employees include the Grants Revenue 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(1), (2)

	June 30, 2012	June 30, 2013	June 30, 2014	June 30, 2015	June 30, 2016
General Fund					
Police	7,225	7,193	7,095	7,061	6,942
Fire	2,072	2,125	2,053	2,150	2,316
Courts	1,957	1,909	1,866	1,842	1,839
Prisons	2,144	2,248	2,268	2,286	2,289
Streets	1,682	1,690	1,684	1,664	1,676
Public Health	669	673	659	653	653
Human Services(3)	804	377	382	395	449
All Other	4,622	4,710	4,984	5,115	5,263
Total – General Fund	21,175	20,925	20,991	21,166	21,427
Other Funds	4,540	5,547	5,657	5,626	5,615
Total – All Funds	25,715	26,472	26,648	26,792	27,042

(1) Source: Table P-1 in the City's Quarterly City Manager's Reports.
(2) Table 16 does not include seasonal or temporary employees.
(3) Fiscal Year 2011 was the last year that the full amount of revenue for DHS was deposited into the General Fund. The decrease in filled, full-time positions Fiscal Year 2012 to Fiscal Year 2013 is largely due to the transfer of the majority of DHS revenue and obligations to the Grants Revenue Fund.

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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 June 30, 2016, the City's 22,789 unionized employees, representing approximately 84.3% of the City's employees, were represented by the City's four municipal unions: (i) Fraternal Order of Police ("FOP") Lodge No. 5; (ii) IAFF Local 22; (iii) AFSCME DC 33; and (iv) American Federation of State, County and Municipal Employees District Council 47 ("AFSCME DC 47").

In July 2016, a collective bargaining agreement was reached with AFSCME DC 33, which provides for pension reforms coupled with salary increases, lump sum payments for health care, and a one-time bonus. This collective bargaining agreement was ratified on August 19, 2016. The costs of such agreement, along with the cost of the wage reopener with IAFF Local 22, are included in the Modified Twenty-Fifth Five-Year Plan. Such plan also provides additional resources for compensation changes for other unionized and non-unionized employees.

On June 30, 2017, the labor agreements for FOP Lodge No. 5, IAFF Local 22, and AFSCME DC 47 are set to expire. The Twenty-Sixth Five-Year Plan includes a $200 million reserve for the potential costs of anticipated new labor agreements for such unions.

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 2013 through 2018 are shown in the following table.

Table 17
General Fund Employee Benefit Expenditures
Fiscal Years 2013-2016 (Actual) and 2017-2018 (Projected)
(Amounts in Millions of USD)[1]

	2013	2014	2015	2016	2017	2018
Pension Contribution[2]	$618.9[4]	$646.4[4]	$558.3	$622.1[8]	$651.0[9]	$680.2[10]
Health[3]						
Payments under City-administered plan	76.4	75.6	75.5	72.5	81.9	96.3
Payments under union-administered plans[5]	286.8	333.8	319.1	339.0	366.2	370.1
Total Health	363.2	409.4	394.6	411.5	448.1	466.4
Federal Insurance Contributions Act (FICA) Taxes[6]	64.7	67.5	71.2	71.7	75.4	76.1
Other[7]	72.3	70.8	75.6	76.0	84.1	85.1
Total	$1,119.1	$1,194.1	$1,099.5	$1,181.3	$1,258.6	$1,307.8

(1) Source: From the City's five-year financial plans, except for "Payments under City-administered plan," which was provided by the City, Department of Human Resources.
(2) Includes debt service on Pension Bonds (as defined herein) and the Commonwealth contributions to the Municipal Pension Fund. See Tables 29 and 30.
(3) This breakdown of "Health" between "Payments under City-administered plan" and "Payments under union-administered plans" is an estimate of actual expenses. The City records the actual health expenses in one line item, which corresponds to the figures in "Total Health."
(4) Includes repayment of deferred contributions. See Table 29.
(5) AFSCME DC 33 receives a per member per month amount of $1,194 from the City.
(6) Includes payments of social security and Medicare taxes.
(7) Includes payments for unemployment compensation, employee disability, group life, group legal, tool allowance, and flex cash payments.
(8) Includes $9.7 million from City Sales Tax revenues for the Municipal Pension Fund. See "REVENUES OF THE CITY – Sales and Use Tax."
(9) Assumes $18.3 million from City Sales Tax revenues for the Municipal Pension Fund. See "REVENUES OF THE CITY – Sales and Use Tax."
(10) Assumes $24.0 million from City Sales Tax revenues for the Municipal Pension Fund. See "REVENUES OF THE CITY – Sales and Use Tax."

Figures may not sum due to rounding.

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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's healthcare plan, 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. To provide health care coverage, the City pays a negotiated monthly premium for employees covered by the union contract for AFSCME DC 33 and is self-insured for all other eligible employees. Aside from AFSCME DC 33, the City is responsible for the actual health care cost that is invoiced to the City's unions by their respective vendors. The actual cost can be a combination of self-insured claim expenses, premiums, ancillary services and administrative expenses. 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. As reflected in Table 17, the health payments under the City-administered plan have been relatively constant; the health payments for the union-sponsored plans have increased substantially since Fiscal Year 2013. 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.

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Overview of Current Labor Situation

Table 18 summarizes the current status of the interest arbitration awards that have been issued for, and contract settlements reached with, the City's major labor organizations, as well as changes that have been made for exempt and non-represented employees. It also provides a brief summary of pension reforms that have occurred since 2009.

Table 18
Status of Arbitration Awards and Labor Contract Settlements

Organization	Authorized Number of Full-Time Citywide Employees Represented[1]	Status of Arbitration Award or Contract Settlement	Wage Increases	Pension Reforms[2]
FOP Lodge No. 5 (Police Department)	6,375	Three-year contract effective July 1, 2014 through June 30, 2017 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.	• Employees in Plan 87 hired before 1/1/10 pay 5% of salary • Employees hired on or after 1/1/10 elect to either enter Plan 87 and pay 6% of salary or enter Plan 10

FOP Lodge No. 5 (Sheriff's Office and Register of Wills)	372	Three-year contract effective July 1, 2014 through June 30, 2017 awarded by arbitration panel on April 16, 2015	• 2.5% increase for Fiscal Year 2015.
			• 3.0% increase for Fiscal Year 2016.
			• 3.25% increase for Fiscal Year 2017.
			• Register of Wills employees receive same wage package as AFSCME DC 33.
				• Sheriff's Office:
				  • Employees in Plan 87 hired before 1/1/12 pay 30% of normal cost
				  • Employees hired on or after 1/1/12 elect to enter Plan 87 and pay 50% of normal cost or enter Plan 10
				• Register of Wills:
				  • Employees in Plan 87 hired before 1/1/12 pay 30% of normal cost
				  • Employees hired on or after 1/1/12 participate in Plan 10

IAFF Local 22	2,407	Four-year contract effective July 1, 2013 through June 30, 2017 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. • 3.25 % pay increase for Fiscal Year 2017.	• Employees in Plan 87 hired before 7/2/12 pay 5% of salary • Employees hired on or after 7/2/12 elect to enter Plan 87 and pay 6% of salary or enter Plan 10
AFSCME DC 33	7,372	Four-year contract term effective July 1, 2016 through June 30, 2020 (ratified on August 19, 2016)	• 3.0% pay increase effective July 1, 2016. • 3.0% pay increase for Fiscal Year 2018 • 2.5% pay increase for Fiscal Year 2019. • 3.0% pay increase for Fiscal Year 2020.	• Tiered contribution system for current employees under which employees who have higher salaries pay a higher percent of their salaries as contributions to the pension fund • Mandatory stacked hybrid plan for new hires under which employees receive a defined benefit pension for their first $50,000 of earnings and a defined contribution pension for earnings above $50,000 • Plan 10 closed to new enrollment for members of DC33 but remains unchanged for other employee groups • Once fully implemented, such employees in Plan 10 are expected to receive a letter indicating that they have 90 days to make an irrevocable election to opt into the stacked-hybrid • DROP (as defined below) interest rate decreases from 4.5% to the rate on the one year treasury effective January 1 of each year (currently 0.65%) for participants not currently enrolled or eligible to enroll

(1) From data provided by the Mayor's Office of Labor Relations as of June 30, 2016.
(2) "Plan 87" and "Plan 10" referenced in this column are described in Table 19. Plan 10 is mandatory for newly-hired employees of the Register of Wills and was mandatory for employees covered by the Correctional Officers arbitration award who are now covered by the same pension provisions as other employees of AFSCME DC 33.

Organization	Authorized Number of Full-Time Citywide Employees Represented[1]	Status of Arbitration Award or Contract Settlement	Wage Increases	Pension Reforms[2]
AFSCME DC 33, Local 159 Correctional Officers	2,220	Three-year contract effective July 1, 2014 through June 30, 2017 awarded by arbitration panel on March 23, 2015	• 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.	• Tiered contribution system for current employees under which employees who have higher salaries pay a higher percent of their salaries as contributions to the pension fund • Mandatory stacked hybrid plan for new hires under which employees receive a defined benefit pension for their first $50,000 of earnings and a defined contribution pension for earnings above $50,000 • Plan 10 closed to new enrollment for members of DC33 but remains unchanged for other employee groups • Once fully implemented, such employees in Plan 10 are expected to receive a letter indicating that they have 90 days to make an irrevocable election to opt into the stacked-hybrid • DROP interest rate decreases from 4.5% to the rate on the one year treasury effective January 1 of each year (currently 0.65%) for participants not currently enrolled or eligible to enroll
AFSCME DC 47	3,566	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.	• Employees in Plan 87 hired before 3/5/14 pay 30% of normal cost plus an additional 0.5% of pay in 2015 and an additional 0.5% of pay in 2016 (for a total of an additional 1% of pay by 1/1/16) • Employees hired on or after 3/5/14 may elect to enter Plan 87 and pay an additional 1% of pay over what others in Plan 87 pay or enter Plan 10 • DROP interest rate decreases from 4.5% to the rate on the one year treasury effective January 1 of each year (currently 0.65%) for participants not currently enrolled or eligible to enroll
AFSCME DC 47 Local 810 Court Employees	477	Agreement ratified August 13, 2014 on economic terms for July 1, 2014 through June 30, 2016; a one-year agreement for July 1, 2016-June 30, 2017 was also ratified in Fiscal Year 2017	• 2.5% pay increase for Fiscal Year 2015. • 2.5% pay increase for Fiscal Year 2016. • 3% pay increase for Fiscal Year 2017.	• Employees in Plan 87 hired before 3/5/14 pay 30% of normal cost plus an additional 0.5% of pay in 2015 and an additional 0.5% of pay in 2016 (for a total of an additional 1% of pay by 1/1/16) • Employees hired on or after 11/14/14 may elect to enter Plan 87 and pay an additional 1% of pay over what others in Plan 87 pay or enter Plan 10 • DROP interest rate decreases from 4.5% to the rate on the one year treasury effective January 1 of each year (currently 0.65%) for participants not currently enrolled or eligible to enroll
Exempt and Non-Represented Employees	3,752	Changes for exempt and non-represented employees	• 2.5% pay increase effective October 1, 2012. • 3.5% exempt pay increase effective September 1, 2014. • 3.5% non-represented pay increase effective April 1, 2014. • 2.5% non-represented pay increase for Fiscal Year 2016.	• Employees in Plan 87 hired before 5/14/14 for non-represented civil service and before 11/14/14 for non-represented non-civil service pay 30% of normal cost plus an additional 0.5% of pay in 2015 and an additional 0.5% of pay in 2016 (for a total of an additional 1% of pay by 1/1/16) • Employees hired on or after dates above may elect to enter Plan 87 and pay an additional 1% of pay over what others in Plan 87 pay or enter Plan 10 • DROP interest rate decreases from 4.5% to the rate on the one year treasury effective January 1 of each year (currently 0.65%) for participants not currently enrolled or eligible to enroll

(1) From data provided by the Mayor's Office of Labor Relations as of June 30, 2016.

(2) "Plan 87" and "Plan 10" referenced in this column are described in Table 19. Plan 10 is mandatory for newly-hired employees of the Register of Wills and was mandatory for employees covered by the Correctional Officers arbitration award who are now covered by the same pension provisions as other employees of AFSCME DC 33.

Certain features of the 1987 Plan ("Plan 87") and the 2010 Plan ("Plan 10") are summarized below. Plan 87 is solely a defined benefit plan. Plan 10 is a "hybrid" plan that includes both a defined benefit and a defined contribution component. A more comprehensive summary of each plan is included as Appendix D of the July 1, 2016 Valuation (as defined herein). See "PENSION SYSTEM" below.

Table 19
Summary of Key Aspects of Plan 87 and Plan 10

Plan 87	Normal Retirement Eligibility	Average Final Compensation ("AFC")	Defined Benefit – Retirement Benefits Multiplier
Municipal (Plan Y)	Age 60 and 10 years of credited service(1)	Average of three highest calendar or anniversary years	• (2.2% x AFC x years of service up to 10 years) plus (2.0% x AFC x numbers of years in excess of 10 years), subject to a maximum of 100% of AFC
Police and Fire	Age 50 and 10 years of credited service(1)	Average of two highest calendar or anniversary years	• (2.2% x AFC x years of service up to 20 years) plus (2.0% x AFC x numbers of years in excess of 20 years), subject to a maximum of 100% of AFC
Elected Official (Plan L)	Age 55 and 10 years of credited service(2)	Average of three highest calendar or anniversary years	• 3.5% x AFC x years of service, subject to a maximum of 100% of AFC

Plan 10	Normal Retirement Eligibility	Average Final Compensation ("AFC")	Defined Benefit – Retirement Benefits Multiplier
Municipal(3)	Age 60 and 10 years of credited service	Average of five highest calendar or anniversary years	• 1.25% x AFC x years of service up to 20 years
Police and Fire	Age 50 and 10 years of credited service	Average of five highest calendar or anniversary years	• 1.75% x AFC x years of service up to 20 years
			- -
			Defined Contribution
			• The City matches employee contributions at a 50% rate, with the total City match not to exceed 1.5% of compensation for each year. • After five years of credited service, the full amount in the account is distributed to the employee when he or she separates from City service. • The right to the portion of the account attributable to City contributions does not vest until the completion of five years of credited service.

(1) Five years of credited service for those who make additional contributions. See "PENSION SYSTEM – Pension System; Pension Board – Membership."
(2) The lesser of two full terms or eight years of credited service for those elected officials who make additional contributions. See "PENSION SYSTEM – Pension System; Pension Board – Membership."
(3) Under Plan 10 (Municipal), pension contributions freeze after 20 years. At such time and for each subsequent year, the employee's pension payments remain fixed and the employee may no longer make pension contributions.

As part of the new collective bargaining agreement for AFSCME DC 33, the City and AFSCME DC 33 have agreed on a new, stacked hybrid pension plan for new municipal employees represented by AFSCME DC 33 ("Plan 16"). Plan 16 includes a defined benefit and defined contribution component. The defined benefit is applied to annual earnings up to $50,000. Employees with annual salaries over $50,000 may voluntarily participate in the defined contribution portion. The City will match a portion of an eligible employee's voluntary contributions up to a cap of 1.5% of annual compensation. Current municipal employees represented by AFSCME DC 33 will pay a tiered employee pension contribution rate based on their pay range. Starting at an annual salary of $45,000, the tiered structure is progressive so that higher earning employees will contribute at a higher rate.

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 20 shows contracted costs of the City for Fiscal Years 2013-2016, the budgeted amounts and current estimates for Fiscal Year 2017, and the budgeted amounts for Fiscal Year 2018.

Table 20
Purchase of Services in the General Fund
Fiscal Years 2013-2016 (Actual), 2017 (Budget and Current Estimate), and 2018 (Budget)
(Amounts in Millions of USD)(1), (7)

	Actual 2013	Actual 2014	Actual 2015	Actual 2016	Adopted Budget 2017	Current Estimate 2017	Adopted Budget 2018
Human Services(2)	$67.5	$76.3	$77.3	$75.3	$78.9	$79.2	$77.4
Public Health	63.0	60.5	59.4	64.9	66.9	70.6	73.9
Public Property(3)	139.5	140.7	148.8	155.0	159.4	159.7	156.4
Streets(4)	40.5	48.3	47.6	51.9	49.0	48.9	49.7
First Judicial District	16.5	15.8	17.1	17.7	10.7	10.2	9.5
Licenses & Inspections	7.1	10.1	10.0	10.4	11.1	12.0	11.8
Homeless Services(5)	34.2	36.9	36.6	37.1	37.6	37.8	39.1
Prisons	105.4	105.8	101.6	104.9	105.5	108.1	105.5
All Other(6)	284.1	293.2	312.2	305.0	377.5	361.0	411.8
Total	**$757.8**	**$787.6**	**$810.6**	**$822.2**	**$896.9**	**$887.5**	**$935.1**

(1) Sources: For Fiscal Years 2013-2016, the City's Supplemental Report of Revenues & Obligations for such Fiscal Years. For Fiscal Year 2017 (Adopted Budget), the Third Quarter QCMR. For Fiscal Years 2017 (Current Estimate) and 2018, the Fiscal Year 2018 Adopted Budget.
(2) Includes payments for care of dependent and delinquent children.
(3) Includes payments for SEPTA, space rentals, and utilities.
(4) Includes solid waste disposal costs.
(5) Includes homeless shelter and boarding home payments.
(6) Includes the Convention Center subsidy, payments for vehicle leasing, and debt service on lease and service agreement financings, among other things.
(7) Figures may not sum due to rounding.

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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 2013-2016, the budgeted amount and current estimate for Fiscal Year 2017, and the budgeted amount for Fiscal Year 2018.

Table 21
City Payments to School District
Fiscal Years 2013-2016 (Actual), 2017 (Budget and Current Estimate), and 2018 (Budget)
(Amounts in Millions of USD)[(1)]

	Actual 2013[(2)]	Actual 2014[(3)]	Actual 2015	Actual 2016	Budget and Current Estimate 2017	Budget 2018
City Payments to School District	$68.9	$114.1	$69.1	$104.2	$104.3	$104.3

(1) Sources: For Fiscal Years 2013-2016, the City's CAFRs for such Fiscal Years. For Fiscal Year 2017, the Fiscal Year 2017 Adopted Budget and the Twenty-Sixth Five-Year Plan. For Fiscal Year 2018, the Fiscal Year 2018 Adopted Budget.
(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 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. The bond proceeds paid to the School District are not subject to the maintenance of effort described below.

The City's adopted Fiscal Year 2016 budget included a property tax increase and parking tax increase to benefit the School District in amounts of $25 million and $10 million, respectively, which are included in the $104.2 million for Fiscal Year 2016 and the $104.3 million for Fiscal Year 2017 reflected in Table 21 above. Both the $25 million and the $10 million are City revenues collected by the City and then granted to the School District. Each year in the Twenty-Sixth Five-Year Plan reflects these increases in tax revenues, as well as the related expense of the grant to the School District; therefore, these amounts are already part of the City's General Fund balance calculation.

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 2013-2016, the budgeted amount and current estimate for Fiscal Year 2017, and the budgeted amount for Fiscal Year 2018.

Table 22
City Payments to SEPTA
Fiscal Years 2013-2016 (Actual), 2017 (Budget and Current Estimate), and 2018 (Budget)
(Amounts in Millions of USD)[(1)]

	Actual 2013	Actual 2014	Actual 2015	Actual 2016	Budget and Current Estimate 2017	Budget 2018
City Payment to SEPTA	$65.2	$66.0	$70.4	$74.2	$79.7	$82.7

(1) Sources: For Fiscal Years 2013-2016, the City's CAFRs for such Fiscal Years. For Fiscal Year 2017, the Fiscal Year 2017 Adopted Budget and the Twenty-Sixth Five-Year Plan. For Fiscal Year 2018, the Fiscal Year 2018 Adopted Budget.

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 2017-2022 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 Twenty-Sixth Five-Year Plan projects annual operating subsidy payments to SEPTA from the City will increase to $99.7 million by Fiscal Year 2022. For more information on SEPTA, see APPENDIX D – "TRANSPORTATION – Southeastern Pennsylvania Transportation Authority (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 $6.1 billion as of July 1, 2016. In Fiscal Year 2016, the City's contribution to the Municipal Pension Fund was approximately $660.2 million, of which the General Fund's share (including the Commonwealth contribution) was $512.2 million. See Table 29. The City's aggregate pension costs (consisting of payments to the Municipal Pension Fund and debt service on the Pension Bonds (as defined herein)) have increased from approximately 10.15% of the City's General Fund budget to approximately 13.93% of the General Fund budget from Fiscal Years 2007 to 2016. See Table 31. As reflected in the Funded Ratio chart following Table 28, the funded ratio of the Municipal Pension Plan was 50.0% on July 1, 1997 (at which time the UAL was approximately $2.7 billion), and was 44.8% on July 1, 2016.

The decline in the Municipal Pension System's funded status and the net growth of the unfunded liability is the product of a number of factors, including the following:

- The declines in the equity markets in 2000-2001 and in 2008-2009. See Table 24 and the Funded Ratio chart below Table 28.

- A reduction in the assumed rate of return, from 9.00% in 2004 to 7.70% effective July 1, 2016. Although the gradual reductions in the assumed rates of return reflected in Table 24 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, which means 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 9,500. As a result, the aggregate of member contributions and the City's contributions are less than the amount of benefits and refunds payable in any particular year, with the result that investment income must be relied upon to meet such difference before such income can contribute to an increase in the Municipal Pension System's assets growth. See Table 26.

- 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 law, in lieu of the City Funding Policy (as defined herein), resulted in the City contributing less than otherwise would have been contributed. See below, "– Funding Requirements; Funding Standards."

- Revising, in Fiscal Year 2009, in accordance with Pennsylvania law, the period over which the UAL was being amortized, such that the UAL as of July 1, 2009 was "fresh started" to be amortized over a 30 year period ending June 30, 2039. In addition, changes were made to the periods over which actuarial gains and losses and assumption changes were amortized under Pennsylvania law. See "UAL and its Calculation – Actuarial Valuations."

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, which results in the City making larger annual contributions. See Table 24 below.

- Adopting more conservative mortality rates in response to experience studies performed by the Municipal Pension Plan actuary.

- In conjunction with the revisions to the amortization periods that occurred in Fiscal Year 2009, 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 authorized deferrals for Fiscal Years 2010 and 2011 described below).

- Negotiating collective bargaining agreements by which additional contributions are being made (and will be made) by certain current (and future) members and by which benefits will be capped for certain future members of the Municipal Pension Plan. See Table 18.

- 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 pension system's current funded status, 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 $4.4 billion as of June 30, 2016. The Municipal Pension Plan has approximately 28,300 members who make contributions to the plan, and provides benefits to approximately 37,800 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 Fund, Aviation Fund, and certain other City funds or agencies. See Table 29. 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 26 below. An additional source of funding is 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 73 personnel, administers the day-to-day activities of the retirement system, providing services to approximately 66,200 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."

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Membership. The following table shows the membership totals for the Municipal Pension Plan, as of July 1, 2016 and as compared to July 1, 2015.

Table 23
Municipal Pension Plan – Membership Totals

	July 1, 2016	July 1, 2015	% Change
Actives	28,308	27,951	1.3%
Terminated Vesteds	1,248	1,334	-6.4%
Disabled	4,005	4,016	-0.3%
Retirees	22,412	22,245	0.8%
Beneficiaries	8,567	8,566	0.0%
Deferred Retirement Option Plan ("DROP")	1,614	1,784	-9.5%
Total City Members	66,154	65,896	0.4%
Annual Salaries	$1,676,548,962	$1,597,848,869	4.9%
Average Salary per Active Member	$59,225	$57,166	3.6%
Annual Retirement Allowances	$741,828,339	$719,580,951	3.1%
Average Retirement Allowances	$21,205	$20,662	2.6%

Source: July 1, 2016 Valuation.

As shown in Table 23, total membership in the Municipal Pension Plan increased by 0.4%, or from 65,896 to 66,154 members, from July 1, 2015 to July 1, 2016, including an increase of 1.3% in active members from 27,951 to 28,308 (who were contributing to the Municipal Pension Fund). Of the 66,154 members, 37,846 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, 2016 Actuarial Valuation Report (the "July 1, 2016 Valuation") and includes as of July 1, 2016, 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. (*Dombrowski 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 29.

Act 205 was amended in 2009 by Pa. P.L. 396, No. 44 ("Act 44") to authorize the City to: (i) "fresh start" the amortization of the UAL as of July 1, 2009 by a level annual dollar amount over 30 years ending June 30, 2039; and (ii) revise the amortization periods for actuarial gains and losses and assumption changes in accordance with Act 44, as described below under "UAL and its Calculation – Actuarial Valuations." 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 29. Because the final amortization date is fixed, if all actuarial assumptions are achieved, the unfunded liability would decline to zero as of the final amortization date. To the extent future experience differs from the assumptions used to establish the 30-year fixed amortization payment schedule, new amortization bases attributable to a particular year's difference would be established and amortized over their own 20-year schedule.

GASB; City Funding Policy. Governmental Accounting Standards Board ("GASB") Statement No. 27, "Accounting for Pensions by State and Local Governmental Employers" ("GASB 27"), applied 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 defined 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 did not establish funding requirements for the City but rather was an accounting and financial reporting standard. GASB 68 does not require the calculation of an ARC but does 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 29 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. 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. See "– Annual Contributions – Pension Bonds" below.

Revenue Recognition Policy. The City follows a policy (the "Revenue Recognition Policy") to contribute each year to the Municipal Pension Fund an amount in excess of the MMO. The determination for such additional funding is based on not including (i) the portion of the amounts generated by the increase in the Sales Tax rate that became effective on July 1, 2014 and are required by Act 205 to be deposited to the Municipal Pension Fund (see "Revenues of the City – Sales and Use Tax"), and (ii) contributions to be made by City employees that are under Plan 16 (described above in the text that immediately follows Table 19) in the actuarial asset value when determining the annual contribution obligation.

The amounts projected by the City in the Twenty-Sixth Five Year Plan to be deposited from Sales Tax revenue into the Municipal Pension Fund, for the six Fiscal Years 2017-2022, respectively, are as follows: \$18.3 million; \$24.0 million; \$44.6 million; \$49.9 million; \$54.9 million; and \$59.8 million. (These revenue estimates reflect updates made since the data cutoff for performing the July 1, 2016 Valuation. Compare to the amounts under "Sales Tax Contribution" in the first table under the subsection "Actuarial Projections of Funded Status.")

UAL and its Calculation

According to the July 1, 2016 Valuation, the funded ratio (the valuation of assets available for benefits to total actuarial liability) of the Municipal Pension Fund as of July 1, 2016 was 44.8% and the Municipal Pension Fund had an unfunded actuarial liability ("UAL") of \$6.089 billion. The UAL is the difference between total actuarial liability (\$11.025 billion as of July 1, 2016) and the actuarial value of assets (\$4.936 billion as of July 1, 2016).

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 July 1, 2016 Valuation was 7.70% 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 7.75%. See Table 24 for the assumed rates of return for Fiscal Years 2007 to 2016. The 7.75% was used to establish the MMO payment for Fiscal Year 2017; 7.70% will be used to establish the MMO payment for Fiscal Year 2018.

Other key actuarial assumptions in the July 1, 2016 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, 2016, was approximately 113.5% 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: (a) 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); (b) assumption changes be amortized over 15 years beginning July 1, 2010 (prior to July 1, 2010, assumption changes were amortized over 20 years); (c) plan changes for active members be amortized over 10 years; (d) plan changes for inactive members be amortized over one year; and (e) 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 since the July 1, 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 Investor 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, 2016, there were no "excess earnings" as defined to be credited to the PAF. 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 July 1, 2013 actuarial 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 2007-2016 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, 2016, were 4.54% and 4.27%, respectively, on a market value basis.

Table 24
Municipal Pension Fund
Annual Rates of Return

Year Ending June 30,	Market Value	Actuarial Value[1]	Assumed Rate of Return
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%
2015	0.3%	5.8%	7.80%
2016	-3.2%	4.5%	7.75%

Source: July 1, 2016 Valuation.

(1) Net of PAF. See "Pension Adjustment Fund" above. The actuarial values for 2007-2008 reflect a five-year smoothing; for 2009-2016, a ten-year smoothing.

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Asset Values. The following table sets forth as of the July 1 actuarial valuation date for the years 2007-2016 the actuarial and market values of assets in the Municipal Pension Fund and the actuarial value as a percentage of market value.

Table 25
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
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%
2015	$4,863.4	$4,636.1	104.9%
2016	$4,936.0	$4,350.8	113.5%

Source: July 1, 2016 Valuation for Actuarial Value of Assets; 2007-2016 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, 2016 equaled $7.223 million. The Actuarial Value of Assets excludes that portion of the Municipal Pension Fund that is allocated to the PAF. The actuarial values for 2007-2008 reflect a five-year smoothing; for 2009-2016, 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 29 below.

Changes in Plan Net Position. The following table sets forth for the Fiscal Years 2012-2016, 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, Water Operating Fund, and Aviation Operating Fund, but are not made from the Municipal Pension Fund, and therefore are not included in Table 26. 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 26, 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 29 below. The contributions from the Commonwealth are capped pursuant to Act 205, which provides that “[n]o municipality shall be entitled to receive an allocation of general municipal pension system State aid in an amount greater that 25% of the total amount of the general municipal pension system State aid available.”

Employee (member) contribution amounts reflect contribution rates as a percent of pay, which for the plan year beginning July 1, 2017, vary from 5.00% to 6.00% for police and fire employees, and from 3.10% to 7.00% for municipal employees excluding elected officials. These rates include the increases in contributions for certain municipal employees and elected officials currently in Plans 67, 87 and 87 Prime and elected officials as required by legislation. This legislation called for employees in these groups to pay an additional 0.5% of compensation from January 1, 2015 to December 31, 2015 and an additional 1.0% from January 1, 2016 onwards. New employees in these groups entering Plan 87 Municipal prime will pay an additional 1.0% of compensation which is included in the table below.

Table 26
Changes in Net Position of the Municipal Pension Fund
Fiscal Years 2012-2016
(Amounts in Thousands of USD)

	2012	2013	2014	2015	2016
Beginning Net Assets (Market Value)(1)	$4,030,216	$3,922,817	$4,445,224	$4,916,705	$4,674,252
Additions					
- Member Contributions	49,979	49,614	53,722	58,658	67,055
- City Contributions(2)	556,031	781,823	553,179	577,195	660,247
- Investment Income(3)	13,297	442,667	677,380	11,790	(147,424)
- Miscellaneous Income(4)	1,224	3,134	4,089	2,049	1,742
Total	$620,531	$1,277,238	$1,288,370	$649,692	$581,620
Deductions					
- Benefits and Refunds	(712,684)	(746,490)	(808,597)	(881,666)	(889,343)
- Administration	(15,246)(5)	(8,341)	(8,292)	(10,479)	(8,554)
Total	$(727,930)	$(754,831)	$(816,889)	$(892,145)	$(897,897)
Ending Net Assets (Market Value)(6)	$3,922,817	$4,445,224	$4,916,705	$4,674,252	$4,357,975

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 29.

(3) Investment income is shown net of fees and expenses, and includes interest and dividend income, net appreciation (depreciation) in fair value of investments, and net gains realized upon the sale of investments.

(4) Miscellaneous income includes securities lending and other miscellaneous revenues.

(5) The $15.2 million 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 $8.5 million.

(6) For Fiscal Year 2012, does not include the $230 million total contribution receivable, which was paid back and is included in Fiscal Year 2013 in the "City Contributions" amount. See Table 29.

Funded Status of the Municipal Pension Fund

The following two tables set forth as of the July 1 actuarial valuation date for the years 2007-2016, 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 27
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]
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%
2015	$4,863.4	$10,800.4	$5,937.0	45.0%	$1,597.8	371.6%
2016	$4,936.0	$11,024.8	$6,088.8	44.8%	$1,676.5	363.2%

Source: July 1, 2016 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.

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Table 28
Schedule of Funding Progress (Market Value)
(Dollar Amounts in Millions of USD)

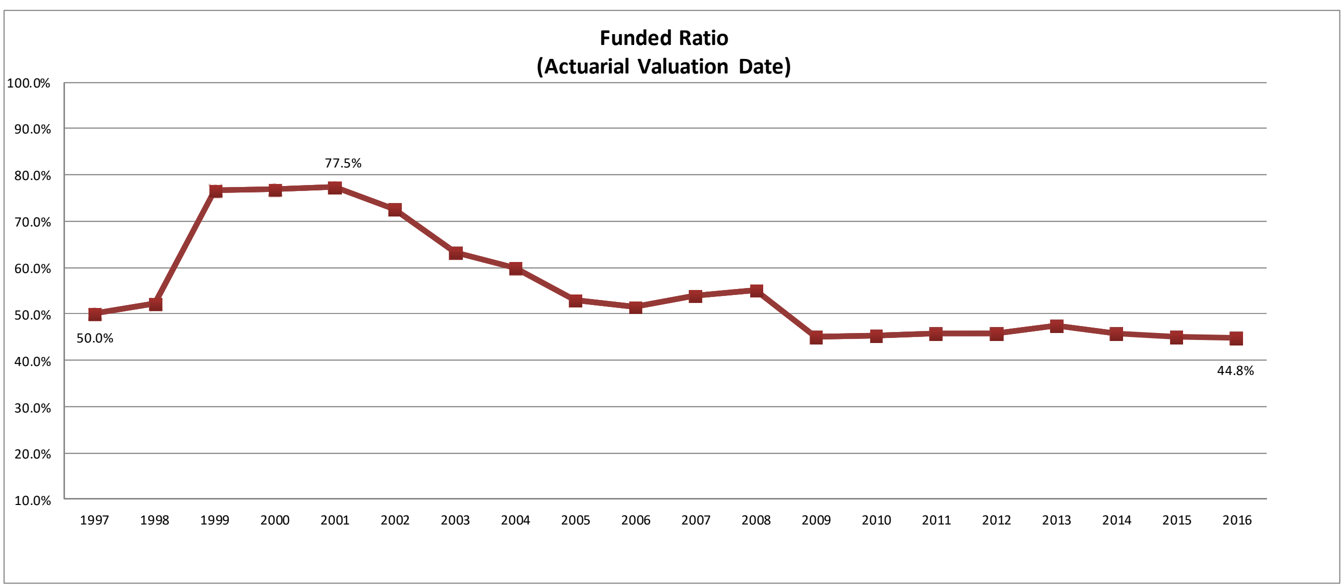
Actuarial Valuation Date (July 1)	Market Value of Net Assets[1] (a)	Actuarial Liability (b)	UAL (Market Value) (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAL as a % of Covered Payroll [(b-a)/c]
2007	$4,850.9	$8,197.2	$3,346.3	59.2%	$1,351.8	247.5%
2008	$4,383.5	$8,402.2	$4,018.7	52.2%	$1,456.5	275.9%
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	$10,521.8	$5,667.6	46.1%	$1,495.4	379.0%
2015	$4,636.1[2]	$10,800.4	$6,164.3	42.9%	$1,597.8	385.8%
2016	$4,350.8[2]	$11,024.8	$6,674.0	39.5%	$1,676.5	398.1%

Source: 2007-2016 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, 2015 equaled $38,198,762, and as of June 30, 2016 equaled $7,223,000.

The following chart reflects the funded ratios, using the actuarial value of assets, for the 20-year period 1997 – 2016.



Annual Contributions

Annual Municipal Pension Contributions

Table 29 shows the components of the City's annual pension contributions to the Municipal Pension Fund for the Fiscal Years 2007-2016.

Table 29
Total Contribution to Municipal Pension Fund
(Dollar Amounts in Millions of USD)

Fiscal Year	General Fund Contribution (A)	Commonwealth Contribution (B)	Aggregate General Fund Contribution (A+B)	Water Fund Contribution	Aviation Fund Contribution	Grants Funding and Other Funds Contribution[1]	Contributions from Quasi-governmental Agencies	Pension Bond Proceeds	Total Contribution (C)	MMO (D)	MMO (Deferred) Makeup Payments	% of MMO Contributed (C/D)
2007	$304.6	$57.7	$362.3	$31.5	$14.3	$11.2	$13.0	$0.0	$432.3	$400.3		108.0%
2008	$292.7	$59.6	$352.3	$32.4	$15.5	$12.2	$14.5	$0.0	$426.9	$412.4		103.5%
2009	$315.0	$59.6	$374.6	$36.4	$17.5	$11.5	$15.4	$0.0	$455.4	$438.5		103.9%
2010	$190.8[2]	$59.2	$250.0	$25.1	$11.6	$10.8	$15.1	$0.0	$312.6[2]	$447.4	$(150.0)[3]	100.0%[4]
2011	$325.8[2]	$61.8	$387.6	$37.7	$17.1	$13.6	$14.2	$0.0	$470.2[2]	$511.0	$(80.0)[3]	100.0%[4]
2012	$352.7	$95.0	$447.7	$43.8	$20.6	$27.4	$16.2	$0.0	$555.7	$507.0		109.7%
2013	$356.5	$65.7	$422.2	$41.4	$20.3	$27.2	$18.1	$252.6[3]	$781.8	$492.0	$230.0[3]	100.0%[4]
2014	$365.8	$69.6	$435.4	$45.5	$22.5	$30.0	$19.8	$0.0	$553.2	$523.4		105.7%
2015	$388.5	$62.0	$450.5	$48.3	$23.9	$33.4	$21.1	$0.0	$577.2	$556.0		103.8%
2016	$449.6	$62.6	$512.2	$55.1	$27.1	$34.8	$31.0	$0.0	$660.2	$595.0		110.0%

(1) Other Funds Contributions represents contributions to the Municipal Pension Fund from the City's Special Gasoline Tax Fund, Community Development Block Grant Fund, Municipal Pension Fund, Acute Care Hospital Assessment Fund, and General Capital Improvement Fund.

(2) 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.

(3) As authorized pursuant to Act 44, the City deferred payments to the Municipal Pension Fund of $150 million in fiscal year 2010 and $80 million in fiscal year 2011. Those amounts were repaid in fiscal year 2013, in which year the City made a contribution of $252.6 million to the Municipal Pension Fund, consisting of $230 million of proceeds of Pension Bonds that were issued in October 2012 and $22.6 million in refunding savings from a refunding Pension Bond financing in December 2012. See " – Pension Bonds" below.

(4) Act 205 directs the Actuary, in performing the actuarial valuations, to disregard deferrals, and therefore for ease of presentation 100.0% is reflected in this column for both the years in which the deferrals occurred and the year in which the makeup payment was made.

Annual Debt Service Payments on the Pension Bonds

Pension funding bonds ("Pension Bonds") were issued in Fiscal Year 1999, at the request of the City, by PAID. 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 29 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 $22.6 million, which the City deposited into the Municipal Pension Fund.

Table 30 shows the components of the City's annual debt service payments on the Pension Bonds for the Fiscal Years 2007-2016.

Table 30
Total Debt Service Payments on Pension Bonds
(Amounts in Millions of USD)

Fiscal Year	General Fund Payment	Water Fund Payment	Aviation Fund Payment	Other Funds Payment[1]	Grants Funding	Total Payment
2007	$74.6	$7.2	$3.2	$0.5	$1.3	$86.8
2008	$78.4	$7.8	$3.5	$0.6	$1.3	$91.6
2009	$84.4	$7.2	$3.3	$0.6	$1.3	$96.8
2010	$96.7	$7.6	$3.4	$0.6	$1.5	$109.8
2011	$97.7	$10.3	$4.6	$0.8	$1.5	$114.9
2012	$100.1	$10.7	$4.8	$0.7	$3.4	$119.7
2013[2]	$196.6	$21.5	$10.1	$1.3	$3.8	$233.3
2014[2]	$211.0	$23.6	$11.2	$1.4	$3.7	$250.9
2015	$107.7	$12.6	$5.9	$0.8	$4.0	$131.0
2016	$109.9	$13.7	$6.4	$0.9	$3.8	$134.7

(1) Other Funds Payments represents the allocable portion of debt service payments on the City's Pension Bonds from the City's Special Gasoline Tax Fund, Community Development Block Grant Fund, Municipal Pension Fund, Acute Care Hospital Assessment Fund, and General Capital Improvement Fund.

(2) The increase in debt service payments in fiscal years 2013 and 2014 over the fiscal year 2012 amounts reflect the debt service payments on the Pension Bonds that were issued in October 2012. See " – Pension Bonds" below.

Annual Pension Costs of the General Fund

Table 31 shows the annual pension costs of the General Fund for the Fiscal Years 2007-2016, being the sum of the General Fund Contribution to the Municipal Pension Fund (column (A) in Table 29 above) and the General Fund debt service payments on Pension Bonds (Table 30 above).

Table 31
Annual Pension Costs of the General Fund
(Amounts in Millions of USD)

Fiscal Year	General Fund Pension Fund Contribution (A)[1]	General Fund Pension Bond Debt Service Payment (B)	Annual Pension Costs (A+B)	Total General Fund Expenditures (C)	General Fund portion of Annual Pension Costs as % of Total General Fund Expenditures (A+B) / C
2007	$304.6	$74.6	$379.2	$3,736.66	10.15%
2008	$292.7	$78.4	$371.1	$3,919.84	9.47%
2009	$315.0	$84.4	$399.4	$3,915.29	10.20%
2010	$190.8	$96.7	$287.5	$3,653.73	7.87%
2011	$325.8	$97.7	$423.5	$3,785.29	11.19%
2012	$352.7	$100.1	$452.8	$3,484.88	12.99%
2013	$356.5	$196.6	$553.1	$3,613.27	15.31%
2014	$365.8	$211.0	$576.8	$3,886.56	14.84%
2015	$388.5	$107.7	$496.2	$3,831.51	12.95%
2016	$449.6	$109.9	$559.5	$4,015.80	13.93%

(1) Does not include Commonwealth contribution. See Table 29.

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The following table shows the annual City contribution to the Municipal Pension Fund as a percentage of the covered employee payroll.

Table 32
Annual City Contribution as % of Covered Employee Payroll
(Dollar Amounts in Thousands of USD)

Fiscal Year	Annual City Contribution	Fiscal Year Covered Employee Payroll(1)	ACC as % of Payroll
2007	$432,267	$1,351,826	31.98%
2008	$426,934	$1,456,520	29.31%
2009	$455,389	$1,463,260	31.12%
2010	$312,556	$1,421,151	21.99%
2011	$470,155	$1,371,274	34.29%
2012	$555,690	$1,372,174	40.50%
2013	$781,823	$1,429,723	54.68%
2014	$553,179	$1,495,421	36.99%
2015	$577,195	$1,597,849	36.12%
2016	$660,247	$1,676,412	39.38%

Source: Municipal Pension Fund Financial Statements, June 30, 2016.

(1) The definition of "covered-employee payroll" in GASB 68 differs slightly from the "covered payroll" definition in GASB 27. See "PENSION SYSTEM – Funding Requirements; Funding Standards – *GASB; City Funding Policy*."

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Actuarial Projections of Funded Status

Cautionary Note. The information under this subheading, "Actuarial 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, UAL, and Funded Ratio. The charts below show projections through 2036 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.**

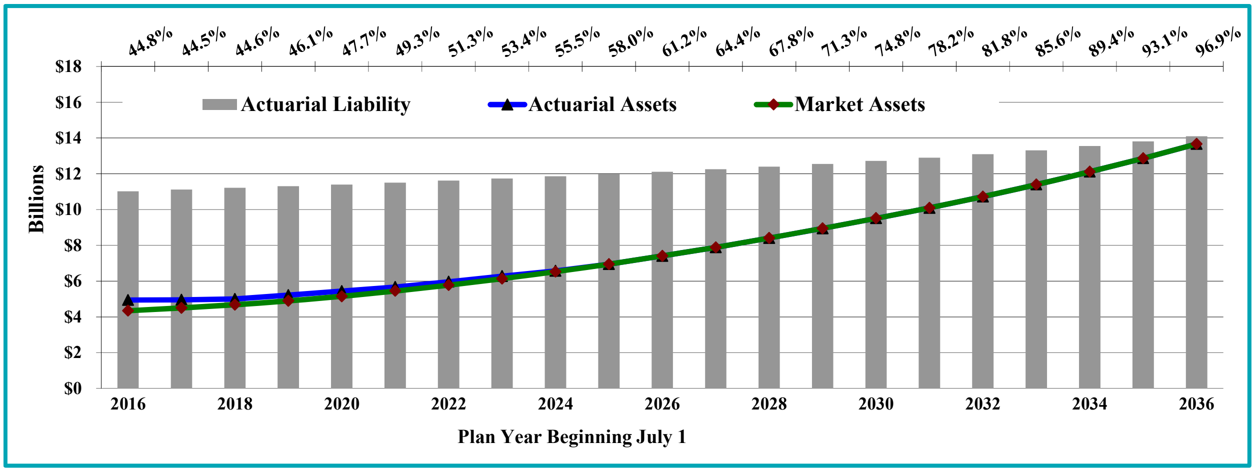
The projections are on the basis that all assumptions in the July 1, 2016 Valuation are exactly realized and the City makes all future MMO payments on schedule as required by Pennsylvania law, and must be understood in the context of the assumptions, methods and benefits in effect as described in the July 1, 2016 Valuation. Included among such assumptions are: (i) the rates of return for the Municipal Pension Fund over the projection period will equal 7.70% 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. The July 1, 2016 Valuation includes charts reflecting the contributions based on MMO (charts 1A and 2A), and charts reflecting the additional contributions in accordance with the Revenue Recognition Policy (chart 3A). The charts below reflect the MMO contributions without taking into account any additional contributions in accordance with the Revenue Recognition Policy. See the July 1, 2016 Valuation for a further discussion of the assumptions and methodologies used by the Actuary in preparing the July 1, 2016 Valuation and the following projections, all of which should be carefully considered in reviewing the projections. The July 1, 2016 Valuation is available for review on the Municipal Retirement System website. The table and charts below separately set forth 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 at the time of the valuation. Please note that the sales tax contribution figures below do not reflect the updated sales tax contribution figures included in the Twenty-Sixth Five-Year Plan (see line 11 of the "Revenues and Expenditures – Summary of Operations Fiscal Years 2016 to 2022" on page 333 of the Twenty-Sixth Five-Year Plan). 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." Each of the tables and graphs that follow are part of the July 1, 2016 Valuation and such Valuation report should be referenced regarding the underlying benefits, methods, and assumptions utilized in the production of these values.

Five-Year Projection. For the following chart, dollar amounts are in millions of USD.

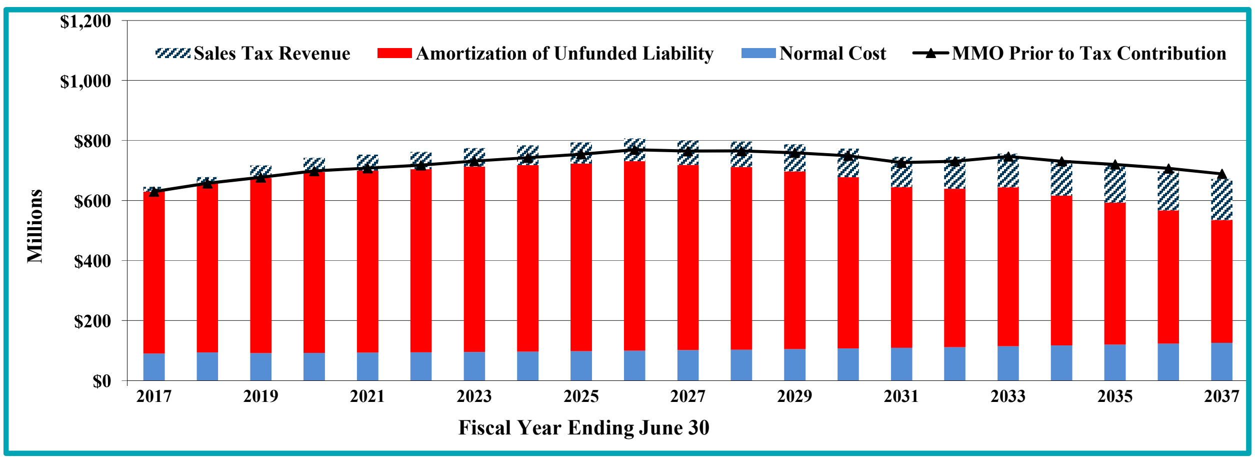
Fiscal Year End	MMO	Sales Tax Contribution	Actuarial Value of Assets	Actuarial Liability	UAL	Funded Ratio
2017	$ 629.6	$ 16.1	$ 4,936.0	$ 11,024.7	$ 6,088.7	44.8%
2018	657.0	21.1	4,955.1	11,126.1	6,171.0	44.5%
2019	675.4	41.7	5,002.4	11,221.0	6,218.5	44.6%
2020	694.7	47.3	5,214.9	11,309.2	6,094.2	46.1%
2021	699.7	52.9	5,437.5	11,392.6	5,955.1	47.7%
2022	704.7	57.2	5,672.3	11,506.9	5,834.6	49.3%

Twenty-Year Projections.

Funded Ratio Chart:



MMO Contribution Chart:



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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 who retired before July 1, 1990; $6,000 for all other retirees). In general, retirees 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 for all other eligible pre-Medicare retirees. Aside from AFSCME DC 33, the City is responsible for the actual health care cost that is invoiced to the City's unions by their respective vendors. The actual cost can be a combination of self-insured claim expenses, premiums, ancillary services, and administrative expenses. Eligible union represented employees receive five years of coverage through their union's health fund. The City's funding obligation for pre-Medicare retiree benefits is the same as for active employees. Union represented and non-union employees may defer their retiree health coverage until a later date. For some groups, the amount that the City pays for their deferred health care is based on the value of the health benefits at the time the retiree claims the benefits, but for police and fire retirees who retired after an established date, the City pays the cost of five years of coverage when the retiree claims the benefits.

The annual payments made by the City for OPEB for the last five Fiscal Years are shown in Table 33 below.

Table 33
Annual OPEB Payment
(Amounts in Thousands of USD)

Fiscal Year ended June 30,	Annual OPEB Payment
2012	$76,344
2013	$57,096
2014	$67,100
2015	$95,300
2016	$107,200

Source: See Note IV.3 to the City's audited Financial Statements for such Fiscal Years (as included in the City's CAFRs).

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, 2015, the date of the most recent actuarial valuation, the UAL for the City's OPEB was $1.77 billion, the covered annual payroll was $1.54 billion, and the ratio of UAL to the covered payroll was 114.8%. See Note IV.3 to the City's audited Financial Statements for the Fiscal Year ended June 30, 2016.

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 July 1, 2016, the PGW Pension Plan membership total was 3,772, comprised of: (i) 2,521 retirees and beneficiaries currently receiving benefits and terminated employees entitled to benefits but not yet receiving them; and (ii) 1,251 participants, of which 1,036 were vested and 215 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, together with investment earnings and employee contributions required for new hires after December 2011 who elect to participate in the PGW Pension Plan. 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. The PUC approves all items that are to be included in PGW's base rates. PGW filed its current rate case with the PUC on February 27, 2017.

Effective October 2015, payments to beneficiaries of the PGW Pension Plan are made by the PGW Retirement Reserve Fund. Prior to October 2015, payments to beneficiaries of the PGW Pension Plan were made by PGW through its payroll system. The financial statements for the PGW Pension Plan for the fiscal year ended June 30, 2016, show an amount due to PGW of approximately $6.0 million, which represents the cumulative excess of payments made to the retirees and administrative expenses incurred by PGW, over the sum of PGW's required annual contribution and reimbursements received from the PGW Pension Plan.

Pension Costs and Funding

PGW pays an annual amount that is projected to be sufficient to cover its normal cost and an amortization of the PGW Pension Plan's UAL. The following table shows the normal cost, the amortization payment, and the resulting annual required contribution as of the last five actuarial valuation dates for the PGW Pension Plan. PGW has been using a 20-year open amortization period (and the payments in Table 34 are on the basis of a 20-year open amortization). Commencing in PGW's fiscal year 2016, PGW will calculate an annual required contribution on the basis of both a 20-year open amortization period and a 30-year closed amortization period, and will contribute the higher of the two amounts. See "– Projections of Funded Status" below. An open amortization period is one that begins again or is recalculated at each actuarial valuation date. With a closed amortization period, the unfunded liability is amortized over a specific number of years to produce a level annual payment. Because the final amortization date is fixed, if all actuarial assumptions are achieved, the unfunded liability would decline to zero as of the final amortization date. To the extent future experience differs from the assumptions used to establish the 30-year fixed amortization payment schedule, new amortization bases attributable to a particular year's difference would be established and amortized over their own 30-year schedule.

Table 34
PGW Pension – Annual Required Contributions
(Dollar Amounts in Thousands of USD)

Calculation of ARC for the 12-month period ended:	Normal Cost[(1)] (A)	Amortization Payment[(1)] (B)	ARC[(1), (2)] (A + B)	Payments to Beneficiaries[(3)]
9/1/2012	$8,782	$14,357	$23,139	$40,122
9/1/2013	$8,533	$15,127	$23,660	$41,614
9/1/2014	$8,852	$12,130	$20,982	$42,913
7/1/2015	$7,859	$18,063	$25,922	$46,917
7/1/2016	$7,992	$20,238	$28,230	$50,447

(1) Source: The Actuarial Valuation Report for the Plan Year July 1, 2016 – June 30, 2017 for the PGW Pension Plan.

(2) As described above, until October 2015, PGW did not make a net cash contribution to the PGW Pension Plan, but rather paid beneficiaries through its payroll system, and then was reimbursed by the Plan. Effective October 2015, payments to beneficiaries of the PGW Pension Plan are made by the PGW Retirement Reserve Fund. Each ARC is the sum reflected in this table, but the "Calculated Mid-Year Contribution" in Tables 36 and 37 more closely approximates the actual pension contributions made by PGW.

(3) Source: For 2012 and 2013, PGW's CAFR for the fiscal years ended August 31, 2012 and 2013, respectively. For 2014-2015, PGW's CAFR for the fiscal year ended August 31, 2015. For 2016, the audited financial statements for PGW for the fiscal years ended August 31, 2016 and 2015.

Although PGW has paid its annual required contribution each year, the market value of assets for the PGW Pension Plan is less than the actuarial accrued liability, as shown in the next table.

Table 35
Schedule of Pension Funding Progress
(Dollar Amounts in Thousands of USD)[1]

Actuarial Valuation Date	Market Value of Assets	Actuarial Liability	UAL (Market Value)	Funded Ratio
9/1/2012	$437,780	$585,632	$147,852	74.75%
9/1/2013	$462,691	$623,612	$160,921	74.20%
9/1/2014	$514,944	$643,988	$129,044	79.96%
7/1/2015	$510,719	$706,704	$195,985	72.27%
7/1/2016[2]	$483,259	$736,078	$252,819	65.65%

(1) Source: The Actuarial Valuation Report for the Plan Year July 1, 2016 – June 30, 2017 for the PGW Pension Plan.

(2) On July 1, 2016, the actuarial value of assets was $511.3 million, resulting in a UAL of $224.8 million, and a funded ratio of 69.46%. See Tables 36 and 37.

The current significant actuarial assumptions for the PGW Pension Plan are: (i) investment return rate of 7.30% compounded annually; (ii) salary increases assumed to reach 4.5% per year; and (iii) retirements that are assumed to occur, for those with 30 or more years of service, at a rate of 15% at ages 55 to 60, 30% at age 61, 50% at ages 62-69, and 100% at age 70 and older.

Since the last actuarial valuation performed as of July 1, 2015, the demographics of the plan participants have changed as follows: (i) the number of plan participants has decreased 0.7%, (ii) the total number of actives in the plan decreased 1.8%, (iii) total payroll has decreased 4.5%, (iv) average pay has decreased 2.8%, and (v) average age of active plan participants increased 1.2%. Effective September 1, 2016, PGW began utilizing an investment rate of return of 7.30% for the PGW Pension Plan. The assumed investment rate return for the period July 1, 2015 – August 31, 2016 was 7.65%. Such reduction in the assumed investment rate of return increased the measurement of plan liabilities by approximately 3.6% and increased the annual contribution by $2,407,000 (2.6% of pay). The foregoing, among other factors, have resulted in an increase in the UAL from approximately $196.0 million at July 1, 2015 to approximately $252.8 million at July 1, 2016.

PGW uses a September 1 – August 31 fiscal year, while the PGW Pension Plan uses a July 1 – June 30 fiscal year (the same as the City's fiscal year). The last two actuarial valuation reports for the PGW Pension Plan utilized a plan year of July 1 to June 30. This is reflected in Table 35 above.

The PGW Pension Plan actuary prepared a separate actuarial valuation report ("GASB 67 Report") for the fiscal year ending June 30, 2016, for purposes of plan reporting information under Governmental Accounting Standards Board Statement No. 67, "Financial Reporting for Pension Plans." The GASB 67 Report shows for the fiscal year ending June 30, 2016, an unfunded liability of approximately $296.1 million (rather than the approximately $252.8 million reflected in Table 35), which results in a funded ratio of 62.00%. In addition, that report provides an interest rate sensitivity, which shows that were the investment rate to be 6.30% (1% lower than the assumed investment rate of 7.30%), the unfunded liability would be approximately $387.1 million.

Projections of Funded Status

The information under this subheading, "Projections of Funded Status," is extracted from tables prepared by Aon Hewitt, as actuary to the PGW Pension Plan, which were included in their "Actuarial Valuation Report for the Plan Year July 1, 2016 – June 30, 2017," dated October 28, 2016. The charts show 10-year projections, using both the current amortization method (20-year, open) and the alternative amortization method (30-year, fixed). See "– Pension Costs and Funding" above. Projections are subject to actual experience deviating from the underlying assumptions and methods. **Projections and actuarial assessments are "forward looking" statements and are based upon assumptions that may not be fully realized in the future and are subject to change, including changes based upon the future experience of the PGW Pension Plan.**

Table 36
Schedule of Prospective Funded Status (20-Year Open Amortization)
(Dollar Amounts in Thousands of USD)

Actuarial Valuation Date (July 1)	Actuarial Value of Assets	Actuarial Accrued Liability	UAL (Actuarial Value)	Calculated Mid-Year Contribution[(1), (2)]	Funded Ratio
2016	$511,289	$736,078	$224,789	$29,260	69.46%
2017	$516,312	$743,161	$226,849	$29,201	69.48%
2018	$520,981	$749,322	$228,341	$29,227	69.53%
2019	$525,256	$754,759	$229,502	$29,361	69.59%
2020	$529,287	$760,354	$231,067	$29,267	69.61%
2021	$539,874	$764,209	$224,335	$28,403	70.64%
2022	$549,285	$766,619	$217,334	$27,526	71.65%
2023	$557,447	$767,850	$210,403	$26,709	72.60%
2024	$564,315	$768,739	$204,424	$25,598	73.41%
2025	$569,580	$769,172	$199,591	$25,018	74.05%

(1) Source: The Actuarial Valuation Report for the Plan Year July 1, 2016 – June 30, 2017 for the PGW Pension Plan.

(2) PGW makes monthly contributions to the PGW Retirement Reserve Fund. The actuary's report assumes contributions at the beginning, middle, and end of the plan year. PGW utilizes the mid-year contribution level to approximate the actual funding methodology.

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Table 37
Schedule of Prospective Funded Status (30-Year Closed Amortization)
(Dollar Amounts in Thousands of USD)

Actuarial Valuation Date (July 1)	Actuarial Value of Assets	Actuarial Accrued Liability	UAL (Actuarial Value)	Calculated Mid-Year Contribution[(1), (2)]	Funded Ratio
2016	$511,289	$736,078	$224,789	$26,470	69.46%
2017	$516,312	$743,161	$226,849	$26,587	69.48%
2018	$520,981	$749,322	$228,341	$26,806	69.53%
2019	$525,256	$754,759	$229,502	$27,157	69.59%
2020	$529,287	$760,354	$231,067	$27,293	69.61%
2021	$539,874	$764,209	$224,335	$26,792	70.64%
2022	$549,285	$766,619	$217,334	$26,298	71.65%
2023	$557,447	$767,850	$210,403	$25,880	72.60%
2024	$564,315	$768,739	$204,424	$25,178	73.41%
2025	$569,580	$769,172	$199,591	$25,013	74.05%

(1) Source: The Actuarial Valuation Report for the Plan Year July 1, 2016 – June 30, 2017 for the PGW Pension Plan.

(2) PGW makes monthly contributions to the PGW Retirement Reserve Fund. The actuary's report assumes contributions at the beginning, middle, and end of the plan year. PGW utilizes the mid-year contribution level to approximate the actual funding methodology.

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 2016 CAFR.

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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 (the "OPEB Surcharge"), 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. In PGW's 2015-2016 Gas Cost Rate ("GCR") proceeding, PGW proposed to continue its OPEB Surcharge. The parties to the GCR proceeding submitted a settlement agreement continuing the OPEB Surcharge at the same level of revenue ($16 million annually) and funding ($18.5 million annually). Such settlement agreement was approved by the PUC.

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Table 38 provides detail of actual PGW OPEB payments for the last five PGW Fiscal Years and projected PGW OPEB payments for PGW Fiscal Years 2017-2021.

Table 38
PGW OPEB Payments
(Amounts in Thousands of USD)

	Fiscal Year ended August 31,	Healthcare	Life Insurance	OPEB Trust	Total
Actual					
	2012	$24,503	$1,483	$18,500	$44,486
	2013	$22,180	$1,562	$18,500	$42,242
	2014	$24,247	$1,615	$18,500	$44,362
	2015	$28,598	$1,749	$18,500	$48,847
	2016(1)	$29,300	$1,800	$18,500	$49,551
Projections					
	2017	$30,971	$1,700	$18,500	$51,171
	2018	$34,449	$1,700	$18,500	$54,649
	2019	$37,659	$1,700	$18,500	$57,859
	2020	$41,010	$1,700	$18,500	$61,210
	2021	$44,661	$1,700	$18,500	$64,861

(1) For PGW Fiscal Year 2016, "Healthcare" and "Life Insurance" are rounded figures and, as such, will not sum. "Total" is an actual figure.

Table 39 is the schedule of PGW OPEB funding progress, as of the actuarial valuation date of August 31 for 2012-2016.

Table 39
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
2012	$38,860	$443,982	$405,122	8.8%
2013	$61,796	$436,527	$374,731	14.2%
2014	$90,838	$450,289	$359,451	20.2%
2015	$104,318	$505,434	$401,116	20.6%
2016	$131,868	$489,725	$357,857	26.9%

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 2016 CAFR.

CITY CASH MANAGEMENT AND INVESTMENT POLICIES

General Fund Cash Flow

Because the receipt of revenues into the General Fund generally lags 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 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 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 $175 million of tax and revenue anticipation notes on October 19, 2016, which matured on June 30, 2017 and were paid in full.

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, the Water 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. Pursuant to the City 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 in accordance with the applicable 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 general obligation debt subject to the limitation described in this paragraph is referred to herein as "Tax-Supported Debt."

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 this Official Statement, Tax-Supported Debt and Self-Supporting Debt are referred to collectively as "General Obligation Debt." The term "General Fund-Supported Debt" is comprised of: (i) General Obligation Debt; and (ii) PAID, PMA, PPA, and PRA bonds.

Using the methodology described above, as of June 30, 2017, the Constitutional debt limitation for Tax-Supported Debt was approximately $6,629,516,000. The total amount of authorized debt applicable to the debt limit was $1,952,005,000, including $873,632,000 of authorized but unissued debt, leaving a legal debt margin of $4,677,511,000. Based on the foregoing figures, the calculation of the legal debt margin is as follows:

Table 40
General Obligation Debt
June 30, 2017
(Amounts in Thousands of USD)

Authorized, issued and outstanding	$1,431,705
Authorized and unissued	873,632
Total	$2,305,337
Less: Self-Supporting Debt	($353,332)
Less: Serial bonds maturing within a year	0
Total amount of authorized debt applicable to debt limit	1,952,005
Legal debt limit	6,629,516
Legal debt margin	$4,677,511

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 $6.630 billion Constitutional debt limit calculation includes four years of property values certified under the City's AVI program, and six 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 40, the Constitutional debt limit is estimated to be $13.411 billion by 2027.

The City is also empowered by statute to issue revenue bonds and, as of June 30, 2017, had outstanding $1,996,916,000 aggregate principal amount of Water and Wastewater Revenue Bonds ("Water and Wastewater Bonds"), $834,850,000, aggregate principal amount of Gas Works Revenue Bonds, and $1,186,465,000 aggregate principal amount of Airport Revenue Bonds. As of June 30, 2017, the principal amount of PICA bonds outstanding was $213,945,000. The City has also enacted an ordinance authorizing the issuance of approximately $350 million aggregate principal amount in commercial paper for the Division of Aviation, and ordinances authorizing the issuance of up to $270 million of Gas Works Revenue Notes to finance working capital and capital projects for PGW and the issuance of up to $300 million of Gas Works Revenue Bonds to finance capital projects for PGW.

Short-Term Debt

The City issued $175 million of tax and revenue anticipation notes on October 19, 2016, which matured on June 30, 2017 and were paid in full. As provided in the PICA Act, the City's tax and revenue anticipation notes are general obligations of the City, but do not constitute debt of the City subject to the limitations of the Constitutional debt limit. See "CITY CASH MANAGEMENT AND INVESTMENT POLICIES – General Fund Cash Flow."

Long-Term Debt

The following table presents a synopsis of the bonded debt of the City and its component units as of the date indicated. Of the total balance of the City's general obligation bonds issued and outstanding as of June 30, 2017, approximately 26% is scheduled to mature within five Fiscal Years and approximately 54% is scheduled to mature within ten Fiscal Years. When PICA's outstanding bonds are included with the City's general obligation bonds, approximately 60% is scheduled to mature within ten Fiscal Years.

Table 41
Bonded Debt – City of Philadelphia and Component Units
(as of June 30, 2017)
(Amounts in Thousands of USD)[(1), (2)]

General Obligation Debt and PICA Bonds				
General Obligation Bonds		$1,431,705		
PICA Bonds		213,945		
Subtotal: General Obligation Debt and PICA Bonds			**$1,645,650**	
Other General Fund-Supported Debt[(3)]				
Philadelphia Municipal Authority				
Criminal Justice Center	$33,100			
Juvenile Justice Center	87,325			
Public Safety Campus	65,155			
Fleet Management Equipment Lease	4,429			
Energy Conservation	9,915			
		$199,924		
Philadelphia Authority for Industrial Development				
Pension capital appreciation bonds	$465,351			
Pension fixed rate bonds	761,655			
Stadiums	262,830			
Library	5,570			
Cultural and Commercial Corridor	89,205			
One Parkway	32,165			
Philadelphia School District[(4)]	14,680			
		$1,631,456		
Parking Authority		11,660		
Redevelopment Authority		174,670		
Subtotal: Other General Fund-Supported Debt			**$2,017,710**	
Revenue Bonds				
Water Fund		$1,996,916		
Aviation Fund		1,186,465		
Gas Works		834,850		
Subtotal: Revenue Bonds			**$4,018,231**	
Grand Total				**$7,681,591**

(1) Unaudited; figures may not sum due to rounding.
(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, 2016, see the Fiscal Year 2016 CAFR.
(3) The principal amount outstanding relating to the PAID 1999 Pension Obligation Bonds, Series B (capital appreciation bonds) is reflected as the accreted value thereon as of June 30, 2017.
(4) This financing was undertaken by the City through PAID for the benefit of the School District and does not represent debt of the School District. For more information on this financing, see "REVENUES OF THE CITY – Sales and Use Tax" and "EXPENDITURES OF THE CITY – City Payments to School District."

Table 42
City of Philadelphia
Annual Debt Service on General Fund-Supported Debt
(as of June 30, 2017)
(Amounts in Millions of USD)[1]

	General Obligation Debt[2]			Other General Fund-Supported Debt[4]			Aggregate General Fund-Supported Debt		
Fiscal Year	Principal	Interest[3]	Total	Principal	Interest[5]	Total	Principal	Interest	Total
2018	70.82	68.73	139.55	108.14	139.22	247.36	178.96	207.95	386.91
2019	74.45	65.18	139.63	74.65	138.74	213.39	149.10	203.92	353.02
2020	76.65	61.51	138.15	65.56	138.61	204.17	142.21	200.12	342.32
2021	69.97	57.94	127.91	80.75	123.50	204.25	150.72	181.44	332.16
2022	73.12	54.45	127.57	78.56	125.71	204.27	151.68	180.16	331.84
2023	77.80	50.65	128.45	115.98	88.28	204.26	193.78	138.93	332.71
2024	81.68	46.59	128.27	114.74	88.28	203.02	196.42	134.87	331.29
2025	85.67	42.36	128.03	119.20	83.84	203.05	204.87	126.20	331.08
2026	82.42	38.14	120.55	134.81	67.43	202.24	217.23	105.57	322.79
2027	86.38	33.88	120.26	159.97	44.41	204.38	246.35	78.29	324.64
2028	91.08	29.57	120.65	165.11	35.16	200.27	256.19	64.73	320.92
2029	65.73	25.87	91.60	273.16	18.18	291.34	338.89	44.05	382.94
2030	81.49	22.33	103.81	53.30	8.60	61.90	134.79	30.93	165.71
2031	86.30	18.27	104.57	55.77	6.14	61.91	142.07	24.41	166.48
2032	90.66	13.99	104.65	15.23	4.08	19.30	105.89	18.07	123.95
2033	55.58	10.40	65.98	7.33	3.55	10.87	62.91	13.95	76.85
2034	43.80	7.85	51.65	7.66	3.20	10.86	51.46	11.05	62.51
2035	29.55	5.98	35.53	8.02	2.85	10.87	37.57	8.83	46.40
2036	31.00	4.54	35.53	8.40	2.47	10.87	39.40	7.01	46.40
2037	17.33	3.33	20.66	8.79	2.08	10.87	26.12	5.41	31.53
2038	17.79	2.42	20.21	9.21	1.66	10.87	27.00	4.08	31.08
2039	18.67	1.55	20.21	9.65	1.22	10.87	28.32	2.77	31.08
2040	7.58	0.96	8.54	3.31	0.77	4.08	10.89	1.73	12.62
2041	7.93	0.61	8.54	3.45	0.62	4.07	11.38	1.23	12.61
2042	8.34	0.21	8.54	3.60	0.48	4.07	11.94	0.69	12.61
2043	0	0	0	3.75	0.33	4.08	3.75	0.33	4.08
2044	0	0	0	3.91	0.17	4.08	3.91	0.17	4.08
Total	**$1,431.79**	**$667.31**	**$2,099.04**	**$1,691.98**	**$1,129.57**	**$2,821.54**	**$3,123.77**	**$1,796.88**	**$4,920.58**

(1) Does not include letter of credit fees. Figures may not sum due to rounding.
(2) Includes both Tax-Supported Debt and Self-Supporting Debt. See "– General." Does not include PICA Bonds.
(3) Assumes interest rate on hedged variable rate bonds to be the associated fixed swap rate.
(4) Includes PAID, PMA, PPA, and PRA bonds, with capital appreciation bonds including only actual amounts payable. The original issuance amount of such capital appreciation bonds is included under the "Principal" column in the Fiscal Year such bonds mature and the full accretion amount at maturity less the original issuance amount is included in the "Interest" column in the Fiscal Year such bonds mature.
(5) Assumes interest rate on hedged variable rate bonds to be the associated fixed swap rate, plus any fixed spread. Net of capitalized interest on 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 in Table 41. 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 $1,335,293 for Fiscal Year 2017.

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 2016 was $30.3 million. The budgeted amount and current estimate for Fiscal Year 2017 is $29.9 million.

In the first quarter of Fiscal Year 2016, the City entered into a service agreement supporting PAID's guaranty of a $15 million letter of credit securing the funding of certain costs related to the 2016 Democratic National Convention.

PICA Bonds

PICA has issued 11 series of bonds at the request of the City (the "PICA Bonds"). PICA no longer has authority under the PICA Act to issue bonds for new money purposes, but may refund bonds previously issued. As of June 30, 2017, the principal amount of PICA Bonds outstanding was $213,945,000. The final maturity date for such PICA Bonds is June 15, 2023. The proceeds of the PICA Bonds were used to: (i) 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 of the City's general obligation bonds; (ii) refund other PICA Bonds; and (iii) 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, as so authorized by the PICA Act, 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"), which continues in effect. The PICA Tax secures the PICA Bonds. Pursuant to the PICA Act, at such time when no PICA Bonds are outstanding, the PICA Tax will expire. At any time, the City is authorized to increase for its own use its various taxes, including its wage, earnings, and net profits taxes on City residents and could do so upon the expiration of the PICA Tax. Certain taxes, such as sales, liquor, and hotel taxes, among others, cannot be increased by the City without Commonwealth approval.

The PICA Tax is collected by the City's Department of Revenue, as agent of the State Treasurer, and 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. See "THE GOVERNMENT OF THE CITY OF PHILADELPHIA – Local Government Agencies – *Non-Mayoral-Appointed or Nominated Agencies* – PICA."

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 Fiscal Years 2013-2016, the budgeted amounts and the current estimates for Fiscal Year 2017, and the budgeted amounts for Fiscal Year 2018 are set forth below.

Table 43
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)[1]

Fiscal Year	PICA Tax	PICA Annual Debt Service and Investment Expenses	Net taxes remitted to the City
2013 (Actual)	$376.5[2]	$62.5[2]	$314.0[4]
2014 (Actual)	$384.5[2]	$65.8[2]	$318.7[4]
2015 (Actual)	$408.5[2]	$62.0[2]	$346.5[4]
2016 (Actual)	$444.5[2]	$61.1[2]	$383.4[4]
2017 (Adopted Budget)	$450.0[2]	$65.3[2]	$384.7[4]
2017 (Current Estimate)	$460.0[3]	$65.3[3]	$394.7[4]
2018 (Adopted Budget)	$475.2[3]	$56.0[3]	$419.2[4]

(1) Figures may not sum due to rounding.
(2) Source: The City's Quarterly City Manager's Reports.
(3) Source: The City's Office of Budget and Program Evaluation.
(4) Source: For Fiscal Years 2013-2016, the City's CAFRs for such Fiscal Years. For Fiscal Year 2017, the Fiscal Year 2017 Adopted Budget and the Twenty-Sixth Five-Year Plan. For Fiscal Year 2018, the Fiscal Year 2018 Adopted Budget.

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OTHER FINANCING RELATED MATTERS

Swap Information

The City has entered into various swaps related to its outstanding General Fund-Supported Debt as detailed in the following table:

Table 44
Summary of Swap Information for General Fund-Supported Debt as of June 30, 2017

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)]	($21,708,517)	($1,859,739)	($15,296,505)	($14,571,079)	($5,097,981)	($4,882,679)
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	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 June 30, 2017, and are shown from the City's perspective and include accrued interest.

(5) On July 15, 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 15, 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 Merrill Lynch.

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 2016 CAFR. In addition, PICA has entered into swaps, which are detailed in the Fiscal Year 2016 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 the City's general obligation bonds, 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 Debt 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 45
Summary of Letter of Credit Agreements
for General Fund-Supported Debt
as of June 30, 2017

Variable Rate Bond Series	Amount Outstanding	Bond Maturity Date	Provider	Expiration Date	Rating Thresholds [1]
General Obligation Multi-Modal Refunding Bonds, Series 2009B	$100,000,000	August 1, 2031	Barclays Bank PLC	May 24, 2019	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 22, 2020	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.

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Recent and Upcoming Financings

Recent Financings. The following is a list of financings that the City has entered into since June 30, 2016:

- In August 2017, the City issued $331,615,000 in General Obligation Bonds.
- In April 2017, PMA issued $83,220,000 in City Agreement Revenue Refunding Bonds for the benefit of the City.
- In April 2017, the City, together with the Water Department, issued $279,865,000 in Water and Wastewater Revenue Bonds.
- In February 2017, the City issued $262,865,000 in General Obligation Refunding Bonds.
- In November 2016, the City, together with the Water Department, issued $192,680,000 in Water and Wastewater Bonds to refund certain outstanding maturities.
- In October 2016, the City issued $175,000,000 of its tax and revenue anticipation notes to finance certain cash flow needs of the City.
- In August 2016, the City, together with PGW, issued $312,425,000 of its Gas Works Revenue Refunding Bonds to refund certain outstanding series of such bonds.

Upcoming Financings. The City currently expects to enter into the following financings within the next six months:

- In August 2017, PAID expects to issue $52,910,000 in City Service Agreement Revenue Bonds for the benefit of the City.
- In August 2017, the City, together with the Water Department, expects to issue $174,110,000 in Water and Wastewater Revenue Refunding Bonds.
- In the fall of 2017, the City, together with the Division of Aviation, expects to issue approximately $690 million in Airport Revenue and Refunding Bonds.

Other Upcoming Transactions

City Council has enacted an ordinance authorizing the City to enter into a sublease not to exceed nineteen years for property located at 400 N. Broad Street and 1501 Callowhill Street to be renovated and used as the City's police headquarters and related facilities. The City's sublease payments will be based on a market interest rate and the repayment of the master landlord's total project cost (currently estimated at $260 million) over the term of the sublease; however, the final structure of the sublease payments has not yet been determined. The City has a purchase option for the property in the ninth year of the sublease. The sublease is anticipated to be executed and effective in the first quarter of Fiscal Year 2018.

CITY CAPITAL PROGRAM

As part of the annual budget process, the Mayor submits for approval a six-year capital program to City Council, together with the proposed operating budget. For more information on the City's budget process, see "DISCUSSION OF FINANCIAL OPERATIONS – Budget Procedure."

Certain Historical Capital Expenditures

Table 46 shows the City's historical expenditures for Fiscal Years 2012-2016 for certain capital purposes, including expenditures for projects related to transit, streets and sanitation, municipal buildings, recreation, parks, museums, and stadia, and economic and community development. The source of funds used for such expenditures are primarily general obligation bond proceeds, but also include federal, state, private, and other government funds and operating revenue. Figures in the table below may not sum due to rounding.

Table 46
Historical Expenditures for Certain Capital Purposes
Fiscal Years 2012-2016

Purpose Category	2012	2013	2014	2015	2016
Transit	$ 1,224,771	$ 3,895,208	$ 2,168,224	$ 1,283,307	$ 3,157,479
Streets & Sanitation	61,753,417	63,925,744	46,806,225	63,612,248	18,004,055
Municipal Buildings	41,583,740	37,979,932	35,579,152	53,419,449	126,772,899
Recreation, Parks, Museums & Stadia	27,002,563	26,609,320	17,787,234	29,875,633	24,737,224
Economic & Community Development	4,654,093	4,654,403	11,839,066	12,714,468	9,695,604
TOTAL	**$136,218,584**	**$137,064,607**	**$114,179,901**	**$160,905,105**	**$182,367,262**

Table 47 shows the City's historical expenditures for Fiscal Years 2012-2016 for certain capital purposes from general obligation bond proceeds only and the percentage of the total costs covered by such proceeds in such Fiscal Years. Figures in the table below may not sum due to rounding.

Table 47
Historical Expenditures for Certain Capital Purposes
(General Obligation Bond Proceeds Only)
Fiscal Years 2012-2016

Purpose Category	2012	2013	2014	2015	2016
Transit	$ 1,224,771	$ 3,895,208	$ 2,168,224	$ 1,274,467	$ 3,157,479
Streets & Sanitation	27,421,106	20,921,343	18,642,621	24,887,488	5,676,057
Municipal Buildings	18,611,628	19,108,015	27,936,597	47,163,418	69,192,711
Recreation, Parks, Museums & Stadia	20,992,545	23,403,765	15,838,047	25,494,778	17,524,673
Economic & Community Development	3,739,978	4,459,786	11,816,222	12,714,468	9,511,479
TOTAL	**$71,990,028**	**$71,788,117**	**$76,401,711**	**$111,534,619**	**$105,062,399**
Percentage of Total Costs	**53%**	**52%**	**67%**	**69%**	**58%**

Adopted Capital Program

The Adopted Capital Program is included as part of the Twenty-Sixth Five-Year Plan and contemplates a total budget of $9.57 billion. In the Adopted Capital Program, $3.33 billion is expected to be provided from federal, Commonwealth, and other sources and the remainder through City funding. The following table shows the amounts budgeted each year from various sources of funds for capital projects in the Adopted Capital Program.

Table 48
Adopted Capital Program (Fiscal Years 2018-2023)
(Amounts in Thousands of USD)

Funding Source	2018	2019	2020	2021	2022	2023	2018-2023
City Funds--Tax Supported							
Carried-Forward Loans	$426,560	-	-	-	-	-	$426,560
Operating Revenue	22,216	$2,250	$2,250	$2,250	$2,000	$2,000	32,966
New Loans	165,206	181,942	160,450	156,978	159,945	157,035	981,556
Prefinanced Loans	4,653	-	-	-	-	-	4,653
PICA Prefinanced Loans	4,947	-	-	-	-	-	4,947
Tax Supported Subtotal	$623,582	$184,192	$162,700	$159,228	$161,945	$159,035	$1,450,682
City Funds--Self Sustaining							
Self-Sustaining Carried Forward Loans	$419,075	-	-	-	-	-	$419,075
Self-Sustaining Operating Revenue	139,345	$59,522	$56,045	$75,048	$82,091	$82,162	494,213
Self-Sustaining New Loans	638,804	636,897	645,134	629,803	643,934	650,701	3,845,273
Self-Sustaining Subtotal	$1,197,224	$696,419	$701,179	$704,851	$726,025	$732,863	$4,758,561
Other City Funds							
Revolving Funds	$9,000	$3,000	$3,000	$3,000	$3,000	$3,000	$24,000
Other Than City Funds							
Carried-Forward Other Government	$4,884	-	-	-	-	-	$4,884
Other Government Off Budget	1,338	$1,639	$1,435	$1,744	$1,717	$1,580	9,453
Other Governments/Agencies	2,300	-	-	-	-	-	2,300
Carried-Forward State	165,951	-	-	-	-	-	165,951
State Off Budget	209,147	200,791	195,945	205,504	204,846	202,860	1,219,093
State	34,350	30,259	30,266	29,763	29,787	22,849	177,274
Carried-Forward Private	115,108	-	-	-	-	-	115,108
Private	87,270	77,351	73,140	73,678	78,591	71,358	461,388
Carried-Forward Federal	262,013	-	-	-	-	-	262,013
Federal Off-Budget	26,819	39,636	69,612	9,324	3,497	-	148,888
Federal	139,934	123,324	141,938	121,961	122,460	116,336	765,953
Other Than City Funds Subtotal	$1,049,114	$473,000	$512,336	$441,974	$440,898	$414,983	$3,332,305
TOTAL	**$2,878,920**	**$1,356,611**	**$1,379,215**	**$1,309,053**	**$1,331,868**	**$1,309,881**	**$9,565,548**

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. In two instances over the last several years, legislation has been introduced in the General Assembly that would have increased such $500,000 limitation. In both such instances, the legislation was not reported out of committee or scheduled for a vote.

General Fund

The following table presents the City's aggregate losses from settlements and judgments paid out of the General Fund for Fiscal Years 2013-2017 and the budgeted amount for Fiscal Year 2018.

Table 49
Aggregate Losses – General and Special Litigation Claims (General Fund)
Fiscal Years 2013-2017 (Actual) and 2018 (Budget)
(Amounts in Millions of USD)

	Actual 2013	Actual 2014	Actual 2015	Actual 2016	Actual 2017	Budget 2018
Aggregate Losses	$30.3	$41.0	$37.3	$41.2	$38.3	$44.9

Sources: The City, Office of Budget and Program Evaluation – Budget Bureau, Indemnity Account, Status Reports.

The current estimate of settlements and judgments from the General Fund for Fiscal Year 2018 is $44.9 million. Such estimate is based on the Law Department's internal calculations using (i) the "Possible Costs" listed in its Quarterly Litigation Reports, (ii) the 3-year average cost for closed cases, and (iii) current year to date spending reports. Based on the Twenty-Sixth Five-Year Plan, the current estimate of settlements and judgments from the General Fund for Fiscal Years 2019-2022 is $44.9 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.

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; (iii) union arbitrations and other employment-related litigation; (iv) potential and certified class action suits; and (v) civil rights 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.

In addition, see "REVENUES OF THE CITY – Other Taxes," for a discussion of litigation relating to the Philadelphia Beverage Tax.

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 2013-2017 and the budgeted amount for Fiscal Year 2018. The current estimate for Fiscal Year 2018 is $6.5 million. The Water Fund is the first source of payment for any of the claims against the Water Department.

Table 50
Aggregate Losses – General and Special Litigation Claims (Water Fund)
Fiscal Years 2013-2017 (Actual) and 2018 (Budget)
(Amounts in Millions of USD)

	Actual 2013	Actual 2014	Actual 2015	Actual 2016	Actual 2017	Budget 2018
Aggregate Losses	$5.1	$6.1	$3.8	$5.4	$7.0	$6.5

Sources: The City, Office of Budget and Program Evaluation – Budget Bureau, Indemnity Account, Status Reports.

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 2013-2017 and the budgeted amount for Fiscal Year 2018. The current estimate for Fiscal Year 2018 is $2.5 million. The Aviation Fund is the first source of payment for any of the claims against the Division of Aviation.

Table 51
Aggregate Losses – General and Special Litigation Claims (Aviation Fund)
Fiscal Years 2013-2017 (Actual) and 2018 (Budget)

	Actual 2013	Actual 2014	Actual 2015	Actual 2016	Actual 2017	Budget 2018
Aggregate Losses	$1.4 million	$665,527	$750,793	$1.3 million	$1.6 million	$2.5 million

Sources: The City, Office of Budget and Program Evaluation – Budget Bureau, Indemnity Account, Status Reports.

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 2012 through 2016. PGW revenues are the first source of payment for any of the claims against PGW. PGW currently estimates approximately $3.8 million and $5.4 million in settlements and judgments for PGW Fiscal Years 2017 and 2018, respectively.

Table 52
Claims and Settlement Activity (PGW)
PGW Fiscal Years 2012-2016
(Amounts in Thousands of USD)

Fiscal Year (ending August 31)	Beginning of Year Reserve	Current Year Claims and Adjustments	Claims Settled	End of Year Reserve	Current Liability Amount
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
2015	$9,944	$3,610	($2,042)	$11,512	$5,011
2016	$11,512	$2,022	($3,041)	$10,493	$5,307

Source: PGW's audited financial statements.

See also "PHILADELPHIA GAS WORKS – Litigation" in the forepart of this Official Statement.

APPENDIX D

THE CITY OF PHILADELPHIA SOCIOECONOMIC INFORMATION

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INTRODUCTION

The City of Philadelphia (the "City" or "Philadelphia") is the sixth largest city in the nation by population, and is at the center of the United States' seventh largest metropolitan statistical area, according to 2016 estimates. The Philadelphia MSA (further described below) includes a substantial retail sales market, 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 and employment skills among Philadelphians, attracting real estate development, and promoting Philadelphia as a desirable location for business.

According to the 2010 U.S. Census, the City increased its population by 0.7% to 1.53 million residents in the ten years from 2000 to 2010, 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 2016, the City increased its population by 2.6% to 1.57 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, low estimated General Fund balances in Fiscal Years 2017-2022, high rates of poverty, and the School District of Philadelphia's (the "School District") ongoing fiscal challenges, 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 both the largest city and the only city of the first class in the Commonwealth, and is 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 6,070,500 residents according to 2016 estimates by the U.S. Census Bureau.[1]

Philadelphia Primary Metropolitan Statistical Area (the "PMSA"), highlighted with bold black outlines, in Figure 1, is a five-county area 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.

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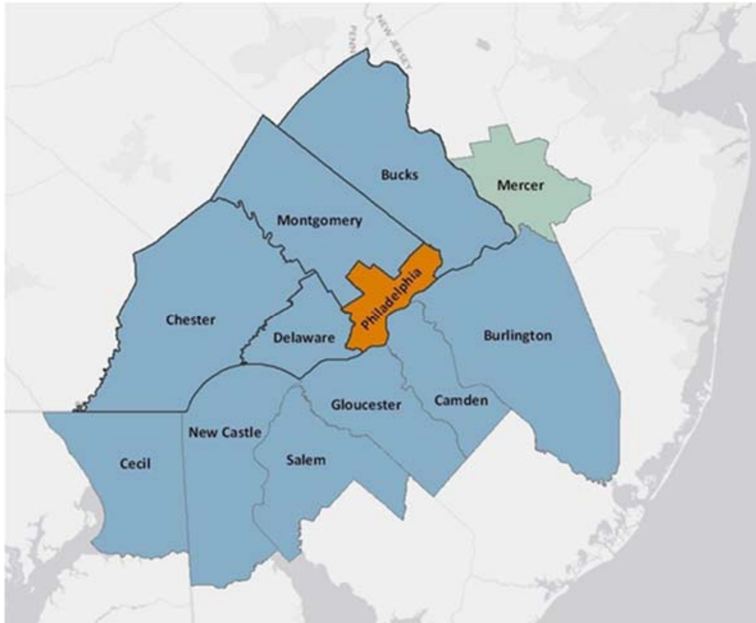
[1] Due to its close proximity and impact on the region's economy, Mercer County, New Jersey, highlighted in green in Figure 1, is included in the MSA by many regional agencies, although it is not included in the area defined by the U.S. Office of Management and Budget.

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 rail 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. Due to the transportation infrastructure centered in the City, Philadelphia is accessible to regional and international markets, and is within a day's drive of 50% of the nation's population. 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 26.5% of Philadelphians used public transit to commute to work in 2014. SEPTA regional rail service had record ridership in Fiscal Year 2015, and SEPTA public transit modes collectively had an average annual aggregate ridership increase of 1.2% from fiscal years 2006-2015.

Population and Demographics

Philadelphia is the nation's sixth most populous city, with 1.57 million residents, based on 2016 estimates. The 2000 and 2010 U.S. Census reflect the City's first population gain in 60 years. The City's population reached its nadir in 2006 with 1.45 million residents. Philadelphia's population has increased by nearly 119,428 residents from 2006 – 2016, or by 8.25%.

From 2006 to 2012, the share of the population represented by citizens age 20 to 34 grew from 20% to 26%, 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. This demographic tends to be better educated than the City's and the nation's adult population as a whole. In 2015, 41.3% of 25- to 34-year-olds in Philadelphia held a bachelor's degree or higher, while only 34.1% 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 161.4% and the Hispanic or Latino population growing by 164.6% from 2000 to 2014, according to the US Census Bureau.

Table 1
Population: City, MSA, Pennsylvania & Nation

	1990	2000	2010	2016	Percent Change 2000-2010	Percent Change 2010-2016
Philadelphia	1,585,577	1,517,550	1,528,427	1,567,872	0.7%	2.6%
Philadelphia-Camden-Wilmington MSA	5,435,468	5,687,147	5,972,049	6,070,500	5.0%	1.6%
Pennsylvania	11,881,643	12,281,054	12,712,343	12,784,227	3.5%	0.6%
United States	248,709,873	281,421,906	309,348,193	321,127,513	9.9%	4.5%

Source: U.S. Census Bureau, Population Estimates 2016, Census 2010, Census 2000, Census 1990.

Nearly 27% of Philadelphia's population is school-aged (aged 5-17), and in 2015, Philadelphia exceeded many selected peer cities in its share of students who are enrolled in an undergraduate, graduate or professional education program. Selected peer cities (as shown in Table 2) reflect characteristics consistent with Philadelphia, such as geography, socio-economic statistics, industrial legacies, or port facilities. Among these cities, while Boston had the highest percentage of its population enrolled in higher education, Philadelphia had 37,315 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.

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Table 2
2015 Total Number of Students, as a Percent of Total Population of Selected Cities, Ranked by Total Number of Students Enrolled in Higher Education

	Total Number of Students Enrolled in School (all years)	Total Number of Students Enrolled in Higher Education	Percent of All Students Enrolled in Higher Education	Percent of Total Population Enrolled in Higher Education
Los Angeles, CA	1,034,553	357,488	34.55%	9.04%
Chicago, IL	680,596	221,655	32.57%	8.67%
Houston, TX	609,644	159,906	26.23%	7.30%
San Diego	376,271	155,714	41.38%	11.27%
Philadelphia, PA	402,440	140,412	34.89%	9.65%
San Antonio, TX	403,558	110,739	27.44%	8.33%
Boston, MA	188,623	103,097	54.66%	17.09%
Phoenix, AZ	410,290	91,924	22.40%	6.72%
Washington, DC	166,940	76,339	45.73%	11.78%
Baltimore, MD	156,644	53,524	34.17%	9.89%
Milwaukee, WI	176,509	49,857	28.25%	10.03%
Detroit, MI	163,368	45,632	27.93%	7.95%
Memphis, TN	181,285	48,901	26.97%	7.56%
Cleveland, OH	99,028	28,664	28.95%	7.56%
United States	81,618,288	22,656,979	27.76%	7.52%

Source: 2015 American Community Survey, 1-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 2013, approximately 182,600 residents of the Philadelphia region's four suburban counties (Bucks, Chester, Delaware, and Montgomery), and an additional 129,000 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.

As shown in Table 11, the cost of living in the City is relatively moderate and affordable compared to other major metropolitan areas along the East Coast. Philadelphia's cost of living is 20% less than the Washington D.C. metropolitan area and 61% less than Manhattan. 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: 1. educational services; 2. health care and social assistance; 3. management of companies and enterprises; 4. arts, entertainment, and recreation; 5. finance and insurance; 6. professional and technical services; 7. other services, and 8. transportation and warehousing.[2] 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; arts, entertainment and recreation; finance and insurance; professional and technical services; 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	4.32	1.51
Health Care and Social Assistance	1.73	1.22
Management of Companies and Enterprises	1.27	1.42
Arts, Entertainment, and Recreation	1.20	1.01
Finance and Insurance	1.16	1.05
Professional and Technical Services	1.13	0.92
Other Services	1.12	1.06
Transportation and Warehousing	1.10	1.18

Source: Bureau of Labor Statistics: 2015 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. In a 2014 Campus Philly report "Choosing Philadelphia," 51% of non-native students, and 76% of native graduates from the region, chose to live in Philadelphia directly after graduation.

The City is also 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, University City Science Center, University of Pennsylvania, Children's Hospital of Philadelphia, Jefferson Hospital, Drexel University, and The Wistar Institute. The University of Pennsylvania's Penn Center for Innovation and Temple University's Office of Technology Development and Commercialization are two of several organizations driving tech transfer and commercialization of innovations developed at Philadelphia's major research institutions. A new development, uCity Square, was announced in late 2016. When the project is complete, it will expand the one million square feet in facilities offered by the University City Science Center to 6 million square feet, with a projected investment of over $1 billion. Such project is expected to be completed in 2027.

[2] 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 dry cleaning and laundry services, personal care services, death care services, pet care services, photofinishing services, temporary parking services, and dating services.

Employment

Table 4 shows non-farm payroll employment in the City over the last decade by industry sectors. In the past 10 years, growth has occurred in Mining, Logging, and Construction; Trade, Transportation, and Utilities; Professional and Business Services; Education and Health Services; and Leisure and Hospitality. These sectors provide stability to the City's overall economy.

Table 4
Philadelphia Non-Farm Payroll Employment[1] (Amounts in Thousands)

Sector	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	% Change 2007-16	Average Annual % Change
Leisure and Hospitality	58.0	57.9	56.9	58.4	60.6	63.2	64.8	66.9	68.5	70.8	22.1%	2.3%
Education and Health Services	192.4	196.7	199.5	202.3	206.4	208.1	209.3	212.7	216.6	223.9	16.4%	1.5%
Professional and Business Services	85.8	85.3	80.1	81.6	83.0	84.1	86.4	88.3	90.9	95.4	11.2%	0.8%
Trade, Transportation, and Utilities	87.8	87.6	85.9	86.6	87.4	88.9	89.5	90.9	92.2	93.0	5.9%	0.6%
Other Services	28.0	27.8	26.6	26.5	26.4	26.8	26.9	26.8	27.1	27.8	-0.7%	-0.4%
Mining, Logging, and Construction	11.9	12.1	10.1	10.0	10.0	10.2	10.4	11.0	11.5	12.0	0.8%	-0.2%
Information	12.6	12.5	12.6	12.2	12.0	12.0	11.5	11.5	11.8	11.7	-7.1%	-0.8%
Financial Activities	47.1	46.5	44.9	42.6	41.6	41.0	41.1	41.7	42.3	42.7	-9.3%	-1.3%
Manufacturing	28.5	27.8	25.7	24.7	23.7	22.9	21.8	21.5	21	20.4	-28.4%	-3.7%
Private Sector Total	552.1	554.2	542.3	544.9	551.1	557.2	561.7	571.3	581.9	597.7	8.3%	0.7%
Government	110.6	109.2	110.4	112.1	109.0	105.3	103.5	102.2	101.6	101.9	-7.9%	-1.0%
Total	662.7	663.4	652.7	657.0	660.1	662.5	665.2	673.5	683.5	699.6	5.6%	0.4%

Source: Bureau of Labor Statistics, 2016.
[1] Includes persons employed within the City, without regard to residency.

Table 5
Philadelphia Change in Share of Employment Sectors[1], Ranked by Percent Change of Share

Sector	Share of Total Employment 2007	Share of Total Employment 2016	Percent Change of Share 2007-2016
Leisure and Hospitality	8.8%	10.1%	15.6%
Education and Health Services	29.0%	32.0%	10.2%
Professional and Business Services	12.9%	13.6%	5.3%
Trade, Transportation, and Utilities	13.2%	13.3%	0.3%
Other Services	4.2%	4.0%	-6.0%
Mining, Logging, and Construction	1.8%	1.7%	-4.5%
Information	1.9%	1.7%	-12.0%
Financial Activities	7.1%	6.1%	-14.1%
Manufacturing	4.3%	2.9%	-32.2%
Private Sector Total	83.3%	85.4%	2.5%
Government	16.7%	14.6%	-12.7%

Source: Bureau of Labor Statistics, 2016.
[1] Includes persons employed within the City, without regard to residency.

Bureau of Labor Statistics data show that in 2016, the Education and Health Services, Professional and Business Services, Financial Activities, and Leisure and Hospitality sectors collectively represented 61.9% of total employment in the City for the year. From 2010 to 2016, Philadelphia has created 52,800 private sector jobs since losing nearly 12,000 private jobs at the peak of the recession in 2009.

Unemployment

Although Philadelphia has recently 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.

As shown in Table 6, employment gains in the latter part of 2013 through 2015 have resulted in a decline in Philadelphia's unemployment rate from a high of 10.9% in 2012 to 6.8% in 2016.

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 2007-2016)

Geographical Area	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Change in rate from 2007-2016
United States	4.6	5.8	9.3	9.6	8.9	8.1	7.4	6.2	5.3	4.9	0.3
Pennsylvania	4.3	5.3	7.9	8.5	7.9	7.9	7.4	5.9	5.1	5.4	1.1
Philadelphia-Camden-Wilmington MSA	4.3	5.3	8.3	8.8	8.5	8.4	7.7	6.2	5.3	5.1	0.8
Philadelphia	6.1	7.1	9.7	10.6	10.7	10.9	10.3	8.1	6.9	6.8	0.7

Source: Local Area Unemployment Statistics, Bureau of Labor Statistics

Principal Private Sector Employers in the City

Table 7 lists Philadelphia's 15 largest private sector employers by number of employees. 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.

Fortune 500 companies headquartered or maintaining a major presence in Philadelphia include: the Comcast Corporation, Cigna Corporation, Aramark Corporation, Crown Holdings Inc., and Lincoln National. As of 2015, four Fortune 1000 companies are also headquartered within the City: FMC Corporation, Urban Outfitters Inc., Chemtura and Pep Boys.

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Table 7
Principal Private Sector Employers
Ranked by Number of Employees in Philadelphia (as of October, 2016)

Employer	Sector	Employees within Philadelphia
University of Pennsylvania	Education	21,193
University of Pennsylvania Health System	Health	15,956
Children's Hospital of Philadelphia	Health	11,895
Temple University Hospital, Inc.	Health	9,030
Temple University	Education	8,674
Comcast Corporation[1]	Media/IT	8,000
Thomas Jefferson University Hospitals	Health	7,825
Drexel University	Education	6,291
Aramark Corporation	Food Service	6,207
Albert Einstein Medical	Health	5,323
American Airlines	Transportation	5,198
Thomas Jefferson University	Education	4,547
Independence Blue Cross	Insurance	3,554
PNC Bank N.A.	Finance	1,883
Ace Insurance Company	Insurance	1,512
GlaxoSmithKline LLC	Bio-tech	1,376
	Total	**118,464**

Source: City of Philadelphia Department of Commerce
[1] Employment data for Comcast Corporation are an estimate provided by Comcast Corporation, May 2015. This estimate includes approximately 2,000 contract workers.

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 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 and medical schools: Children's Hospital of Philadelphia, the Hospital of the University of Pennsylvania, The Wistar Institute, the Fox Chase Cancer Center, and the University City Science Center. Philadelphia is home to two of the nation's 41 National Cancer Institute ("NCI")-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).

Penn Medicine University of Pennsylvania Health System

Penn Medicine includes Pennsylvania Hospital, the nation's first hospital, founded in 1751 and the nation's first medical school, the University of Pennsylvania School of Medicine, opened in 1765. In addition, the Hospital of the University of Pennsylvania was established in 1874 as the nation's first teaching hospital. Penn Medicine's hospitals have been named among the top ten hospitals in the country with the combined University of Pennsylvania and Penn Presbyterian Medical Center ranked #1 in the region by *U.S. News and World Report*. Penn Medicine, which has invested more than $200 million in major capital investments between 2014 and 2015, began construction in 2016 on a new 1.5 million square foot Patient Pavilion, a new clinical facility that is projected to be occupied by spring of 2021.

Children's Hospital of Philadelphia Expansion

Top-ranked Children's Hospital of Philadelphia ("CHOP") is the oldest children's hospital in the nation and one of the largest in the world. Since 2002, CHOP has invested over $2.6 billion in its expansion in Philadelphia. CHOP recently approved an additional $2.7 billion expansion in Philadelphia through 2017. In fall of 2015, phase one of the $500 million, 700,000 square foot Buerger Center for Advanced Pediatric Care was completed; the last few levels within phase two will open in 2017.

Temple University Hospital, Inc.

Temple University Hospital (TUH) is one of the region's most respected academic medical centers. The 722-bed Philadelphia hospital is also the chief clinical training site for the Lewis Katz School of Medicine at Temple University. TUH was ranked among the "Best Regional Hospitals" in six different specialties in *U.S. News & World Report* 2014-2015 regional rankings.

Thomas Jefferson University and Jefferson Health

Thomas Jefferson University Hospital has been at the top of the list of hospitals in Pennsylvania (3rd) and the Philadelphia metro area (2nd) in *U.S. News & World Report*'s annual listing of the best hospitals and specialties. Jefferson Health has recently participated in two significant mergers, integrating the Aria Health system and Abington Hospital into its system. Thomas Jefferson University is currently in the process of acquiring Philadelphia University.

Einstein Healthcare Network

Einstein Healthcare Network is a private, not-for-profit organization with several major facilities and many outpatient centers that has been in existence for nearly 150 years. The Einstein Health and Medical Center in Philadelphia has been listed as a top hospital in *U.S. News & World Report.*

Table 8 lists the top ten recipients of funding from the National Institutes of Health ("NIH") in fiscal year 2016, in order of total funding received. The University of Pennsylvania ("Penn") was the fourth largest recipient of NIH funding in 2016 and consistently places near the top of this list.

Table 8
Largest Recipients of National Institutes of Health Funding, Fiscal Year 2016

	Organization	City	State	Awards	Funding
1	Johns Hopkins University	Baltimore	MD	1297	$650,878,713
2	University of California, San Francisco	San Francisco	CA	1208	$577,576,919
3	University of Michigan	Ann Arbor	MI	1106	$486,690,808
4	University of Pennsylvania	Philadelphia	PA	1107	$478,866,008
5	University of Pittsburgh, Pittsburgh	Pittsburgh	PA	1053	$475,851,374
6	University of Washington	Seattle	WA	885	$458,217,212
7	Stanford University	Stanford	CA	944	$427,012,784
8	Duke University	Durham	NC	778	$416,881,431
9	Univ. of North Carolina Chapel Hill	Chapel Hill	NC	871	$412,385,487
10	Yale University	New Haven	CT	924	$407,245,439

Source: National Institutes of Health, 2016

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 434,000 full and part-time students. Approximately 149,000 students lived within the geographic boundaries of the City in 2015. 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 Princeton University, Villanova University, Bryn Mawr College, Haverford College, Swarthmore College, Lincoln University, and the Camden Campus of Rutgers University.

University of Pennsylvania

Penn, the first university in the U.S., founded in 1740, and a prominent Ivy League institution, is located in West Philadelphia across the Schuylkill River from downtown Philadelphia. In Fall 2016, more than 21,000 full-time undergraduate, graduate and professional full-time students attended Penn, 5,000 of which are international students. Approximately 3,600 part-time students were enrolled. As of December 2016, Penn had a total workforce of over 17,500 faculty and staff, and the University of Pennsylvania Health System had a workforce of 21,626 employees. In September 2016, Penn opened Pennovation Works, a 55,000 square foot business incubator and laboratory that houses researchers, innovators, and entrepreneurs for the commercialization of research discoveries.

Penn has undergone significant expansion in the last decade and has a growing endowment currently valued at $10.7 billion. In 2015, Penn, and related third-party developers, spent $932 million dollars on new buildings and renovations. A recent independent report conducted by Econsult Solutions, Inc. found that Penn and Penn Medicine had a combined economic impact on the City and state of more than $14 billion in fiscal year 2015 including $10.8 billion to the City. According to the same study, Penn generates $1 out of every $20 of Philadelphia's general fund and one out of every nine jobs in the Philadelphia economy.

Drexel University

Founded in 1891 as the Drexel Institute of Science, Art and Industry, Drexel University ("Drexel") is one of Philadelphia's top 10 private employers, and a major engine for economic development in the region. Drexel is known for its innovation and civic engagement, ranked a "top 15 most innovative school" by *U.S. News and World Report*. Drexel's student body consists of approximately 26,000, making it one of the 15 largest private universities in the country. Drexel is unique in that it provides its students with a co-op work experience every six months throughout the four year college experience. Over the last decade, Drexel has undergone significant expansion and has major plans for future development. In 2011, Drexel opened the doors to the $69 million Constantine N. Papadakis Integrated Sciences Building, a $92 million facility for its LeBow School of Business, and a new mixed use residential and retail project, Chestnut Square.

Temple University

Temple University ("Temple"), founded in 1884, 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. Temple features 17 schools and colleges, eight campuses, hundreds of degree programs and more than 38,000 students. Currently, an estimated 12,000 students live on or around the Temple campus. Temple's Board of Trustees approved a master plan, "Visualize Temple," in December 2014, and Temple has 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.

Family and Household Income

Table 9 shows median family income, which includes related people living together, and Table 10 shows median household income, which includes unrelated individuals living together, for Philadelphia, the MSA, the Commonwealth and the United States. Over the period 2006-2015, median family income for Philadelphia increased by 14.7% (see Table 9), while median household income increased by 24.1% over the period 2006-2015 as a result of an influx of higher income households (see Table 10).

Table 9
Median Family Income* for Selected Geographical Areas, 2006-2015
(Dollar Amounts in Thousands)

Year	Philadelphia	Philadelphia-Camden-Wilmington MSA	Pennsylvania	United States	Philadelphia as a percentage of the US
2006	$43.0	$70.8	$58.1	$58.5	73.50%
2007	$44.9	$74.0	$60.8	$61.2	73.37%
2008	$46.4	$77.6	$63.3	$63.4	73.19%
2009	$45.7	$76.9	$62.2	$61.1	74.96%
2010	$43.1	$74.5	$61.9	$60.6	71.12%
2011	$42.7	$75.7	$63.3	$61.5	69.43%
2012	$44.3	$77.0	$65.1	$62.5	70.88%
2013	$44.6	$78.2	$66.5	$64.0	69.69%
2014	$47.0	$80.6	$67.9	$65.9	71.32%
2015	$49.3	$83.0	$70.2	$68.3	72.18%
Change 2006-2015	$6.3	$12.2	$12.1	$9.8	

* Includes related people living together.
Source: 2015 American Community Survey 1-Year Estimates

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Table 10
Median Household Income[*] for Selected Geographical Areas, 2006-2015
(Dollar Amounts in Thousands)

Year	Philadelphia	Philadelphia-Camden-Wilmington MSA	Pennsylvania	United States	Philadelphia as a percentage of the US
2006	$33.2	$55.6	$46.3	$48.5	68.45%
2007	$35.4	$58.3	$48.6	$50.7	69.82%
2008	$37.0	$60.9	$50.7	$52.0	71.15%
2009	$37.0	$60.1	$49.5	$50.2	73.71%
2010	$34.4	$58.1	$49.3	$50.0	68.80%
2011	$34.2	$58.3	$50.2	$50.5	67.72%
2012	$35.4	$60.1	$51.2	$51.4	68.87%
2013	$36.8	$60.5	$52.0	$52.3	70.36%
2014	$39.0	$62.2	$53.2	$53.7	72.63%
2015	$41.2	$65.1	$55.7	$55.8	73.84%
Change 2006-2015	$8.0	$9.5	$9.4	$7.3	2006-2015

* Includes unrelated people living together.
Source: 2015 American Community Survey 1-Year Estimates

One of the factors that contributes to a 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 140,412 according to the 2015 American Community Survey, or approximately 9.65% 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 historically led to an overstatement of the City's percentage of residents living at or below the poverty level.

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. Additionally, the City's Wage, Earnings, and Net Profits Tax Rates have decreased in Fiscal Years 2014, 2015, and 2016. See "REVENUES OF THE CITY – Wages, Earnings, and Net Profits Taxes" in APPENDIX C for this Official Statement.

Table 11
2015-2016 Cost of Living Index* of Cities in the Northeastern U.S.

Metropolitan Area	Cost of Living Index
New York (Manhattan)	228.2
Washington-Arlington-Alexandria	149.2
Boston-Cambridge-Quincy	148.1
Philadelphia-Camden-Wilmington	118.6
Baltimore-Towson	115.6

* Data reflects Q3 2015 – Q3 2016
Source: 2016 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 Dr. Gillen has provided below, but makes no representations regarding the accuracy of the findings set forth herein.

Philadelphia is a post-industrial city located in the northeast corridor of the U.S. between New York and Baltimore. Its housing stock is among the oldest of any city in the country, and has suffered from decades of depopulation and abandonment during the postwar era. Like many U.S. cities, Philadelphia has also undergone a significant revitalization in the past 25+ years, particularly in and around its downtown core of Center City. Philadelphia experienced a net population increase in the most recent Census for the first time since 1950, which was overwhelmingly due to new household growth in these aforementioned neighborhoods.

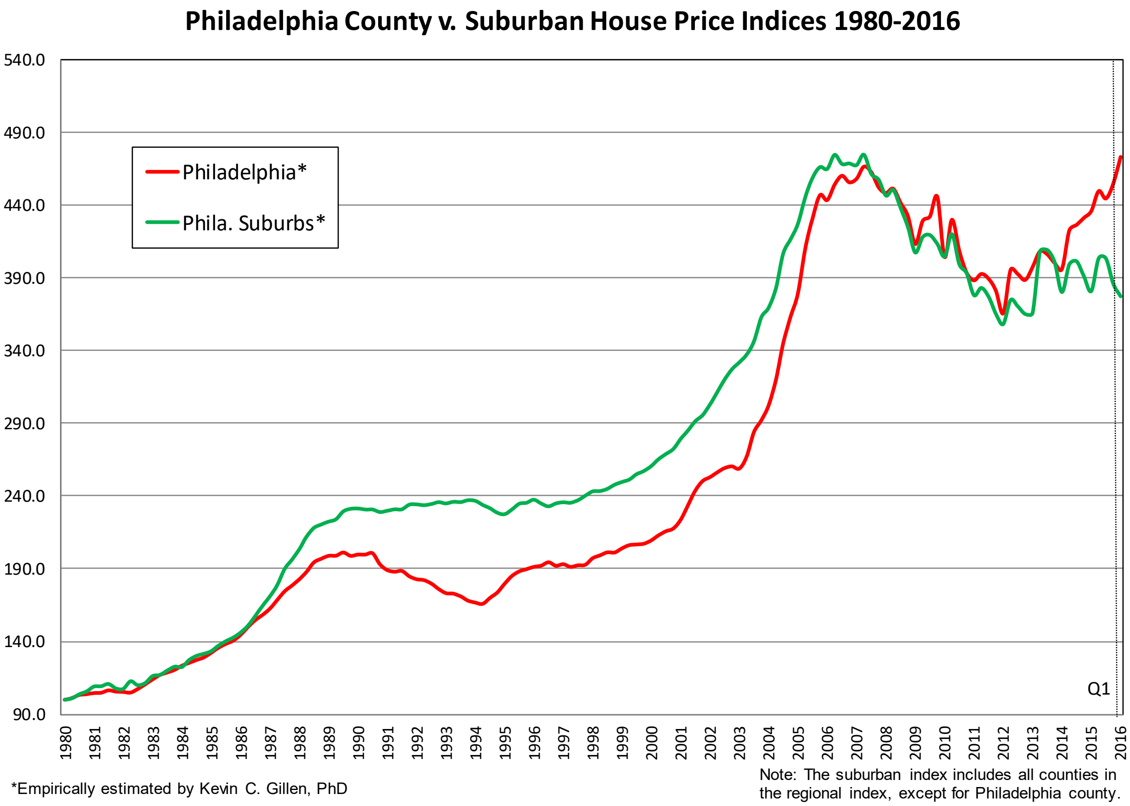
As population has continued to increase, many neighborhoods have undergone significant new construction and investment, leading to increases in the value of the City's housing stock, while large parts of the rest of the City continue to face significant challenges caused by the persistent problems of poverty, crime, underperforming schools and lack of employment opportunities. Most housing indicators for Philadelphia indicate a positive outlook for the near future.

The total housing stock, measured by the number of properties, increased by 3.3% from 2010-2015, for a total of 500,374 in 2015. While both single-family and multi-family unit stock increased over this five year period, the number of multi-family (structures with five or more dwelling units) units decreased by approximately 56.3% from 2014 to 2015. The homeownership rate in the City in 2015 was 52.9%, which represents a 7.2% decline over the prior five-year period. Alternatively, the rental market in the City has continued to improve with average monthly housing rent in 2015 equal to $1,209, which represents a 10.7% increase over the prior five-year period.

The data points referenced in this paragraph were derived from the following source: Philadelphia Recorder of Deeds, Philadelphia Office of Property Assessment, U.S. Census, National Multifamily Housing Council, and Trend MLS.

Home Prices

After nearly ten years of house price deflation and sluggish recovery, 2015 proved to be the best year for Philadelphia housing since the recession. Both the median house price and the house price index for Philadelphia hit new all-time highs. 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 red line) and a similar house price index for Philadelphia's suburbs (the green line). The index is computed via regression, using a hybrid hedonic repeat-sales specification, which is very similar to the same 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 1980 Q1, with its percent change over time reflecting the average price appreciation (or depreciation) rate of the average Philadelphia home. After hitting a peak in mid-2007, the index began a 5-year decline of 23% before hitting bottom in early 2012. Since then, Philadelphia has lagged both other cities and the nation as a whole in its house price recovery. But, after making significant gains in the latter half of 2015 and early 2016, the current index stands at a value that is slightly higher than its peak in 2007, thus indicating that the aggregate loss in the value of Philadelphia's housing stock from the Great Recession has been erased.

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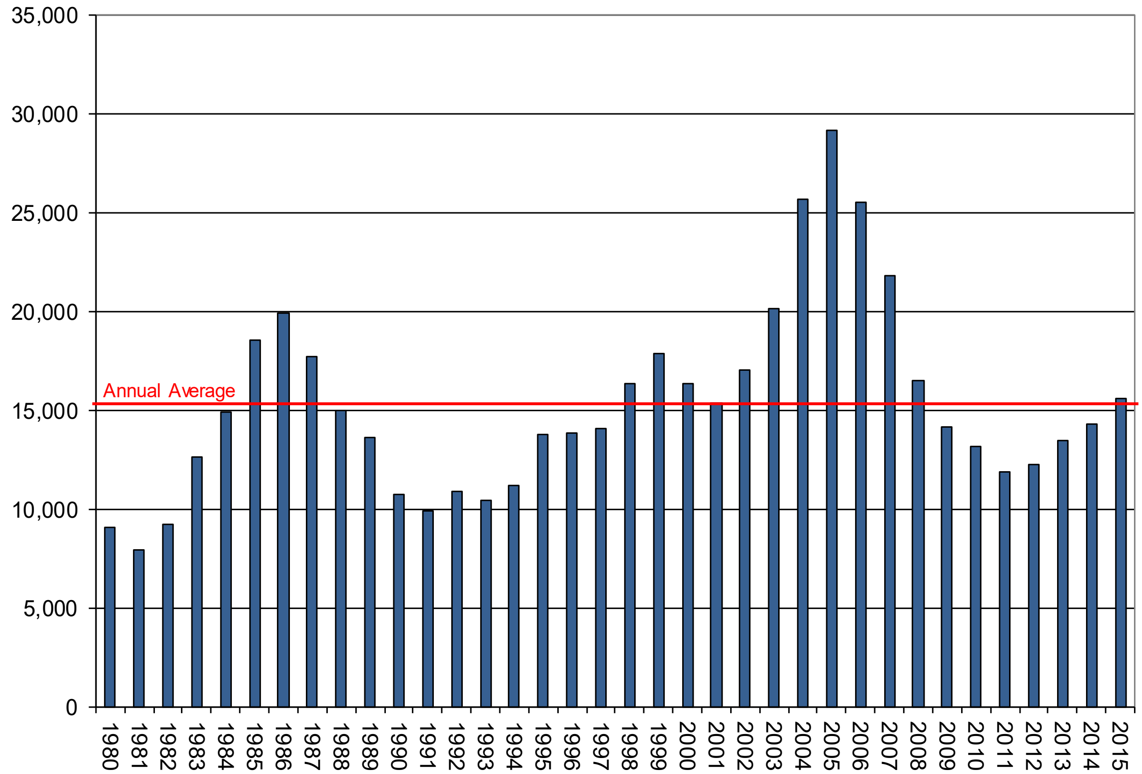
Home Sales

Another indicator of the housing market's recovery is the current level of home sales. The following chart shows the annual number of single-family house sales in Philadelphia since 1980. Only arms-length home sales at market-rate prices are counted in the following chart.

Number of Philadelphia House Sales Per Year: 1980-2015



Source: Philadelphia Recorder of Deeds

Like prices, home sales dropped significantly following the bursting of the housing bubble, and after hitting bottom in 2011 have only sluggishly recovered. However, in 2015, total home sales were just above 15,000 units in Philadelphia, which is back to its historic long-run annual average, and is at its highest level since 2008. As such, the 2015 level of home sales activity reflects the recovery of the City's housing market.

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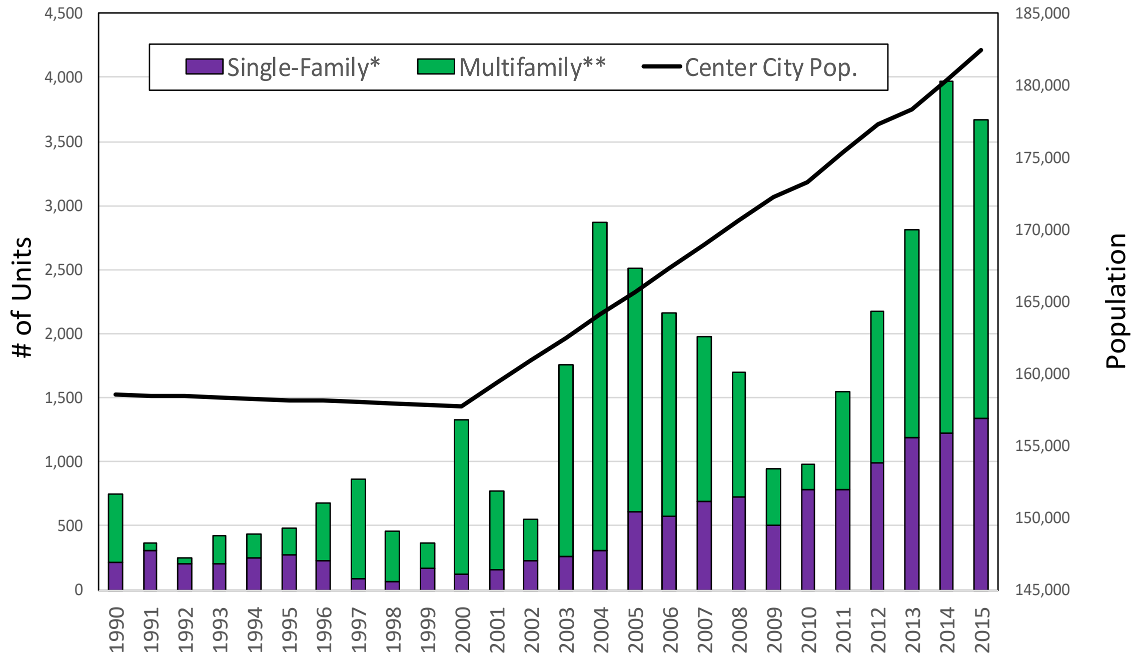
Home Construction

Homebuilding activity in Philadelphia has also 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 2015.

Building Permits Issued for Construction of Residential Units in Philadelphia: Single-Family v. Multifamily



*Structures with 1-4 dwelling units
**Structures with >=5 dwelling units

Source: U.S. Census

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.

Prior to 2000, construction of new housing units in Philadelphia was low by both absolute and relative measures, averaging only 400 units per year, while population growth during this period was actually slightly negative. Following passage of a ten-year property tax abatement program[3] 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 the previous decade. In 2014, permits were issued to approve the construction of nearly 4,000 new housing units in Philadelphia—an all-time high. Although total permitting activity declined in 2015 from the previous year, total residential development activity still remains quite high,

[3] Under the 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.

and appears justified by continued population growth. An easing in development activity could actually be taken as a positive sign, since it gives the market time to allow recently finished projects to be absorbed by the current population, rather than having the flow of supply (new units) exceed the flow in demand (new households).

Office Market and New Development

The City currently has approximately 44.7 million square feet of office space in the Central Business District ("CBD"), with an additional 2.4 million square feet under construction according to Jones Lang LaSalle's ("JLL") statistics for the fourth quarter of 2016. The CBD includes four submarkets: University City, the Navy Yard, Market Street East and Market Street West. Although total vacancy eased slightly in University City with the delivery of the new 49-story, 861,000 square foot FMC Tower at Cira South, JLL also reports that total vacancy in the City's other CBD submarkets remains tight at 10.2%. This low vacancy and the delay of delivery of other Class A office towers, have driven trophy rent in University City to surpass $50 per square foot (full service gross) and the conversion of Class B office space into Class A across the CBD. Properties undergoing redevelopment, especially those in the Market East submarket, are well positioned in current market conditions.

The average direct asking rental rates in the City's CBD rose to $30.24 per square foot in the fourth quarter of 2016. Markedly, the City's CBD enjoys rising rents with low overall total vacancy, the third lowest vacancy rate among peer CBDs across the nation, while its suburban counterparts have higher overall total vacancy and lower rents during the same period, at 14.1% and $25.87 per square foot.

Table 12 shows comparative overall fourth quarter 2016 office vacancy rates for selected office markets.

Table 12
Total Office Vacancy Rates of Selected Office Markets
Central Business Districts, Fourth Quarter 2016

Market	Vacancy Rate
New York-Midtown South	7.5%
Boston	9.4%
Philadelphia	10.2%
Chicago	10.3%
New York-Midtown	10.6%
New York-Downtown	11.6%
Washington, DC	12.0%
United States CBD, All Markets	12.1%
San Antonio	12.8%
Baltimore	14.0%
Detroit	14.1%
San Diego	14.6%
Houston	16.1%
Los Angeles	16.3%
Cleveland	20.5%
Phoenix	21.7%

Source: Jones Lang LaSalle, National CBD Data, Fourth Quarter 2016

Notable developments include the lease-up of FMC Tower to 95% committed within six months of its delivery. Tenants include Spark Therapeutics, Lutron, Penn, FreedomPay, and NASDAQ. Comcast's $1.2 billion Comcast Technology Center is on schedule to deliver in the first quarter of 2018. 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. Comcast also recently clarified plans for a startup accelerator within the building, to be branded as LIFT Labs for Entrepreneurs. The tower will also serve as the new home to the Four Seasons Hotel, which will occupy the tower's top floors with 222 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

According to a December 2016 Center City District report, Philadelphia's retail market has grown substantially and with nearly 185,000 residents, 300,000 workers, 3.1 million occupied hotel room nights and 117,000 college students in and around Center City, the market generates more than $1 billion in retail demand. The report also states that Center City's "affluent and highly educated residential demographic has attracted more than 45 national retailers since 2013. More than 2 million square feet of retail is under construction downtown, as older shopping streets are being redeveloped and Philadelphia's prime retail district continues to expand." According to Commercial Brokers Real Estate's Fall 2016 Report "Philadelphia Urban Retail," Center City's retail rental rates have risen faster than all North American cities other than Miami. The Center City District also reports that pedestrian volumes along West Chestnut now match and surpass pedestrian volumes along West Walnut, the City's traditional "high street." In January 2015, Philadelphia was named the second of 24 "Best Shopping Cities in the World," by Condé Nast Traveler Magazine, behind Barcelona.

Market East, an important commercial area nestled between City Hall and the City's historic district is experiencing a development boom. The revitalization of this section of the City, containing a major transport hub, is expected to be transformative. Most notably, the planned redevelopment of The Gallery at Market East into the Fashion Outlets of Philadelphia is one of the biggest developments in the area. This 430,000 square foot urban retail mall complex features 130 stores. In April 2013, Pennsylvania Real Estate Investment Trust ("PREIT") acquired single entity ownership of The Gallery at Market East. In July 2014, the Macerich Company, which owns 55 shopping centers across the nation, acquired a 50% interest in The Gallery. In December 2015, Macerich and PREIT closed on their agreement for the $325 million redevelopment of the shopping center. Interior demolition of The Gallery at Market East began in 2016 with an estimated completion date of Q4 2018.

Recent improvements along East Market Street also include the 2014 opening of New York-based department store Century 21, the chain's first store outside of New York City, in a 95,000 square foot space that was previously vacant. Also, in March 2014, NREA Development Services announced a mixed-use redevelopment project, called East Market, also located on Market Street between 11th and 12th Streets. Once completed in the late spring of 2017, the project will include 325 apartments, and up to 122,000 square feet of retail space. Just one block south of Market Street, as of July 2016, Brickstone Co. has completed construction of a mixed-use redevelopment project. The project is a mix of new construction and historic preservation and includes up to 115 apartments and 90,000 square feet of retail space. Tenants include Target Express, one of two Center City locations that opened in 2016.

Complementing the rise of retail in Philadelphia, the City has experienced a revival of 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. From 1992 to 2010, the number of fine dining establishments within the Center City District increased 322%. Preliminary data reports that foodservice and drinking establishments employed about 48,800 people in 2015, representing an average annual growth of 2.4% since 2005.

ECONOMIC DEVELOPMENT STRATEGIES AND IMPLEMENTATION

City of Philadelphia Economic Development Mission and Goals

The City's economic development strategy is to (1) spur job-creation by fostering an improved business environment; (2) increase the City's population and visitation; and (3) enhance quality of life within the City – all in order to grow the City's tax base and market competitiveness. The City partners with numerous quasi-city and private agencies to accomplish these objectives.

The City 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 Improvement Districts and reimbursement for certain storefront and interior retail improvements.

The City has also actively worked to raise its profile in the international business community. In October 2015, Philadelphia received the designation of the first World Heritage City in the United States by the Organization of World Heritage Cities. In summer 2015, the City entered into a "sister city" agreement with Frankfurt, Germany, considered the largest financial center in continental Europe. This agreement is Philadelphia's first sister city since 1992. In September 2016, a delegation of City officials and business leaders participated in a trade mission to Germany, France and Portugal further enhancing Philadelphia's relationship with these three countries. In fall 2014 and 2015, Philadelphia hosted delegations of Israeli high-tech companies following a 2013 Israeli trade mission. Additionally, by participating in the Global Cities Initiative with multiple private stakeholders, the City of Philadelphia is supporting the development of a metro export growth plan, which launched in spring 2016.

City and Quasi-City Economic Development Agencies

City of Philadelphia Department of Commerce

The mission of the Department of Commerce, a 75-person City agency, is to ensure that Philadelphia is a globally-competitive city where employers hire, entrepreneurs thrive, and innovation abounds; to recruit and retain a diverse set of businesses; to foster economic opportunities for all Philadelphians in all neighborhoods; and to partner with workforce development programs and local businesses on talent development with the goal of ensuring that all Philadelphians can find and retain living-wage jobs. The Department of Commerce has three major divisions: Neighborhood & Business Services; Office of Business Development and Office of Economic Opportunity.

City of Philadelphia Department of Planning and Development

The Department of Planning and Development oversees all planning, real estate development support, and commissions such as Historical Commission, Planning Commission, Art Commission and Civic Design Review. Planning and Development also oversees all housing initiatives and plays a key role in community development.

Philadelphia Industrial Development Corporation (PIDC)

PIDC is a non-profit organization founded by the City of Philadelphia and the Greater Philadelphia Chamber of Commerce in 1958. PIDC offers flexible financing tools, a targeted portfolio of industrial and commercial real estate, and expertise to help clients invest, develop, and grow in Philadelphia. PIDC also structures and invests in public-private partnerships for key City policy areas and development priorities. Since its inception, PIDC and its affiliates have settled approximately 6,700 transactions, including $14 billion in financing that has leveraged over $25 billion in total investment and assisted in creating and retaining hundreds of thousands of jobs. Its direct loan and managed third-party portfolio at the start of 2016 exceeded $642 million, representing 520 loans.

Philadelphia Redevelopment Authority (PRA)

In 1945, the Commonwealth enacted the Urban Renewal Law and created the PRA as the City's urban renewal agency. Today, the PRA continues its role as a key financer, project manager, leader, and expert of developing and maintaining land in the City of Philadelphia. The PRA is one of five municipal land holding agencies. Its Real Estate Division facilitates the redevelopment of PRA assets and it provides project management and analysis for real estate sales, acquisitions, redeveloper agreements, developer submissions and required approvals. Its Housing Department leads the underwriting and loan closing process for all affordable housing projects within the City of Philadelphia and works primarily with non-profit and for-profit developers as a lender.

Philadelphia Land Bank (PLB)

A new institutional partner in land use is the recently established 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: (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 or by bidding the City's lien interests at a tax foreclosure; (iii) with consent of the City, clear the title to those properties so new owners are not burdened by old liens; and (iv) assist in the assemblage and disposition of land for community, non-profit, and for-profit uses.

The Division of Housing and Community Development (DHCD)

DHCD, formerly known as the Office of Housing and Community Development (OHCD), and now part of the City's Department of Planning and Development, manages planning, policy and investment in low-income housing through several assistance programs. Most significantly, the DHCD 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 Housing Authority (PHA)

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. Over 93% of PHA's annual budget is funded directly or indirectly by the U.S. Department of Housing and Urban Development, and most of the balance of PHA's budget is derived from resident rent payments. Neither PHA's funds nor its assets are available to pay City expenses, debts or other obligations, and the City has no power to tax PHA or its property. Neither the City's funds nor its assets are subject to claims for the expenses, debts, or other obligations of PHA.

Rebuilding Community Infrastructure Program (REBUILD)

Rebuild is a new $500 million initiative to revitalize neighborhood parks, recreation centers, playgrounds, and libraries across the City over a seven-year period. This program is intended to catalyze economic development in some of Philadelphia's most impoverished communities and neighborhoods. Rebuild is not only committed to making transformative capital improvements in neighborhood public and shared spaces, but will also strive to build capacity and opportunities for minority and women-owned businesses and job opportunities for local residents.

Key Commercial Districts and Development

Over the last two decades the efforts of Philadelphia's economic development agencies and others have spurred significant economic revitalization 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. Several key areas within the City have been instrumental in the economic and commercial development of Philadelphia over the past twenty-five years and the population growth since 2000.

Center City

A district that has seen a resurgence over the last two and a half 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, 290,664 riders took public transportation into Center City on the average weekday in 2015. Center City is flanked by neighborhoods that are considered "Greater Center City." Over the last two decades, as there has been an influx of new businesses and residents in these neighborhoods, the boundaries of Greater Center City have moved significantly further North and South, with the Delaware and Schuylkill rivers remaining boundaries on the East and West. 2016 saw a record number of new residential units for a growing downtown population, with 2,506 new units in Greater Center City, a 15.5% increase over the previous high of 2,168. Of these, 73% are rental apartments and 27% were for-sale housing. Six large projects of 100 units or more account for 73% of all new apartments (1,331 units) completed in 2016. Recent and current key developments in Center City listed in Table 13 below total more than $4.1 billion.

Old City

Old City is home to some of the country's oldest historical assets and is considered America's "most historic square mile." Independence National Historical Park is an international destination, attracting 3.6 million visitors annually. Important culturally and economically, Old City is also home to world-class museums, theaters and art galleries. The neighborhood offers excellent hotels, a wide range of dining and nightlife establishments, independent retailers and a diverse mix of technology, media, professional and service organizations. Some 8,000 residents live in historic townhouses, industrial loft apartments and new condominium properties. Old City is located within a Keystone Innovation Zone, meaning that technology, energy and life sciences businesses may be eligible for up to $100,000 in tax credits. Old City District (OCD) is a business improvement district that promotes the area and fosters economic development locally. OCD helps companies find suitable real estate and actively promotes the sector to attract businesses. Over the last few years, technology and creative businesses have established an increasingly important presence in the area.

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 approximately 11% of the City's employment in 2015. 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. University City has experienced significant real estate development, driven mostly through the investment of its universities and research institutional anchors. The University of Pennsylvania built the $88 million Singh Center for Nanotechnology in 2013 and is investing $127 million in a new residence hall called New College House at Hill Field. Drexel University invested nearly $300 million into University City in 2013, and is planning for an additional $3.5 billion over 20 years in the development of Schuylkill Yards in partnership with Brandywine Realty Trust. This project will develop 14 acres of underutilized land near Philadelphia's 30th Street Station into an innovation neighborhood. It will feature a mix of entrepreneurial spaces, educational facilities and research laboratories, corporate offices, residential and retail spaces, hospitality and cultural venues and public open spaces.

The Navy Yard

The Navy Yard is a 1,200 acre mixed-use office, research and industrial park with over 13,000 people working on site across 150 companies. The Navy Yard has diverse tenants such as Philly Shipyard, one of the world's most advanced commercial shipbuilding facilities; the global headquarters for retailer Urban Outfitters, Inc.; a 208,000 square foot, double LEED Platinum corporate office for pharmaceutical company GlaxoSmithKline; and a LEED Silver bakery facility for the Tasty Baking Company. More than 7.5 million square feet of space is currently occupied or in development with significant additional capacity available for office, industrial, retail and residential development.

PIDC and its partners released an updated Navy Yard master plan in 2013, detailing a comprehensive vision for the Navy Yard. The plan calls for a total of over 13.5 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 30,000 employees and over $3 billion in private investment. Currently, PIDC is negotiating changes to deed restrictions with the U.S. Navy to allow the construction of housing at Philadelphia's Navy Yard.

The Navy Yard continues to grow, adding over 500 employees and attracting four new companies in 2016, bringing the Navy Yard closer to its strategic targets. Recently completed construction projects include: 4701 League Island Blvd, the third facility on campus for WuXi AppTec, a leading pharmaceutical and biotechnology company; 1200 Intrepid Ave, the new LEED Gold office building designed by world-renowned architecture firm Bjarke Ingels Group; and most recently, in March 2017, UK-based life sciences company, Adaptimmune, opened its U.S. headquarters and Clinical and Manufacturing Operations at the Navy Yard. This was in addition to the City's announcement in September 2015 that Axalta Coating Systems, an advanced coatings manufacturer, is developing a 175,000 square foot Global Innovation Center at the Navy Yard, which is under construction and slated to open in 2018. Since 2000, the Navy Yard has leveraged more than $150 million in publicly funded infrastructure improvements to spur more than $750 million in new private investment.

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 River 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, Washington Avenue Green in 2014, and Pier 68 in September 2015. All three parks are adaptive reuse projects built on former pier structures. 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. Recently the City announced a $90 million commitment to cap I-95 and build an 11-acre expanse of greenery between Walnut and Chestnut streets, as part of an estimated $225 million project to better connect Center City with the waterfront.

Schuylkill River Development Corporation

Redevelopment along the Schuylkill River is managed by a partnership among 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 2015, $60 million was invested by SRDC, the City, and their partners along the tidal Schuylkill 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. In October 2015, Philadelphia was awarded $10.265 million in federal TIGER grants, split among three projects across the City. The City will use $3.265 million of the grant to convert an abandoned swing rail bridge over the Schuylkill River near Grays Ferry into a bridge trail.

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%. 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. Forty-five thousand 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, completed in 2015, added 500 additional employees to the casino. After a period of significant gains from 2010 through 2012, SugarHouse revenue has leveled off. In fiscal year 2015, the casino's total revenue was $271,201,316, an increase of 0.6% from 2013, and it employed 1,204 people in 2015, up from 1,128 in 2013.

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Table 13
Selected Major Development Investments Recently Completed or Under Construction
(as of March 2017)

Project Name, by Neighborhood	Project Type	Cost in Millions	Est. Completion Date
CENTER CITY		$4,000.00	
1919 Market Street	Mixed Use	148.0	Complete Q2 2016
1116-28 Chestnut	Mixed Use	75.0	Complete Q3 2016
Rodin Square, Whole Foods	Mixed Use	160.0	Complete Q3 2016
1601 Vine Street	Residential	120.0	Complete Q3 2016
Mormon Temple	Religious	70.0	Complete Q4 2016
The Sterling – Redevelopment	Residential	75.0	Complete Q1 2017
East Market (formerly Girard Square)	Mixed Use	250.0	Q2 2017
One Riverside	Residential	90.0	Q3 2017
View 32 - 3201 Race Street	Residential	55.0	Q3 2017
1213 Walnut	Residential	125.0	Q3 2017
Comcast Innovation and Technology Center	Commercial/Hotel	1,200.0	Q4 2017
Park Towne Place – Redevelopment	Residential	200.0	Q1 2018
2400 Market	Mixed Use	230.0	Q1 2018
National Building	Residential	23.0	Q2 2018
W Hotel/Element	Hotel	359.0	Q2 2018
The Hamilton	Residential	130.0	Q3 2018
The Gallery	Commercial	100.0	Q4 2018
1911 Walnut	Mixed Use	300.0	2018
Hanover North Broad	Mixed Use	50.0	2018
SLS Hotel and Residences	Residential and Hotel	240.0	Q1 2019
NAVY YARD		$184.2	
4701 League Island Blvd	Commercial	34.5	Complete Q3 2016
1200 Intrepid	Commercial	47.7	Complete Q3 2016
Adaptimmune	Commercial	23.5	Complete Q1 2017
Axalta R & D Facility	Commercial	67.5	Q4 2017
Pavilion	Commercial	11.0	Q4 2018
OLD CITY		$365.0	
American Revolution Center	Arts & Culture	101.0	Complete Q1 2017
205 Race Street	Residential	65.0	Q2 2017
500 Walnut	Residential	174.0	Q2 2017
218 Arch	Mixed Use	25.0	Q4 2017
OTHER NEIGHBORHOODS		$272.0	
One Water Street	Residential	65.0	Q3 2016
Philadelphia Mills	Commercial	34.0	Q4 2016
Divine Lorraine	Residential	43.0	Q2 2017
Lincoln Square	Mixed Use	130.0	Q1 2018
UNIVERSITY CITY		$2,588.0	
FMC Tower at Cira Centre South	Mixed Use	385.0	Complete Q1 2017
New College House at Hill Field	University Residential	127.0	Complete Q3 2016
The Study at University City	Hotel	50.0	Complete Q3 2016
University of Pennsylvania Pennovation Works	Commercial	26.0	Complete Q4 2016
CHOP Schuylkill Ave Expansion	Health Care	250.0	Q2 2017
4601 Market - Public Safety Services Campus	Public	250.0	Q2 2018
Penn Health Tower	Health Care	1,500.0	Q2 2021
TOTAL		$7,409.2	

Source: Philadelphia Department of Commerce

TOURISM AND HOSPITALITY

Philadelphia has experienced a significant increase in tourism over the last decade, fueled by several high profile, global events that the City hosted, notably the 2015 World Meeting of Families, culminating in a papal visit from Pope Francis, and the Democratic National Convention in 2016. In April 2017, Philadelphia hosted the NFL Draft, which is estimated to have brought approximately 250,000 people to Center City. Both business and convention tourism as well as leisure tourism were at a record high in 2016. 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.

The Philadelphia Convention and Visitors Bureau (PHLCVB) books meetings, conventions and sporting events and supports international marketing of Philadelphia overseas. PHLCVB also books domestic group tours. Tourism Economics, an Oxford Economics Company, reported that international visitors from overseas to Philadelphia in 2015 numbered more than 638,000, spending $595 million generating $982 million in total economic impact to the Philadelphia region. According to the same source, Philadelphia ranks as the 15th most visited city in the U.S. by overseas travelers. Philadelphia’s international visitation has seen significant growth over the past decade, a 27% growth in overseas travelers since 2006 (up from 501,000 in 2006).

The PHLCVB has booked 569 meetings, conventions and sporting events for future years. These groups will bring a total of 2.4 million attendees to Philadelphia consuming 3.5 million room nights and generating an estimated $4.8 billion in total economic impact.

Visit Philadelphia markets Philadelphia domestically, as well as in Canada and Mexico, to promote leisure travel. Philadelphia has attracted more overnight leisure travelers than ever before and Center City hotels reached a landmark 1 million leisure room nights in 2016. Further, several big and new-to-the-city brands are preparing to enter the market during the next two years, along with smaller boutique hotels. Leisure hotel room stays have increased 287% since 1997 and in 2016 the estimated economic impact of leisure travel was $107 billion according to the Visit Philly 2016 Annual Report.

Table 14
Greater Philadelphia† Visitation Growth, 1997-2015
(In Millions)

	1997	2015	Net Change	Percent Growth
Total Visitation	26.7	41.1	14.4	54%
Day - Leisure	15.5	21.9	6.4	41%
Overnight - Leisure	7.3	14.3	7.0	96%
Day - Business	2.5	2.7	0.2	8%
Overnight - Business	1.4	2.2	0.8	57%

†Bucks, Chester, Delaware, Montgomery and Philadelphia counties.
Source: Visit Philadelphia, Tourism Economics, Longwoods International.

Philadelphia has seen an influx in new hotel development, with numerous new developments underway or confirmed. Table 15 lists notable hotel developments since 2015, representing over $1 billion in investment. 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% occupancy. In 2016, the City’s hotel room inventory was 16,115 rooms, with occupancy at 76.7%. Several hotel projects are currently under development, which will increase hotel room inventory by more than 1,300 rooms.

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, the City 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, currently projected to be completed in 2019. The 222-room Four Seasons Hotel will reopen in 2017 on the top 12 floors of the Comcast Innovation and Technology Center.

Table 15
Notable Hotel Developments From 2015 And Projected Forward, In Millions
(As of March 2017)

Project Name	Cost (millions)
The Logan Hotel (2015)	$28
The Study at University City (2016)	$50
101 N. Broad Street Hotel (expected opening in 2017)	-
Four Seasons Hotel in Comcast Tower (expected opening in 2017)	-
SLS Hotel and Residences	$240
Aloft by Starwood (expected opening in 2017)	
W Hotel/Element Hotel (expected opening in 2018)	$359
Conversion of former Family Court Building (projected opening in 2019)	$85
Total	**$762**

Museum and Cultural Centers

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 2016, Lonely Planet named Philadelphia on its top-10 best list of "unexpectedly exciting places to see." In 2015, the top attractions in Philadelphia, including the Independence National Park, the Philadelphia Zoo, and the Philadelphia Museum of Art, had over 14.5 million visitors according to the Philadelphia Business Journal.

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.

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 more than 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.

The Benjamin Franklin Parkway

Complementing the Avenue of the Arts theater district developments, the Benjamin Franklin Parkway is considered the spine of Philadelphia's museum district. Designed by French architect Jacques Gréber, to emulate the Champs Elysées of Paris, the Parkway opened in 1929. It runs from the area of City Hall to the Philadelphia Museum of Art and is a central public space and tourist attraction. Key Parkway features include Love Park – which is undergoing major renovations estimated to be completed in 2017, the Philadelphia Museum of Art, the Rodin Museum, the Franklin Institute, The Barnes Foundation, the Free Library of Philadelphia, the Academy of Natural Sciences, 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 October 2015, the Barnes welcomed its one millionth visitor since opening on the Parkway. With membership over 85,000, it is ranked among the top institutions of its kind in the country.

Historic District

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. 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.

North Broad Street and the Philadelphia Convention Center

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 that did not sign the agreement. In February 2016, the Convention Center announced that 2015 was its highest booking year ever with 856,663 bookings, a 1.2% increase from 2014, representing an estimated $1.1 billion in future economic impact. The 2011 expansion of the Pennsylvania Convention Center reignited development efforts along this 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 entrance. Adjacent to the Convention Center, a 178-room Aloft Hotel by Starwood is under construction and expected to open in 2017.

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 the 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% 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% 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, team performance has contributed to a significant decline in overall attendance, dropping the Phillies attendance ranking to 16 out of 30 teams in 2014, 25 out of 30 in 2015, and 24 out of 30 in 2016.

In 2012, Xfinity Live! Philadelphia, a 50,000 square foot sports entertainment and dining complex, opened within the sports complex. 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. Cordish is currently in early conceptual planning stages of a phased expansion of the complex that could include retail, hotel and theater space. 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. The $425 million, 200,000-square-foot casino will 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. The license award has been challenged by several court appeals; in March 2016, the Pennsylvania Supreme Court ruled that the Pennsylvania Gaming Control Board must take a closer look at the company's ownership structure. Cordish was granted zoning approval in December 2015 and plans to complete the project in 2018, pending further approvals.

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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 C – "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.

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"); Interstate 676 (the "Vine Street Expressway"), running east-to-west through the Central Business District between Interstate 76 (the "Schuylkill Expressway") and I-95; and Interstate 476 (the "Blue Route") in suburban Delaware and Montgomery Counties, which connects the Pennsylvania Turnpike and I-95 and connects to the Schuylkill Expressway, 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. A rail line reaches PHL in less than 20 minutes from the City's central business district and connects directly with the commuter rail network and the Pennsylvania Convention Center.

Philadelphia launched the Indego bike share program, sponsored by Independence Blue Cross, in April 2015. The system launched with 600 bicycles and 70 stations throughout the City from Temple University in North Philadelphia to Tasker Street in South Philadelphia and from the Delaware River to 44th Street in west Philadelphia. Indego is the first bike share system in the United States to launch with a cash payment option for members. In 2016, the City expanded Indego to 1,000 bicycles and 103 bike share stations.

Southeastern Pennsylvania Transportation Authority (SEPTA)

SEPTA operates facilities across the five-county Greater Philadelphia 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 2016 operating budget totals $1.365 billion. This is supported by $829 million in federal, state, and local subsidies, as well as

$535 million of operating revenue. A significant segment of the region relies on SEPTA for public transportation and annual SEPTA ridership totaled more than 326.1 million in Fiscal year 2016.

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.

Beginning in Fiscal Year 2015, SEPTA's annual capital budget and 12-year capital program have increased significantly. The Fiscal Year 2016 capital budget is $534.5 million, representing a 74% increase over the Fiscal Year 2014 budget of $308 million. The Fiscal Year 2016-2027 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.

SEPTA's increased capital budget will enable it to address a variety of needs. First, SEPTA will address its State of Good Repair ("SGR") 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.

Recent Ridership Trends

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 and in Fiscal Year 2015, SEPTA experienced its highest ridership ever for regional rail. For the first quarter of Fiscal Year 2017, SEPTA has reported an overall ridership increase of 4.5%, when compared to the same period for Fiscal Year 2016. However, SEPTA Regional Rail has been impacted by a rail car shortage, resulting from a defect discovered on new rail cars causing 120 cars to be pulled from service. Such shortage has resulted in an approximately 9.1% decline in Regional Rail trips and an overall passenger revenue decrease of 2.3% when compared to the same period for Fiscal Year 2016.

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% 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 nineteenth busiest airport in the United States, serving 30.7 million passengers in calendar year 2014 (i.e. total passengers enplaned and deplaned), and was ranked the twelfth busiest in the nation based on aircraft operations. PHL consists of approximately 2,426 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). The terminal facilities principally include ticketing areas, passenger hold rooms, baggage claim areas and approximately 180 food, retail and service establishments. There are certain other buildings and areas located at PHL, consisting of six active cargo facilities, two American Airlines aircraft maintenance hangars, and a former United States Postal Service building located at the western end of PHL. On July 2, 2015, PHL purchased an adjacent property to PHL known as International Plaza, which has two fully leased buildings with approximately 500,000 square feet of rentable space on a 27-acre tract of land. More recently PHL acquired four additional parcels for future PHL expansion. These include A: 2-acre parcel (8436 Enterprise Ave.), which consists of a one story office and warehouse building, totaling 30,078 square feet, as well as an exterior yard and surface parking lots; B: two segments of a public roadway adjacent to the Airport (Hog Island Road) totaling approximately 8.5 acres and a leasing of three segments totaling approximately 21 acres for 50 years, with an option to purchase after 20 years; C: a 3.4-acre parcel (4848 Island Avenue) adjacent to the Airport consisting of a one story office and warehouse building, totaling nearly 40,750 square feet, as well as a surface parking lot; and D: a vacant lot of 1.1 acres in Tinicum Township (Parcel 8A) at Tinicum Island Road (rear) and bounded by Philadelphia International Airport to the south, east and west sides. These properties were acquired for future PHL expansion.

The outside terminal area consists of a 15-story, 419-room hotel (414 rooms and 5 suites), 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 the 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 175 general aviation aircraft based at PNE.

Capital Development

In the last ten years, the Airport has constructed more than $1.3 billion of capital improvements, including expansion and renovation of existing terminals, and airfield improvement projects, including a runway extension. The Airport's capital projects are included in the long-range Capacity Enhancement Program (CEP) and a near-term, on-going Capital Improvement Program (CIP). The CEP is a set of projects being pursued to improve efficiency, modernize airport facilities and provide additional capacity for future growth. It is a multi-year endeavor with multiple phases, and the timing for each development will be closely coordinated with the airlines and other stakeholders in order to maintain operational efficiency during construction. Approved CEP projects include a runway extension, taxiway improvements and the consolidated rental car facility. The Airport is working with its airline partners to review the sequencing and prioritization of the remaining elements within the CEP, which include expanding and reconfiguring the existing terminal complex; a new runway; an additional runway extension; further taxiway improvements; relocating several on and off-airport facilities to facilitate airfield improvements; cargo facility development; and parking and roadway improvements.

The CIP focuses on the near-term capital facility needs. CIP projects are developed to complement the framework of the CEP and the Airport's ultimate development. Major CIP projects include completion of Terminals D/E checked baggage inspection system; a new deicing facility; and on-going rehabilitation and replacement projects.

Use and Lease Agreement

In June 2015, the City Council of Philadelphia approved a five-year Airport-Airline Use and Lease Agreement (Airline Agreement) between PHL and the airlines. The Airline Agreement began July 1, 2015, and includes options for two one-year extensions.

PHL will continue to study, plan, and modularly execute the mission to ensure its full potential benefit to PHL and its stakeholders. Table 16 provides the total project amounts approved since 2007.

Table 16
Ongoing Capital Projects Approved Since 2007

Capital Projects	**Current Project Amount (millions $)**
Capacity Enhancement Program (CEP)(1)	$1,125.90
2007-2015 Capital Improvement Program (CIP)(2)	$309.92
2016 Capital Improvement Program (CIP)(3)	$173.25
2016 Majority in Interest (MII) approved Projects(4)	$289.24

Source: City of Philadelphia, Division of Aviation

(1) Includes redevelopment of existing terminals; relocations of on-airport and off-airport facilities; environmental commitment start-up; Runway 9R-27L (future 9C-27C) extension and associated eastside taxiway work; stage 1 airfield site work and fuel line work; automated people mover (design); and ground transportation center.

(2) Includes repair, rehabilitation and upgrade programs for roofs, restrooms, windows, passenger loading bridges, mechanical and electrical systems, and security and access control systems; airfield civil improvements; and landside infrastructure improvements.

(3) Includes airfield re-pavement, emergency operations center, repair & rehabilitation and upgrade programs for curb doors, roofs, loading bridges, air handling units, HVAC and fire protection systems; emergency operations center; and LED conversion program.

(4) Includes land acquisitions, airfield taxiway reconstruction, purchases of Aircraft Rescue and Fire Fighting (ARFF) Vehicle and central deicing facility reconstruction, Arrivals road security bollards, Air Traffic Control Tower.

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PHL Passenger and Other Traffic Activity

In FY 2016, domestic enplaned passenger traffic grew as PHL's low-cost carriers, specifically Frontier Airlines and Spirit Airlines, began serving several new destination cities. JetBlue Airways also added twice daily service to Fort Lauderdale, FL during the course of FY 2016. This growth was offset by slight reductions in outbound international traffic, which was mainly attributable to American Airlines discontinuing year-round service to Tel Aviv, Israel in early January 2016 and seasonal service to Edinburgh, Scotland, which did not return in May 2015. Additionally, American temporarily suspended service to Brussels, Belgium in March 2016 after a series of coordinated bombings in that city, two of which occurred at Brussels Airport. American later discontinued the Brussels service across their entire network.

PHL experienced a decline in aircraft operations while also experiencing a slight increase in landed weight in FY 2016 due mainly to changes in aircraft fleet mix instituted by PHL's mainline carriers as they move to eliminate many of the regional aircraft from their respective route networks.

Enplanements and Operations Activity at PHL

	Fiscal Year 2016	Fiscal Year 2015	Percentage Increase (Decrease)
Domestic Enplanements (Outbound passengers):	13,484,253	13,072,574	3.1%
International Enplanements (Outbound passengers):	2,199,305	2,240,164	(1.8)%
Total Enplanements (Outbound passengers):	15,683,558	15,312,738	2.4%
Operations (Takeoffs & landings):	407,968	414,121	(1.5)%
Landed Weight (1,000-pound units):	20,821,203	20,772,632	0.2%

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 two Class I railroads (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") reported approximately 6,262,648 metric tons of cargo moved through the Port in 2016, the second year of more than 6 million tons of cargo in a single calendar year, representing a 2.7% increase over 2015. 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 December 2015, the PRPA secured a new shipping service that will link directly with burgeoning port operations on the Gulf of Mexico at Veracruz and Altamira. This service will target commodities including goods such as avocados, lemons, tomatoes and commercial cargo.

The PRPA is working to increase the Port's competitiveness by increasing capacity by deepening the main channel of the Delaware River from 40 to 45 feet which scheduled to be completed in late 2017/early 2018. Most recently in November, the Governor announced $300 million in Commonwealth funding to significantly expand the Port's facilities and double its capacity by 2020. Improvements will double container and auto capacity at the Port and increase the Port's ability to handle wood pulp, a food grade commodity.

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 Department"). The water and wastewater systems are referred to herein individually as the "Water System" and "Wastewater System," respectively.

The Water System's service area includes the City of Philadelphia and has one wholesale water contract. Based on the 2015 U.S. Census Bureau estimate, the Water System served approximately 1,567,442 individuals.

As of June 30, 2016, the Water System served approximately 480,000 active retail customer accounts using approximately 3,100 miles of mains and approximately 25,000 fire hydrants. The City obtains approximately 59% 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. On September 27, 2016, the PaDEP issued the Water Department a new water allocation permit, which expires on September 27, 2041. Under the new permit, the amount the City is authorized to withdraw from each river has not changed. The Water Department will begin discussions with the Delaware River Basin Commission to ratify the new permit.

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 is 546 MGD. The combined maximum source water withdraw capacity from the two rivers that supply these plants is 680 MGD. The excess source water capacity enables higher than normal withdrawal on either river should conditions limit the withdrawal from one river. 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 2016, the Water System distributed 81,687 MG of water at an average daily rate of 223.8 MGD. In Fiscal Year 2016, the maximum water production experienced by the Water System in one day was 258.2 MG.

The Wastewater System's service area is the City of Philadelphia and ten wholesale contracts with municipalities in the Philadelphia metropolitan area. Based on the 2015 U.S. Census Bureau estimate, the Wastewater System serves approximately 1,567,442 individuals that live in the City, in addition to those living in areas served by the wholesale contracts.

As of June 30, 2016, the Wastewater System served approximately 545,000 accounts, including approximately 50,000 stormwater-only accounts, and ten wholesale contracts with neighboring municipalities and authorities.

The Wastewater System consists of three water pollution control plants ("WPCPs"), 19 pumping stations, approximately 3,700 miles of sewers, and a privately managed centralized biosolids handling facility. It includes 1,850 miles of combined sewers, 760 miles of sanitary sewers, 740 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 379 MGD of wastewater in Fiscal Year 2016, have a 522 MGD combined average daily design capacity and a peak capacity of 1,059 MGD.

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 Kenney continues the City's commitment to make Philadelphia the greenest and most sustainable city in America. To aid in achieving this goal, the 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. The City introduced its new bicycle sharing system, Indego, in 2015, as further described in "TRANSPORTATION." Bicycle share programs have been successfully implemented in other cities worldwide.

APPENDIX E

SUMMARY OF THE 1998 GENERAL ORDINANCE

The following are summaries of certain provisions of the 1998 General Ordinance. The summary does not purport to be comprehensive or definitive and is subject to the complete text of the terms and provisions of the 1998 General Ordinance, to which reference is hereby made. Copies of the complete text of the 1998 General Ordinance are available from the Office of the Director of Finance, Municipal Services Building, 1401 John F. Kennedy Boulevard, Suite 1330, Philadelphia, Pennsylvania 19102.

Certain Definitions

Set forth below are definitions in summary form of certain terms used in the forepart of this Official Statement and in this APPENDIX E – "SUMMARY OF THE 1998 GENERAL ORDINANCE." Many of these terms and the complete text of the definitions can be found in the 1998 General Ordinance. Certain terms in this APPENDIX E vary from the terms defined in the 1998 General Ordinance. In that event, the defined term used in the 1998 General Ordinance is included in parentheses with the applicable summary definition below.

"Accreted Value" means, with respect to any Capital Appreciation 1998 Ordinance Bond as of any specified date, the Original Value of such 1998 Ordinance Bond plus interest accreted on such 1998 Ordinance Bond to such date, 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 15224), as from time to time amended.

"Bond Counsel" means any firm of nationally recognized bond counsel acceptable to the City.

"Bondholder or Holder" means the registered owner of any 1998 Ordinance Bonds.

"Bond Register" means the list of the names and addresses of Bondholders and the principal amounts and numbers of the 1998 Ordinance Bonds held by them maintained by the Fiscal Agent on behalf of the City.

"Capital Appreciation 1998 Ordinance Bonds" (Capital Appreciation Bonds) means any 1998 Ordinance Bonds issued under the 1998 General Ordinance which do not pay interest until maturity or until a specified date prior to maturity, but whose Original Value accretes periodically to the amount due on the maturity date.

"City Charges" means the proportionate charges, if any, for services performed for the Gas Works by all officers, departments, boards or commissions of the City which are contained in the computation of operating expenses of the Gas Works including, without limitation, the expenses of the Gas Commission, and also means the base payments to the City contained in the Management Agreement and all other payments made to the City from Gas Works Revenues.

"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, or any successor legislation, and the regulations and published rulings promulgated thereunder or applicable thereto.

"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 "A."

"Credit Facility Issuer or issuer of a Credit Facility" means each issuer of a Credit Facility then in effect, and its successors. References to the Credit Facility Issuer shall be read to mean the issuer of the Credit Facility applicable to a particular Series of 1998 Ordinance Bonds or each issuer of a Credit Facility, as the context requires.

"Debt Service Requirements" means, for a specified period, the sum of (i) the principal of (whether at maturity or pursuant to mandatory redemption) and interest (other than capitalized interest) on Outstanding 1998 Ordinance Bonds payable during the period and (ii) all net amounts due and payable by the City under Qualified Swaps and Exchange Agreements during the period. For purposes of estimating Debt Service Requirements for any future period, (i) any Option 1998 Ordinance Bond outstanding during such period shall be assumed to mature on the stated maturity date thereof, except that the principal amount of any Option 1998 Ordinance 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; (ii) Debt Service Requirements on 1998 Ordinance Bonds for which the City has entered into a Qualified Swap or an Exchange Agreement shall be calculated assuming that the interest rate on such 1998 Ordinance Bonds shall equal the stated fixed or variable rate payable by the City on the Qualified Swap or Exchange Agreement or, if applicable and if greater than such stated rate, the applicable rate for any 1998 Ordinance Bonds issued in connection with the Qualified Swap or Exchange Agreement adjusted, in the case of variable rate obligations, as described below in the second to last paragraph under the heading "**Covenants** − *Rate Covenant*"; and (iii) Debt Service Requirements with respect to Variable Rate 1998 Ordinance Bonds shall be subject to adjustments as described below in the second to last paragraph under the heading "**Covenants** − *Rate Covenant*."

"Director of Finance" means the chief financial, accounting and budget officer of the City as established by the Philadelphia Home Rule Charter, including a person acting as Director of Finance under applicable law.

"Engineer" means a consulting engineer or a firm of consulting engineers, in either case having broad experience in the design and analysis of the operation of gas works or gas distribution systems of the magnitude and scope of the Gas Works and a favorable reputation for competence in such field.

"Exchange Agreement" means, with respect to a Series of 1998 Ordinance Bonds, or any portion thereof 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 as an Exchange Agreement and providing for payments to and from 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 are calculated by reference to fixed or variable rates and constituting a financial accommodation between the City and the counterparty.

"Fiscal Agent" means any bank, bank and trust company or trust company named as such pursuant to the 1998 General Ordinance or its successor.

"Fiscal Year" means the Fiscal Year of the Gas Works.

"Fitch" means Fitch IBCA, Inc., a corporation organized and existing under the laws of the State of New York, its successors and assigns and if such corporation shall for any reason no longer perform the functions of a securities rating agency, "Fitch" shall be deemed to refer to any other nationally recognized securities rating agency designated by the City. Whenever rating categories of Fitch are specified in the 1998 General Ordinance, such categories shall be irrespective of gradations within a category.

"Gas Commission" means the Gas Commission provided for by the Philadelphia Home Rule Charter as presently constituted or hereafter reconstituted in accordance with law.

"Gas Works" means all property, real and personal, owned by the City and used in the acquisition or manufacture, storage and distribution of natural, liquefied, synthetic or manufactured gas or in the maintenance, management or administration thereof and all activities ancillary and related thereto, and also means, as the context may require, the business entity managed by the Manager.

"Gas Works Revenues" means all operating and nonoperating revenues of the Gas Works derived from its activities and assets involved in the supply, manufacture, storage and distribution of gas, including all rents, rates and charges imposed or charged by the City upon the owners or occupants of properties connected to, and upon all users of, gas distributed by the Gas Works and all other revenues derived therefrom and all other income derived by the City from the Gas Works. Revenues derived from activities unrelated to the supply, manufacture, storage and distribution of gas or assets related thereto shall not be included in Gas Works Revenues, provided that the Gas Works receives fair payment for the use of gas related assets and personnel of the Gas Works used in such activities, which payments shall be included in Gas Works Revenues. In particular, Gas Works Revenues do not include revenues from enterprises or functions not related to gas activities (e.g., activities involving the supply, generation or distribution of electricity). Gas Works Revenues shall not include those portions of the Gas Works' rents, rates and charges which are securitized and sold pursuant to the 1998 General Ordinance as described below under "Permitted Securitization of Gas Works Revenues." Gas Works Revenues may be divided into separate components in one or more Supplemental Ordinances and any Series of 1998 Ordinance Bonds issued thereafter may be limited as to source of payment to one or more of such components as provided in the Supplemental Ordinance authorizing the particular Series of 1998 Ordinance Bonds.

"Government Obligations" means any of the following which are noncallable and which at the time of investment are legal investments under the Act for the moneys proposed to be invested therein:

(a) direct general obligations of, or obligations the payment of principal of and interest on which are unconditionally guaranteed as to full and timely payment by the United States of America;

(b) direct obligations and fully guaranteed certificates of beneficial interest of the Export-Import Bank of the United States; consolidated debt obligations and letter of credit-backed issues of the Federal Home Loan Banks; participation certificates and senior debt obligations of the Federal Home Loan Mortgage Corporation; debentures of the Federal Housing Administration; mortgage-backed securities (except stripped mortgage securities which are valued greater than par on the portion of unpaid principal) and senior debt obligations of the Federal National Mortgage Association; participation certificates of the General Services Administration; guaranteed mortgage-backed securities and guaranteed participation certificates of the Government National Mortgage Association; guaranteed participation certificates and guaranteed pool certificates of the Small Business Administration; debt obligations and letter of credit-backed issues of the Student Loan Marketing Association; local authority bonds of the U.S. Department of Housing & Urban Development; guaranteed Title XI financings of the U.S. Maritime Administration; or

(c) obligations issued by the Resolution Funding Corporation pursuant to the Financial Institutions Reform, Recovery and Enforcement Act of 1989 (the "FIRRE Act"), (i) the principal of which obligations is payable when due from payments of the maturing principal of non-interest bearing direct obligations of the United States of America which are issued by the Secretary of the Treasury and deposited in the Funding Corporation Principal Fund established pursuant to the FIRRE Act, and (ii) the interest on which obligations, to the extent not paid from other specified sources, is payable when due by the Secretary of the Treasury pursuant to the FIRRE Act.

"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.

"Interim Debt" means any bond anticipation notes or other temporary borrowing which the City anticipates permanently financing with 1998 Ordinance Bonds or other long term indebtedness under the 1998 General Ordinance or otherwise.

"Management Agreement" means the Agreement dated December 29, 1972 between the City and the Manager for the management and operation of the Gas Works, as presently or hereafter amended, or any successor agreement which may be entered into by the City pertaining to the management of the Gas Works.

"Manager" means Philadelphia Facilities Management Corporation, currently managing the Gas Works pursuant to the Management Agreement, or its successor or such other person, corporation, board, commission or department of the City, which may be designated by the City to manage the Gas Works.

"Moody's" means Moody's Investors Service, Inc., a corporation organized and existing under the laws of the State of Delaware, its successors and assigns, and if such corporation shall for any reason no longer perform the functions of a securities rating agency, "Moody's" shall be deemed to refer to any other nationally recognized securities rating agency designated by the City. Whenever rating categories of Moody's are specified in the 1998 General Ordinance, such categories shall be irrespective of gradations.

"Net Operating Expenses" means Operating Expenses exclusive of City Charges.

"1998 Ordinance Bond or Bonds" (Bond or Bonds) means any Gas Works Revenue bond or note issued and outstanding pursuant to the Act under the 1998 General Ordinance and any Supplemental Ordinance.

"Operating Expenses" means all costs and expenses of the Gas Works necessary and appropriate to operate and maintain the Gas Works in good operable condition during each Fiscal Year, and shall include, without limitation, the Manager's fee, salaries and wages, purchases of service 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 Gas Works, which does not have a probable useful life of at least five years, pension and welfare plan and workmen's compensation requirements, provision for claims, refunds and uncollectible receivables and for City Charges, all in accordance with generally accepted municipal accounting principles consistently applied, but shall exclude depreciation and interest and sinking fund charges. Operating Expenses shall not include Unrelated Expenses.

"Option 1998 Ordinance Bond" (Option Bond) means any 1998 Ordinance 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.

"Original Value," with respect to a Series of 1998 Ordinance Bonds issued as Capital Appreciation 1998 Ordinance Bonds, means the principal amount paid by the initial purchasers thereof on the date of original issuance.

"Outstanding," when used with reference to the 1998 Ordinance Bonds, means, as of any particular date, all 1998 Ordinance Bonds which have been authenticated and delivered under the 1998 General Ordinance, except:

(a) 1998 Ordinance Bonds canceled after purchase in the open market or because of payment or redemption prior to maturity;

(b) 1998 Ordinance Bonds for the payment or redemption of which sufficient moneys shall have been theretofore deposited with the Fiscal Agent (whether upon or prior to the maturity or redemption date of any such 1998 Ordinance Bonds), provided that, if such 1998 Ordinance Bonds are to be redeemed prior to the maturity thereof, notice of such redemption shall have been given as provided in the 1998 General Ordinance or arrangements satisfactory to the Fiscal Agent shall have been made therefor, or waiver of such notice satisfactory in form to the Fiscal Agent shall have been filed with the Fiscal Agent; and

(c) 1998 Ordinance Bonds in lieu of which or in substitution for which others have been authenticated and delivered pursuant to the 1998 General Ordinance.

1998 Ordinance Bonds paid with the proceeds of any Credit Facility shall be Outstanding until the issuer of such Credit Facility has been reimbursed for the amount of the payment or has presented the 1998 Ordinance Bonds for cancellation.

"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, §1 et seq. (53 P.S. §13101 et seq.).

"Qualified Escrow Securities" means funds which are represented by (i) 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, (ii) 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 such Rating Agency to obligations of the same type, or (iii) noncallable Government Obligations. In each case such funds (i) are subject to withdrawal, mature or are 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 the disbursement date payable with respect thereto, if also pledged, to meet such obligations in full.

"Qualified Swap or Swap Agreement" means, with respect to a Series of 1998 Ordinance Bonds or any portion thereof, 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 1998 Ordinance Bonds of such Series or portion thereof, 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 1998 Ordinance 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 1998 Ordinance 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 1998 Ordinance Bonds of such Series or portion thereof 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 same principal amount of such 1998 Ordinance Bonds at 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 1998 Ordinance 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 such 1998 Ordinance Bonds.

"Qualified Swap Provider" means, with respect to a Series of 1998 Ordinance 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 covenant described below under the subheading "**Covenants** – *Rate Covenant*."

"Rating Agency" means Moody's, S&P or Fitch, to the extent that any of such rating services have issued a credit rating on any of the Outstanding 1998 Ordinance 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 any of the Outstanding 1998 Ordinance Bonds.

"Rebate Amount" means the amount with respect to a Series of 1998 Ordinance Bonds, which is required to be paid to the United States of America, as of any computation date, in compliance with the restrictions imposed by the Code.

"S&P" means Standard & Poor's Ratings Services, a corporation organized and existing under the laws of the State of New York, its successors and assigns, and if such corporation shall for any reason no longer perform the functions of a securities rating agency, "S&P" shall be deemed to refer to any other nationally recognized securities rating agency designated by the City. Whenever rating categories of S&P are specified in the 1998 General Ordinance, such categories shall be irrespective of gradations within a category.

"Senior 1998 Ordinance Bonds" (Senior Bonds) means 1998 Ordinance Bonds which shall be first in right of payment and as to which the coverage requirement under the Rate Covenant shall be 150%.

"Series," when applied to 1998 Ordinance Bonds, means collectively all of the 1998 Ordinance Bonds of a given issue authorized by Supplemental Ordinance as described below under "Conditions to Issuing 1998 Ordinance Bonds – Additional Conditions" and may also mean, if appropriate, a subseries of any such issue if, for any reason, the City should determine to divide any such issue into one or more subseries of 1998 Ordinance Bonds.

"Sinking Fund" means the 1998 General Ordinance Gas Works Revenue Bond Sinking Fund established by the 1998 General Ordinance, as described below under "Sinking Fund."

"Sinking Fund Depositary" means the Fiscal Agent or any other bank, bank and trust company or trust company appointed as such by the City.

"Sinking Fund Reserve" means the Sinking Fund Reserve established by the 1998 General Ordinance, as described below under "Sinking Fund Reserve."

"Sinking Fund Reserve Requirement" means, with respect to all 1998 Ordinance Bonds secured by the Sinking Fund Reserve, an amount equal to the greatest amount of Debt Service Requirements payable in any Fiscal Year (except that such Debt Service Requirements 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 for such 1998 Ordinance Bonds), determined as of any particular date.

"Subordinate 1998 Ordinance Bonds" (Subordinate Bonds) means those 1998 Ordinance Bonds which shall be subordinate in right of payment to Senior 1998 Ordinance Bonds and as to which the coverage requirement under the Rate Covenant shall be 100%.

"Supplemental Ordinance" means an ordinance supplemental to the 1998 General Ordinance enacted pursuant to the Act and the 1998 General Ordinance by the Council of the City authorizing the issuance of a Series of 1998 Ordinance Bonds.

"Unrelated Expenses" means expenses unrelated to the supply, manufacture, storage and distribution of gas or assets related thereto.

"Variable Rate 1998 Ordinance Bond" (Variable Rate Bond) means any 1998 Ordinance Bond, the rate of interest on which is subject to change prior to maturity and cannot be determined in advance of such change.

Purpose of 1998 Ordinance Bonds

1998 Ordinance Bonds shall be issued for the purposes of (1) paying the cost of projects, as such term is defined in the Act, related to the Gas Works, (2) reimbursing any City fund from which such costs have been paid or advanced, (3) funding any such cost for which the City shall have outstanding bond anticipation notes or other obligations, (4) refunding any bonds of the City issued for the foregoing purposes under the Act, (5) refund any general obligation bonds of the City issued for the foregoing purposes, or (6) financing anything else relating to the Gas Works permitted under the Act.

The Act defines "projects" as any buildings, structures, 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 as lessor or lessee, 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 the foregoing or any undivided portion of the cost of any of the foregoing as may be designated a "project" by the City for financing purposes and in respect of which the City may reasonably be expected to receive Gas Works Revenues.

Pledge of Revenues; Grant of Security Interest; Limitation on Recourse

The City pledges, in the 1998 General Ordinance, for the security and payment of all 1998 Ordinance Bonds issued under the 1998 General Ordinance and grants a lien on and security interest in, all Gas Works Revenues, all accounts, contract rights and general intangibles representing the Gas Works Revenues and all funds and accounts established under the 1998 General Ordinance, and in each case, the proceeds of the foregoing, except as limited for a Series of 1998 Ordinance Bonds in the Supplemental Ordinance authorizing the issuance of such Series of 1998 Ordinance Bonds; provided, however, that the pledge of the 1998 General Ordinance may also be for the benefit of the provider of a Credit Facility, Qualified Swap or Exchange Agreement, 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 1998 Ordinance Bonds on an equal and ratable basis with the related Series of 1998 Ordinance Bonds, to the extent provided by any Supplemental Ordinance.

Neither the 1998 Ordinance Bonds nor the City's reimbursement or other contractual obligations with respect to 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 1998 Ordinance Bonds or the making of any payments under the 1998 General Ordinance. The 1998 Ordinance Bonds and the obligations evidenced thereby and by the foregoing agreements shall not constitute a lien on any property of the City other than the Gas Works Revenues.

Parity and Priority of 1998 Ordinance Bonds

All 1998 Ordinance Bonds issued pursuant to the 1998 General Ordinance shall be secured by the pledge of, and grant of a security interest in, the Gas Works Revenues, except as limited for a Series of 1998 Ordinance Bonds in the Supplemental Ordinance authorizing the issuance of such Series of 1998 Ordinance Bonds. Subordinate 1998 Ordinance Bonds shall be subordinate to Senior 1998 Ordinance Bonds in right of payment of principal, premium, if any, and interest. Senior 1998 Ordinance Bonds and Subordinate 1998 Ordinance Bonds shall not have any preference, priority or distinction as to lien or otherwise, except as otherwise provided in the 1998 General Ordinance or in a Supplemental Ordinance, over and other Senior 1998 Ordinance Bonds or Subordinate 1998 Ordinance Bonds, respectively.

Credit Enhancement; Exchange Agreements; Qualified Swaps

As provided by Supplemental Ordinance and subject to the requirements of the 1998 General Ordinance, the City may provide for a Credit Facility, Exchange Agreement or Qualified Swap with respect to any Series of 1998 Ordinance Bonds or portion thereof.

Order of Application of Gas Works Revenues

The 1998 General Ordinance provides that all Gas Works Revenues as and when collected in each Fiscal Year shall be applied in the following order, to the extent then payable:

First, to Net Operating Expenses then payable;

Second, to debt service on Senior 1998 Ordinance Bonds and payments (other than termination payments) due to the issuers of Qualified Swaps and Exchange Agreements related to Senior 1998 Ordinance Bonds;

Third, to payments due to issuers of Credit Facilities related to Senior 1998 Ordinance Bonds;

Fourth, to debt service on Subordinate 1998 Ordinance Bonds and payments due in respect of obligations of the Gas Works on a parity with Subordinate 1998 Ordinance Bonds (including notes issued under the Note Ordinance, or any similar ordinance, and amounts payable to the provider of a Credit Facility in respect of such notes) and payments (other than termination payments) due to the issuers of Qualified Swaps and Exchange Agreements related to Subordinate 1998 Ordinance Bonds;

Fifth, to payments due to issuers of Credit Facilities related to Subordinate 1998 Ordinance Bonds;

Sixth, to required payments of the Rebate Amount to the United States;

Seventh, to replenishment of any deficiency in the Sinking Fund Reserve;

Eighth, to payment of general obligation bonds of the City adjudged to be self-liquidating from Gas Works Revenues[†];

Ninth, to debt service on other general obligation issued for the Gas Works[†]; and

Tenth, to City Charges and any other proper purpose of the Gas Works (including any termination payments to issuers of Qualified Swaps and Exchange Agreements and fees and expenses due under Credit Facilities), except Unrelated Expenses.

The 1998 General Ordinance does not require the segregation of revenues upon collection.

Covenants

Rate Covenant

The City covenants with the Holders of all 1998 Ordinance Bonds from time to time and at the time outstanding under the 1998 General Ordinance that, so long as any such 1998 Ordinance Bonds shall remain outstanding, the City will, at a minimum, impose, charge and collect in each Fiscal Year such gas rates and charges as shall, together with all other Gas Works Revenues to be received in such Fiscal Year, equal not less than the greater of:

[†] No general obligation bonds of the City described in items *Eighth* and *Ninth* above are currently outstanding.

A. The sum of:

i. all Net Operating Expenses payable during such Fiscal Year;

ii. 150% of the amount required to pay Sinking Fund deposits required during such Fiscal Year in respect of all Outstanding Senior 1998 Ordinance Bonds;

iii. the amount required to pay Sinking Fund deposits required during such Fiscal Year in respect of all Outstanding Subordinate 1998 Ordinance Bonds and other obligations of the Gas Works on a parity with Subordinate 1998 Ordinance Bonds payable during such Fiscal Year;

iv. the amount, if any, required to be paid into the Sinking Fund Reserve during such Fiscal Year;

v. the Rebate Amount required to be paid to the United States during such Fiscal Year; and

vi. the amounts required to be paid to the issuers of Credit Facilities and the providers of Qualified Swaps and Exchange Agreements during such Fiscal Year;

OR

B*:* The sum of:

i. all Net Operating Expenses payable during such Fiscal Year;

ii. all Sinking Fund deposits required during such Fiscal Year in respect of all Outstanding 1998 Ordinance Bonds and all amounts payable in respect of obligations of the Gas Works which are on a parity with any of the 1998 Ordinance Bonds and in respect of general obligation bonds issued for improvements to the Gas Works and all amounts, if any, required during such Fiscal Year to be paid into the Sinking Fund Reserve[†];

iii. the Rebate Amount required to be paid to the United States during such Fiscal Year; and

iv. the amounts required to be paid to the issuers of Credit Facilities and the providers of Qualified Swaps and Exchange Agreements during such Fiscal Year.

For purposes of estimating Sinking Fund deposits with respect to Interim Debt and Variable Rate 1998 Ordinance Bonds, the City shall be entitled to assume that (1) Interim Debt will be amortized over a period of up to the maximum term permitted by the Act, but not 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 1998 Ordinance Bonds Outstanding under the 1998 General Ordinance and (2) Variable Rate 1998 Ordinance Bonds will bear interest at a rate equal to the average interest rate on such Variable Rate 1998 Ordinance Bonds during the period of twenty-four (24) consecutive calendar months immediately preceding the date of calculation or during such shorter period that such Variable Rate 1998 Ordinance Bonds have been Outstanding.

The Gas Commission is authorized and directed, without further authorization, to impose and charge and to collect, or cause to be collected, rents rates and charges which shall be sufficient in each Fiscal Year to comply with the Rate Covenant.[†]

[†] No general obligation bonds described in item B.ii. above are currently outstanding.

Additional Covenants

The City covenants with the Holders of all 1998 Ordinance Bonds from time to time outstanding under the 1998 General Ordinance and at the time outstanding thereunder that: (1) it will pay or cause the Fiscal Agent or any paying agent appointed by the City to pay from the Gas Works Revenues deposited in the Sinking Fund the principal of, and premium, if any, and interest on all 1998 Ordinance Bonds as the same shall become due and payable and as more particularly set forth in such 1998 Ordinance Bonds; (2) it will continuously maintain in good condition and continuously operate the Gas Works; and (3) it will not, in any Fiscal Year, pay from the Gas Works Revenues any City Charges or deposit from the Gas Works Revenues in the general sinking fund of the City any sinking fund charges in respect of general obligation bonds of the City unless, prior thereto or concurrently therewith, all sinking fund charges then payable in respect of Outstanding 1998 Ordinance Bonds shall have been deposited in the Sinking Fund, all amounts then payable in respect of obligations of the Gas Works which are on a parity with 1998 Ordinance Bonds shall have been paid, all amounts then payable to issuers of Credit Facilities and providers of Qualified Swaps and Exchange Agreements shall have been paid and all deposits then required to the Sinking Fund Reserve shall have been made.

Report Requirements

The City covenants with the Holders of all 1998 Ordinance Bonds from time to time outstanding under the 1998 General Ordinance and at the time outstanding thereunder that the City shall file with the Fiscal Agent, not later than 120 days after the close of each Fiscal Year, a report of the operation of the Gas Works that sets forth, (1) in reasonable detail, financial data concerning the Gas Works for such Fiscal Year (including a balance sheet, statements of income, equity and changes in financial condition, and an analysis of funds available to cover debt service (in each case not inconsistent with the statements of income, expenses, and other accounts of the City audited by the City Comptroller) prepared by the Manager in accordance with generally recognized municipal accounting principles consistently applied; and (2) complies with the Rate Covenant; which report is accompanied by a certificate of the Manager that the Gas Works 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 covenants and requirements of the 1998 General Ordinance and of the ordinances supplemental thereto to be performed by the City. The Fiscal Agent will keep on file a copy of each such report and its accompanying certificates for a period of ten (10) years, and will make each available to any Bondholder or his authorized representative for inspection and copying at all reasonable times.

General Obligation Bonds - Junior Lien Revenue Bonds

The City reserves the right, and nothing in the 1998 General Ordinance shall be construed to impair such right, to finance improvements to the Gas Works by the issuance of its general obligation bonds or by the issuance, under ordinances other than the 1998 General Ordinance and Supplemental Ordinances, of Gas Works obligations for the payment of which Gas Works Revenues may be pledged subject and subordinate in each Fiscal Year to the prior payment from such revenues of all principal, premium, interest and sinking fund requirements payable during such Fiscal Year under the 1998 General Ordinance.

Conditions to Issuing 1998 Ordinance Bonds

Financial Report of the Director of Finance

The City covenants with the Holders of all 1998 Ordinance Bonds from time to time and at the time outstanding under the 1998 General Ordinance that, so long as any such 1998 Ordinance Bonds shall remain outstanding, the City will not issue any 1998 Ordinance Bonds unless the CFO Financial Report (as defined below) is filed with the City Council. The CFO Financial Report may be given in reliance on an engineering report of an Independent Engineer setting forth the qualifications of the Engineer and containing:

(a) a statement that the Engineer has made an investigation of the physical properties included in the Gas Works and of the books and records of the Gas Works maintained by the City or by the Manager, as it deemed necessary; and

(b) on the basis of such investigation containing:

(i) the same matters, statements and opinion as are required to be contained in the CFO Financial Report supported by appropriate schedules and summaries;

(ii) a statement that Gas Works rents, rates and charges, on the basis of which the statements required by clause (i) are made, are currently and will be sufficient to comply with the Rate Covenant; and

(iii) a statement that, in the opinion of the Engineer, the Gas Works are in good operating condition or that adequate steps are being taken to make them so.

The "CFO Financial Report" means the financial report required by the Act to be signed by the Director of Finance and to contain (supported by appropriate schedules and summaries): (1) a brief description of the project or projects related to the Gas Works for which the 1998 Ordinance Bonds are to be issued; (2) a statement identifying the sources from which the Gas Works Revenues are to be derived; (3) a statement that, on the basis of actual, if appropriate, and estimated future annual financial operations of the Gas Works, the Gas Works will, in the opinion of the Director of Finance, yield Gas Works Revenues over the amortization period of the 1998 Ordinance Bonds sufficient to meet the payment or deposit requirements of (a) all expenses of operation, maintenance, repair and replacement of the Gas Works, (b) all reserve or special funds established under the 1998 General Ordinance, (c) the principal of and interest on all 1998 Ordinance Bonds, as the same shall become due and payable, for which Gas Works Revenues are pledged, (d) any State taxes assumed by the City to be paid on 1998 Ordinance Bonds, and (e) the surplus requirements contained in the Rate Covenant; and (4) a statement that the Gas Works Revenues upon which the statements set forth in clause (3) are based comply with the definition of "Project Revenues" contained in the Act.

Additional Conditions

Prior to the issuance of any Series of 1998 Ordinance Bonds, the Council of the City shall adopt a Supplemental Ordinance that (1) authorizes the issuance of such 1998 Ordinance Bonds; (2) specifies the aggregate principal amount or maximum aggregate principal amount of the Series to be issued; (3) states that such 1998 Ordinance Bonds are issued in respect of capital costs of a Gas Works project or projects of the City or to fund or refund bond anticipation or other obligations of the City issued in respect thereof or for the purpose of refunding debt issued for such purpose; (4) makes a finding based on the required CFO Financial Report described above that the Gas Works Revenues pledged under the 1998 General Ordinance will be sufficient to comply with the Rate Covenant and also to pay all costs, expenses and payments required to be paid therefrom and in the order and priority stated in the 1998 General Ordinance; and (5) contains the covenant that, so long as any such 1998 Ordinance Bonds shall remain unpaid, the City will make payments or cause payments to be made out of the Sinking Fund at such times and in such amounts as shall be sufficient for the payment of the interest thereon and principal thereof when due (as required by Article IX, Section 10 of the Constitution of the Commonwealth).

Prior to the issuance of any 1998 Ordinance Bonds, the Director of Finance shall file with the Fiscal Agent a transcript of the proceedings authorizing the issuance of such 1998 Ordinance Bonds, which shall include (1) a certified copy of the 1998 General Ordinance (unless previously so filed); (2) a certified copy of the Supplemental Ordinance described in the immediately preceding paragraph; (3) an executed or certified copy of the CFO Financial Report; (4) an executed copy of an opinion of the City Solicitor to the effect that, under the 1998 General Ordinance and the related Supplemental Ordinance, the holders or registered holders of the 1998 Ordinance Bonds to be issued will have no claim upon the taxing power or general revenues of the City nor any lien upon any of the property of the City other than Gas Works Revenues pledged therefor; and (5) an opinion of Bond Counsel to the effect that (a) the Series of 1998 Ordinance Bonds has been duly issued for a permitted purpose under the Act and under the 1998 General Ordinance, (b) all conditions precedent to the issuance of the Series of 1998 Ordinance Bonds pursuant to the Act and the 1998 General Ordinance have been satisfied, (c) the Series of 1998 Ordinance Bonds has been duly authorized, executed and delivered and constitutes the legal, valid and binding obligation of the City, and (d) if the interest on the Series of 1998 Ordinance Bonds is intended to be excluded from gross income for Federal income tax purposes, interest on the Series of 1998 Ordinance Bonds will be so excluded.

The Director of Finance is also required, under the Act, prior to the issuance of any 1998 Ordinance Bonds, to file with court of common pleas of Philadelphia County items (1), (2), (3) and (4) described in the immediately preceding paragraph.

Sinking Fund

The 1998 General Ordinance establishes the Sinking Fund for the benefit and security of the Holders of all 1998 Ordinance Bonds. The Sinking Fund shall be held in the name of the City in an account or accounts separate and apart from all other accounts of the City and payments therefrom are made only as provided in the 1998 General Ordinance. The City covenants and the Director of Finance is directed to deposit in, and the 1998 General Ordinance appropriates to, the Sinking Fund from the Gas Works Revenues in each Fiscal Year such amounts as will, together with interest and profits earned and to be earned on investments held in the Sinking Fund, be sufficient to accumulate therein (exclusive of the amount in the Sinking Fund Reserve), on or before each interest and principal payment date of the 1998 Ordinance Bonds, the amounts required to pay the principal of and the interest on the 1998 Ordinance Bonds then becoming due and payable. Payments into the Sinking Fund shall be scheduled at such times and in such amounts in relation to the receipt of revenues and the operation and maintenance requirements of the Gas Works as the Director of Finance shall determine.

The Sinking Fund Depositary shall, on direction of the Director of Finance, or if for any reason he should fail to give such direction, on the direction of the Fiscal Agent, liquidate investments, if necessary, and pay over from the Sinking Fund in cash to the Fiscal Agent not later than the due date thereof the full amount of the principal, interest on, and premium, if any, payable upon redemption of, 1998 Ordinance Bonds. Any excess moneys in the Sinking Fund, including any excess amount in the Sinking Fund Reserve, shall be transferred to the operating accounts of the Gas Works.

The Sinking Fund shall be a consolidated fund for the equal and proportionate benefit of the Holders of all 1998 Ordinance Bonds from time to time Outstanding and may be invested and reinvested on a consolidated basis. The principal of and interest on and profits (and losses if any) realized on investments in the Sinking Fund are allocated pro rata for the Series of 1998 Ordinance Bonds or the specific 1998 Ordinance Bonds in respect of which such investments were made without distinction or priority, but moneys (and the investments thereof) specifically deposited for the payment of any particular installment of principal, interest (including capitalized interest) or premium in respect of particular 1998 Ordinance Bonds shall be held and applied exclusively to the payment of such particular principal, interest or premium.

Sinking Fund Reserve

The Sinking Fund Reserve is established as a separate account in the Sinking Fund and shall be held by the Sinking Fund Depositary as part of the Sinking Fund, but for which a separate account shall be maintained. Unless otherwise provided in the applicable Supplemental Ordinance, the City shall, under direction of the Director of Finance, deposit in the Sinking Fund Reserve from the proceeds of sale of each Series of 1998 Ordinance Bonds issued under the 1998 General Ordinance and/or Gas Works Revenues an amount which, together with other amounts in the Sinking Fund Reserve, will cause the amount in the Sinking Fund Reserve to equal the Sinking Fund Reserve Requirement. The money and investments (valued at market) in the Sinking Fund Reserve and amounts which can be drawn under Credit Facilities held for the Sinking Fund Reserve shall be held and maintained in an amount equal to the Sinking Fund Reserve Requirement.

In lieu of a deposit to the Sinking Fund Reserve or in substitution for amounts in the Sinking Fund Reserve, the City may provide one or more letters of credit or other Credit Facilities in the same aggregate amount issued by a provider or providers whose credit facilities are such that bonds secured by such credit facilities are rated in one of the three highest rating categories by Moody's or S&P, provided that (1) in the case of a substitution for moneys in the Sinking Fund Reserve, an opinion of Bond Counsel is delivered to the Fiscal

Agent that such substitution will not adversely affect the exclusion from gross income for Federal income tax purposes of interest on the 1998 Ordinance Bonds the interest on which is intended to be so excluded, (2) each such Credit Facility permits the Fiscal Agent to make a draw thereon up to the principal amount thereof if the Sinking Fund Reserve is needed to cover a shortfall in the Sinking Fund and other moneys in the Sinking Fund Reserve are insufficient, and (3) each such Credit Facility provides that a draw will be made thereon to replenish the Sinking Fund Reserve on the expiration thereof unless the City has otherwise made such deposit to the Sinking Fund Reserve or has obtained another Credit Facility meeting the above requirements.

If, at any time and for any reason, the moneys in the Sinking Fund, other than in the Sinking Fund Reserve, shall be insufficient to pay as and when due, the principal of, and premium, if any, and interest on, any 1998 Ordinance Bond or Bonds secured by the Sinking Fund Reserve, the Sinking Fund Depositary is authorized and directed by the 1998 General Ordinance to withdraw from the Sinking Fund Reserve and to draw on Credit Facilities held for the Sinking Fund Reserve and pay over to the Fiscal Agent the amount of such deficiency. If by reason of such withdrawal (including draws on any Credit Facilities held to satisfy the Sinking Fund Reserve Requirement) or for any other reason there shall be a deficiency in the Sinking Fund Reserve, the City covenants in the 1998 General Ordinance to restore such deficiency (either by a deposit of funds or the reinstatement of the cash limits of Credit Facilities) within twelve months. The Sinking Fund Reserve shall be valued by the Sinking Fund Depositary promptly after any withdrawal from the Sinking Fund Reserve or any other event indicating a possible deficiency in the Sinking Fund Reserve and on August 31 of each Fiscal Year.

Investment of Funds

The moneys on deposit in the funds and accounts established under the 1998 General Ordinance, to the extent not currently required, shall be invested and secured as required by the Act, all at the direction and under the management of the Director of Finance. All moneys deposited in any fund or account established under the 1998 General Ordinance or any Supplemental Ordinance may be invested by the Fiscal Agent, at the direction of the Director of Finance, in any investments then permitted by law, provided that any investments with respect to amounts on deposit in the funds and accounts established under the 1998 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. Investment earnings shall be included in Gas Works Revenues and, to the extent not require to be retained in the fund or account to which such earnings related, shall be transferred to the operating accounts of the Gas Works.

Defaults and Remedies

Defaults and Statutory Remedies

If the City shall fail or neglect to pay or to cause to be paid the principal of, redemption premium, if any, or the interest on any 1998 Ordinance Bond, 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 to the provider of a Credit Facility, a Qualified Swap or an Exchange Agreement provided with respect to the 1998 Ordinance Bonds and such provider gives the Fiscal Agent written notice of such failure or neglect, or if the City shall fail to comply with any provision of the 1998 Ordinance Bonds or with any covenant of the City contained in the 1998 General Ordinance, then, under and subject to the terms and conditions stated in the Act, the Holder or Holders of any 1998 Ordinance Bond or 1998 Ordinance Bonds shall be entitled to all of the rights and remedies provided in the Act, which are as follows:

(1) if the City fails or neglects to pay or cause to be paid the principal of or the interest on any 1998 Ordinance Bonds as the same shall become due, whether at the stated maturity or upon call for prior redemption, the right to recover the amount due in an action in assumpsit in the court of common pleas of Philadelphia County;

(2) if the City defaults in the payment of the principal or of the interest on any Series of 1998 Ordinance Bonds after the same shall become due, whether at the stated maturity or upon call for prior redemption, and such default continues for 30 days, or if the City fails to comply with any provision of the 1998

Ordinance Bonds or the 1998 General Ordinance, the right, at the request of the Holders of 25% in aggregate principal amount of the 1998 Ordinance Bonds of such Series then outstanding, to appoint a trustee (who may be the Sinking Fund Depositary) to represent the Holders of all such 1998 Ordinance Bonds; and

(3) the right to instruct an appointed trustee, upon the written request of the Holders of 25% in principal amount of such 1998 Ordinance Bonds then outstanding and after furnishing indemnity satisfactory to such trustee, to take one or more of the following actions:

> (a) by mandamus or other suit, action or proceeding at law or in equity enforce all rights of the Holders of the 1998 Ordinance Bonds, including the right to require the City to impose and collect rents, rates, tolls and charges for the use of the Gas Works, or to require the City to carry out any other agreements with the Holders of such 1998 Ordinance Bonds;
>
> (b) bring suit on the 1998 Ordinance Bonds without the necessity for producing the bonds, and with the same effect as a suit by any Holder of the 1998 Ordinance Bonds;
>
> (c) bring suit in equity to require the City to account as if it were a trustee of an express trust for the Holders of such 1998 Ordinance Bonds, for any Gas Works Revenues received and/or to enjoin any acts or things which may be unlawful or in violation of the rights of the Holders of any 1998 Ordinance Bonds; and
>
> (d) after 30 days prior written notice to the City, declare the unpaid principal of all 1998 Ordinance Bonds to be immediately due and payable, together with interest thereon at the rates stated in the 1998 Ordinance Bonds until final payment, and, if all defaults shall be made good, to annul such declaration and its consequences.

Notwithstanding the foregoing and in accordance with the 1998 General Ordinance, the remedy described in paragraph 3(d) above may be exercised only upon the failure of the City to pay, when due, principal and redemption price of (including principal due as a result of a scheduled mandatory redemption) and interest on a Series of 1998 Ordinance Bonds. Upon the occurrence of an event of default described above, the Fiscal Agent shall, within thirty (30) days, give written notice thereof by first class mail to all Bondholders.

If and when a trustee takes any of the actions described in paragraph (3) above, individual Bondholders will be precluded from taking similar action, regardless of whether such action was previously or subsequently initiated. The court, in cases of extreme hardship, may provide for the payment of sums levied in five or less annual installments with interest at a rate sufficient to cover the interest accruing on the 1998 Ordinance Bonds. In any suit, action or proceeding by or on behalf of Holders of 1998 Ordinance Bonds, the fees and expenses of a trustee, including operating costs of the Gas Works and reasonable counsel fees, shall constitute taxable costs, and all such costs and disbursements allowed by the court shall be deemed additional principal due on the 1998 Ordinance Bonds and shall be paid in full from any recovery prior to any distribution to the Holders of the 1998 Ordinance Bonds.

Remedies Not Exclusive; Effect of Delay on Exercise of Remedies

No remedy in the 1998 General Ordinance or in the Act conferred upon or reserved to the trustee, if one be appointed, or to the Holder of any 1998 Ordinance Bonds is intended to be exclusive (except as specifically provided in the Act, as described above under “Defaults and Statutory Remedies”) 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 1998 General Ordinance or now or existing at law or in equity or by statute. No delay or omission of the trustee, if one be appointed, or of any Holder of any 1998 Ordinance Bond 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 given by the 1998 General Ordinance, by the Act or otherwise may be exercised from time to time as often as may be deemed expedient.

Remedies to be Enforced Only Against Pledged Revenues

Any decree or judgment for the payment of money against the City by reason of default under the 1998 General Ordinance shall be enforceable only against the Gas Works Revenues, amounts in the Sinking Fund Reserve and other amounts which may be specifically pledged therefor and investments thereof, and no decree or judgment against the City upon any action brought under the 1998 General Ordinance shall order, or be construed to permit the occupation, attachment, seizure or sale upon execution of any other property of the City.

Fiscal Agent

Such state or federally chartered bank, bank and trust company or trust company as may from time to time be appointed by the City in accordance with law, shall act as Fiscal Agent in respect of all 1998 Ordinance Bonds or in respect of any particular Series of 1998 Ordinance Bonds. The Fiscal Agent also acts as Sinking Fund Depositary of the Sinking Fund and as paying agent and registrar of the 1998 Ordinance Bonds in respect of which it is Fiscal Agent, unless others are appointed in such capacity by the City. The Fiscal Agent is the representative of the Holders of the 1998 Ordinance Bonds for the purpose of executing and filing financing statements to perfect the security interest granted in the 1998 General Ordinance under the Pennsylvania Uniform Commercial Code. Nothing in the 1998 General Ordinance shall be construed to prevent the City from engaging other or additional Sinking Fund Depositories, paying agents or registrars of the 1998 Ordinance Bonds or any Series thereof.[†]

Permitted Securitization of Gas Works Revenues

Notwithstanding the requirements of the Rate Covenant described under "Covenants – Rate Covenant" above and the pledge described above under "Pledge of Revenues; Grant of Security Interest; Limitation on Recourse," the City may, at such time as there are no bonds outstanding under the 1975 General Ordinance, pursuant to a Supplemental Ordinance, securitize and sell that portion of the Gas Works rents, rates and charges which relate to assets which are designated as non-performing by the Gas Commission[††] and as to which the Gas Commission[††] has designated specific rents, rates or charges (such rents, rates and charges are excluded from the definition of Gas Works Revenues); provided that prior to any such securitization and sale the City delivers to the Fiscal Agent (1) an Engineer's report including a statement that, for the three year period following such securitization and sale, the Gas Works rents, rates and charges (excluding those securitized and sold) are currently and will be sufficient to comply with the Rate Covenant applied as if the percentage in subsection A.iii under the heading "Covenants – Rate Covenant" were 175% rather than 150% and (2) an opinion of Bond Counsel that such securitization and sale will not adversely affect the exclusion from gross income for Federal income tax purposes of interest on any Outstanding 1998 Ordinance Bonds the interest on which is intended to be so excluded. Proceeds received from any such securitization and sale shall be excluded from Gas Works Revenues in all calculations relating to the Rate Covenant and, notwithstanding any provision of the 1998 General Ordinance to the contrary, may be used to redeem or refund obligations issued to finance the related assets designated as non-performing.

Amendments and Modifications

In addition to the adoption of Supplemental Ordinances supplementing or amending the 1998 General Ordinance in connection with the issuance of successive Series of 1998 Ordinance Bonds, the 1998 General Ordinance and any Supplemental Ordinance may be further supplemented, modified or amended: (a) to cure any ambiguity, formal defect or omission therein; (b) 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; (c) 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

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† Under the terms of the Fiscal Agent Agreement, made as of January 1, 1993, by and between the City and the predecessor to the current Fiscal Agent, as amended and supplemented, the Fiscal Agent is the secured party with the right to enforce the City pledge of Gas Work Revenues on behalf of the holders of 1998 Ordinance Bonds, the issuers of any Credit Facilities and the providers of any Qualified Swaps and Exchange Agreements.

†† The PUC now has jurisdiction to make the designations described under this subheading.

conferred; (d) to incorporate modifications requested by any Rating Agency to obtain or maintain a credit rating on any Series of 1998 Ordinance Bonds; (e) 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 1998 Ordinance Bonds, but no amendment or modification shall be made with respect to any Outstanding 1998 Ordinance 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 1998 Ordinance Bonds; and (f) except as aforesaid, in such other respect as may be authorized in writing by the Holders of a majority in principal amount (using Accreted Value in the case of Capital Appreciation 1998 Ordinance Bonds) of the 1998 Ordinance Bonds Outstanding and affected. The written authorization of Bondholders of any supplement to or modification or amendment of the 1998 General Ordinance or any Supplemental Ordinance need not approve the particular form of any proposed supplement, modification or amendment but only the substance thereof.

Deposit of Funds for Payment of 1998 Ordinance Bonds

When interest on, and principal or redemption price (as the case may be) of, all 1998 Ordinance Bonds issued under the 1998 General Ordinance, and all amounts owed under any Credit Facility, Qualified Swap and Exchange Agreement entered into under the 1998 General Ordinance (other than termination payments), have been paid, or there shall have been deposited with the Fiscal Agent 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 1998 Ordinance 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 1998 General Ordinance (other than termination payments), the pledge and grant of security interest in the Gas Works Revenues made under the 1998 General Ordinance shall cease and terminate, and the Fiscal Agent and any other depository of funds and accounts established under the 1998 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 funds and accounts established thereunder.

If the City deposits with the Fiscal Agent moneys or Qualified Escrow Securities sufficient to pay the principal or redemption price of any particular 1998 Ordinance Bond or 1998 Ordinance 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 such 1998 Ordinance Bond or 1998 Ordinance Bonds shall cease to accrue on the due date and all liability of the City with respect to such 1998 Ordinance Bond or 1998 Ordinance Bonds shall likewise cease, except as provided in the following paragraph. From and after such deposit, such 1998 Ordinance Bond or 1998 Ordinance Bonds shall be deemed not to be Outstanding under the 1998 General Ordinance and the Holder or Holders thereof shall have recourse solely and exclusively to the funds so deposited for any claims of whatsoever nature with respect to such 1998 Ordinance Bond or 1998 Ordinance Bonds, and the Fiscal Agent shall hold such funds in trust for the Holder or Holders of such 1998 Ordinance Bond or 1998 Ordinance Bonds.

Moneys deposited with the Fiscal Agent pursuant to the preceding paragraphs which remain unclaimed two (2) 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 (the Fiscal Agent having no responsibility to independently investigate) in default with respect to any covenant in the 1998 General Ordinance or the 1998 Ordinance Bonds, be paid to the City, and the Holders of the 1998 Ordinance Bond 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 shall, at the expense of the City, publish in a newspaper of general circulation published in the City, a notice that said moneys remain unclaimed and that, after a date named in said notice, which date shall not be less than thirty (30) days after the date of publication of such notice, the balance of such moneys then unclaimed will be paid to the City.

Ordinances are Contracts with Bondholders

The 1998 General Ordinance and Supplemental Ordinances adopted pursuant thereto are contracts with the Holders of all 1998 Ordinance Bonds from time to time Outstanding under the 1998 General Ordinance and are enforceable in accordance with the provisions of the 1998 General Ordinance and the laws of the Commonwealth of Pennsylvania.

Parties Interested in the 1998 General Ordinance

Nothing in the 1998 General Ordinance expressed or implied is intended or shall be construed to confer upon, or to give to, any person or entity, other than the City, the Holders of 1998 Ordinance Bonds, the Fiscal Agent, and each provider of a Credit Facility, Qualified Swap or Exchange Agreement, any right, remedy or claim under or by reason of the 1998 General Ordinance or any covenants, condition or stipulation therefor; and all the covenants, stipulations, promises and agreements in the 1998 General Ordinance by and on behalf of the City shall be for the sole and exclusive benefit of the City, the Fiscal Agent, the Holders of 1998 Ordinance Bonds and each provider of a Credit Facility, Qualified Swap or Exchange Agreement.

Closure of the 1975 General Ordinance

After the adoption of the 1998 General Ordinance, the City shall not issue any bonds under the 1975 General Ordinance except to refund bonds issued under the 1975 General Ordinance or to replace bonds issued thereunder which have been mutilated, destroyed, lost or stolen as provided therein or in substitution for bonds issued thereunder upon transfer or exchange as provided therein.

Severability

In case any one or more of the provisions contained in the 1998 General Ordinance or in any 1998 Ordinance Bond issued pursuant to the 1998 General Ordinance shall for any reason to be held to be invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect any other provisions in the 1998 General Ordinance or said 1998 Ordinance Bonds, and the 1998 General Ordinance or said 1998 Ordinance Bonds shall be construed and enforced as if such invalid, illegal or unenforceable provisions had never been contained therein.

APPENDIX F

FORM OF CONTINUING DISCLOSURE AGREEMENT

CONTINUING DISCLOSURE AGREEMENT

This Continuing Disclosure Agreement (this "Agreement") dated August 16, 2017, is by and between **THE CITY OF PHILADELPHIA, PENNSYLVANIA** (the "City") and **DIGITAL ASSURANCE CERTIFICATION, L.L.C.,** as dissemination agent (the "Dissemination Agent") in connection with the issuance and sale by the City of $273,140,000 aggregate principal amount of its Gas Works Revenue Bonds, Fifteenth Series (1998 General Ordinance) (the "Bonds"). The Bonds are being issued pursuant to the Act, the General Ordinance and the Bond Authorization. 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 11 of the Bond Authorization solely 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 PGW Fiscal Year ending August 31, 2017, the Disclosure Representative shall deliver the Annual Financial Information to the Dissemination Agent for filing by the Dissemination Agent (on behalf of the City) with EMMA (as defined herein) no later than April 26, 2018, and no later than each succeeding April 26th for each preceding fiscal year thereafter (the "Annual Filing Date"). The Dissemination Agent shall promptly upon receipt thereof file the Annual Financial Information with EMMA.

(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.

(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 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 EMMA 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 system ("EMMA"), which is currently accessible at the following web address: 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 Disclosure Representative shall file promptly a notification on EMMA, through the Dissemination Agent, of any change in the City Fiscal Year or the PGW 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 a copy of the amendment, accompanied by copies of such opinion(s), 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 a copy of the amendment, accompanied by a copy of such opinion, to the Dissemination Agent. Such amendment shall be filed promptly 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 a copy of the amendment, accompanied by a copy of such opinion, to the Dissemination Agent. Such amendment shall be filed promptly 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 hereof to the accounting principles to be followed by the City in preparing the financial statements of the City or PGW in preparing the financial statements of PGW, 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. <u>Benefit; Third-Party Beneficiaries; Enforcement</u>.

(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, approved October 18, 1972 (Act No. 234, 53 P.S. §§15901 to 15924), as amended.

(2) "Annual Financial Information" means, collectively:

(i) The Comprehensive Annual Financial Report of the Philadelphia Gas Works ("PGW's CAFR") for the most recently ended PGW Fiscal Year, which contains the Audited Financial Statements, and if PGW's CAFR is not otherwise prepared, the Audited Financial Statements;

(ii) the City's Comprehensive Annual Financial Report (the "City's CAFR") for the most recently ended City Fiscal Year;

(iii) financial information or operating data with respect to PGW and the City, substantially similar to the type set forth in (A) Tables 1 through 14 of the Official Statement (except Table 3 and excluding any portions of tables not reflective of a full fiscal year) and (B) Tables 1 through 52 in Appendix C attached to the Official Statement (except Tables 19 and 48); and

(iv) 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; provided however if Audited Financial Statements are not available by the Annual Filing Date, then the City shall cause Unaudited Financial Statements to be included in the Annual Financial Information, and subsequently file Audited Financial Statements as soon as they become available.

Annual Financial Information shall be delivered at least annually pursuant to Section l.2 (a) hereof. In connection with Section 4.1(2), it is the City's intention to satisfy all or a portion of the obligations set forth therein by submitting to EMMA: (x) PGW's CAFR, (y) the City's CAFR, and (z) to the extent not otherwise updated in either PGW's CAFR or the City's CAFR, (1) an official statement or comparable offering document, or an appendix thereto, that includes annual updates to the Tables specified in clause 4.1(2)(iii) herein or (2) if the City does not have such an official statement, offering document or appendix prepared, then annual updates to the Tables specified in clause 4.1(2)(iii) herein. If at any time the City deletes, for purposes of a then-current offering document or appendix thereto, certain financial information or operating data from such then-current offering document or appendix that is included in one of the Tables specified in clause 4.1(2)(iii) above, such deleted information will be submitted separately from the updated offering document or appendix.

The descriptions contained in this Section 4.1(2) 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 PGW, audited by KPMG LLP, or such other 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 Section 3.2 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 the financial statements of the City or PGW. The notice of any such modification required by Section 3.2 hereof shall include a reference to the specific federal or Commonwealth law a regulation describing such accounting principles, or other description thereof.

(4) "Bond Authorization" means the Bond Authorization for the Bonds adopted by the Bond Committee of the City (consisting of the Mayor, the City Solicitor and the City Controller and acting by a majority thereof) on August 9, 2017.

(5) "City Fiscal Year" means the fiscal year of the City, currently beginning on July 1 and ending on June 30, as may be changed as contemplated under Section 2.5 hereof.

(6) "Commonwealth" means the Commonwealth of Pennsylvania.

(7) "Counsel" means any nationally recognized bond counsel or counsel expert in federal securities laws.

(8) "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.

(9) “Fiscal Agent” means U.S. Bank National Association, as fiscal agent and registrar for the Bonds,

(10) "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.

(11) "General Ordinance" means the City's General Gas Works Revenue Bond Ordinance of 1998, as amended and supplemented, including as supplemented by the Thirteenth Supplemental Ordinance adopted by City Council on March 26, 2015 and signed by the Mayor on March 26, 2015, and as supplemented by the Fourteenth Supplemental Ordinance adopted by the City Council on June 15, 2017 and signed by the Mayor on June 21, 2017.

(12) "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.

(13) "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 (this event is considered to occur when any of the following occur: the appointment of a receiver, fiscal agent or similar officer for the City in a proceeding under the U.S. Bankruptcy Code or in any other proceeding under state or federal law in which a court or governmental authority has assumed jurisdiction over substantially all of the assets or business of the City, or if such jurisdiction has been assumed by leaving the existing governing body and officials or officers in possession but subject to the supervision and orders of a court or governmental authority, or the entry of an order confirming a plan of reorganization, arrangement or liquidation by a court or governmental authority having supervision or jurisdiction over substantially all of the assets or business 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.

(14) "Official Statement" means the Official Statement dated August 9 2017 of the City relating to the Bonds.

(15) "PGW" means the Philadelphia Gas Works of the City of Philadelphia.

(16) "PGW Fiscal Year" means the fiscal year of PGW, currently beginning on September 1 and ending on August 31, as may be changed as contemplated under Section 2.5 hereof.

(17) "Registered Owner" or "Registered Owners" means the person or persons in whose name a Bond is registered on the books of the City maintained by the Fiscal Agent in accordance with the General Ordinance and the Bonds. 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; provided, however, 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.

(18) "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.

(19) "SEC" means the United States Securities and Exchange Commission.

(20) "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.

(21) "Unaudited Financial Statements" means the same as Audited Financial Statements, except that they shall not have been audited.

(22) "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.

[SIGNATURE PAGE TO FOLLOW]

IN WITNESS WHEREOF, THE CITY OF PHILADELPHIA, PENNSYLVANIA, has caused this Continuing 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: Jenny Emami
Title: Client Service Manager Deputy Director

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APPENDIX G

BOOK-ENTRY ONLY SYSTEM

The information set forth herein concerning The Depository Trust Company, New York, New York ("DTC") and the book-entry system described below has been extracted from materials provided by DTC for such purpose, is not guaranteed as to accuracy or completeness and is not to be construed as a representation by the City, PGW or the Underwriters. The websites referenced below are included for reference only and the information contained therein is not incorporated by reference in this Official Statement.

DTC, New York, New York, will act as securities depository for the Bonds. The Bonds will be issued as fully-registered Bonds 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 certificate will be issued for each maturity of the Bonds, each in the aggregate principal amount of such maturity, 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 3.5 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 S&P 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.

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. Beneficial Owners of Bonds may wish to take certain steps to augment the transmission to them of notices of significant events with respect to the Bonds, such as redemptions, tenders, defaults, and proposed amendments to the Bond documents. For example, Beneficial Owners of Bonds may wish to ascertain that the nominee holding the Bonds for their benefit has agreed to obtain and transmit notices to Beneficial Owners. In the alternative, Beneficial Owners may wish to provide their names and addresses to the registrar and request that copies of notices be provided directly to them.

Redemption notices shall be sent to DTC. If less than all of the Bonds within a maturity are being redeemed, DTC's practice is to determine by lot the amount of the interest of each Direct Participant of 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 an 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).

Redemption proceeds, payments of principal, premium, if any, and interest 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 Bonds 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 City or the Fiscal Agent, subject to any statutory or regulatory requirements as may be in effect from time to time. Payments of redemption proceeds, principal, premium, if any, and interest on the Bonds to Cede & Co. (or such other nominee as may be requested by an authorized representative of DTC) is the responsibility of 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 information in this section concerning DTC and DTC's book-entry system has been obtained from DTC, and the City takes no responsibility for the accuracy thereof.

THE CITY, PGW AND THE FISCAL AGENT CANNOT AND DO NOT GIVE ANY ASSURANCES THAT DTC, THE DIRECT PARTICIPANTS OR THE INDIRECT PARTICIPANTS WILL DISTRIBUTE TO THE BENEFICIAL OWNERS OF THE BONDS (1) PAYMENTS OF PRINCIPAL OR INTEREST ON THE BONDS, (2) CONFIRMATION OF BENEFICIAL OWNERSHIP INTEREST IN THE BONDS, OR (3) NOTICES SENT TO DTC OR CEDE & CO., ITS NOMINEE, AS THE REGISTERED OWNER OF THE BONDS, OR THAT THEY WILL DO SO ON A TIMELY BASIS, OR THAT DTC, DIRECT PARTICIPANTS OR INDIRECT PARTICIPANTS WILL SERVE AND ACT IN THE MANNER DESCRIBED IN THIS OFFICIAL STATEMENT. THE CURRENT "RULES" APPLICABLE TO DTC ARE ON FILE WITH THE SECURITIES AND EXCHANGE COMMISSION, AND THE CURRENT "PROCEDURES" OF DTC TO BE FOLLOWED IN DEALING WITH DIRECT PARTICIPANTS ARE ON FILE WITH DTC.

NEITHER THE CITY, PGW NOR THE FISCAL AGENT SHALL HAVE ANY RESPONSIBILITY OR OBLIGATION TO ANY DIRECT PARTICIPANT, INDIRECT PARTICIPANT OR ANY BENEFICIAL OWNER OR ANY OTHER PERSON NOT SHOWN ON THE REGISTRATION BOOKS OF THE FISCAL

AGENT AS BEING A BONDHOLDER WITH RESPECT TO (1) THE BONDS; (2) THE ACCURACY OF ANY RECORDS MAINTAINED BY DTC OR ANY DIRECT PARTICIPANT OR INDIRECT PARTICIPANT; (3) THE PAYMENT BY DTC OR ANY DIRECT PARTICIPANT OR INDIRECT PARTICIPANT OF ANY AMOUNT DUE TO ANY BENEFICIAL OWNER IN RESPECT OF THE PRINCIPAL OR INTEREST ON THE BONDS; (4) THE DELIVERY BY DTC OR ANY DIRECT PARTICIPANT OR INDIRECT PARTICIPANT OF ANY NOTICE TO ANY BENEFICIAL OWNER WHICH IS REQUIRED OR PERMITTED UNDER THE TERMS OF THE APPLICABLE GENERAL ORDINANCE TO BE GIVEN TO BONDHOLDERS; OR (5) ANY CONSENT GIVEN OR OTHER ACTION TAKEN BY DTC AS REGISTERED OWNER OF THE BONDS.

The City may determine to discontinue use of the system of book-entry transfers through DTC (or a successor securities depository). In that event, bond certificates will be prepared and delivered as described in the applicable Supplemental Ordinance.

So long as Cede & Co. is the registered owner of the Bonds as nominee of DTC, references herein to the Holders, holders, owners or registered owners of such Bonds shall mean Cede & Co. and shall not mean the Beneficial Owners of the Bonds.

In the event that the Book-Entry Only System is discontinued and the Beneficial Owners become registered owners of the Bonds, the following provisions applicable to registered owners would apply: (i) Bonds may be exchanged for an equal aggregate principal amount of Bonds of the same maturity and series in other authorized denominations, upon surrender thereof at the designated corporate trust office of the Fiscal Agent; (ii) the transfer of any Bonds may be registered on the books maintained by the Fiscal Agent for such purpose only upon the surrender thereof to the Fiscal Agent together with a duly executed assignment in form satisfactory to the City and the Fiscal Agent; and (iii) for every exchange or registration of transfer of Bonds, the Fiscal Agent may impose a charge sufficient to reimburse it for any tax, fee or governmental charge required to be paid with respect to such exchange or registration of transfer of the Bonds.

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APPENDIX H

PROPOSED FORM OF OPINIONS OF CO-BOND COUNSEL

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August __, 2017

Re: $273,140,000, Aggregate Principal Amount, City of Philadelphia, Pennsylvania
Gas Works Revenue Bonds, Fifteenth Series (1998 General Ordinance)

To the Purchasers of the Within-Described Bonds:

We have acted as Co-Bond Counsel to the City of Philadelphia, Pennsylvania ("City"), in connection with the authorization and issuance by the City of its Gas Works Revenue Bonds, Fifteenth Series (1998 General Ordinance) ("Bonds").

The Bonds are issued under and pursuant to provisions of: (i) the Constitution of the Commonwealth of Pennsylvania ("Commonwealth"); (ii) the First Class City Revenue Bond Act, approved October 18, 1972 (P.L. 955), Act No. 234 ("Act"); (iii) the City of Philadelphia General Gas Works Revenue Bond Ordinance of 1998, as amended and supplemented prior to March 26, 2015 ("Original Ordinance"); (iv) the Thirteenth Supplemental Ordinance to the 1998 General Ordinance (Bill No. 150159), enacted by the Council of the City ("City Council") on March 26, 2015 and approved by the Mayor of the City ("Mayor") on March 26, 2015 ("Thirteenth Supplemental Ordinance"); (v) the Fourteenth Supplemental Ordinance to the 1998 General Ordinance (Bill No. 170432) enacted by City Council on June 15, 2017 and approved by the Mayor on June 21, 2017 ("Fourteenth Supplemental Ordinance" and, together with the Original Ordinance and the Thirteenth Supplemental Ordinance, the "1998 General Ordinance"); and (vi) a Bond Authorization of the Bond Committee of the City, comprised of the Mayor, the City Controller and the City Solicitor, and acting by at least a majority thereof, dated August 9, 2017 ("Bond Authorization"). Capitalized terms not otherwise defined herein shall have the meanings ascribed to such terms in the 1998 General Ordinance.

The Bonds are being issued by the City to provide funds, together with other available moneys, to (i) finance a portion of the Philadelphia Gas Works ongoing capital improvement program; (ii) redeem the City's outstanding Gas Works Revenue Capital Project Commercial Paper Notes; (iii) refund a portion of certain Gas Works Revenue Bonds currently outstanding under the 1998 General Ordinance; (iv) make a deposit to the Sinking Fund Reserve held under the 1998 General Ordinance; and (v) pay the costs of issuance of the Bonds.

The Bonds, together with all Senior Bonds presently Outstanding under the 1998 General Ordinance and any parity obligations hereafter issued under the 1998 General Ordinance (collectively, the "Senior Bonds"), are equally and ratably payable solely from and secured solely by a lien on and security interest in all Gas Works Revenues, all accounts, contract rights and general intangibles representing Gas Works Revenues, and the Sinking Fund, including the Sinking Fund Reserve established under the 1998 General Ordinance.

As Co-Bond Counsel, we have examined: (i) the relevant provisions of the Constitution of the Commonwealth; (ii) the Act; (iii) the Original Ordinance; (iv) the Thirteenth Supplemental Ordinance; (v) the

Fourteenth Supplemental Ordinance; (vi) the Bond Authorization; and (vii) certain statements, certifications, affidavits and other documents and matters of law as we have deemed necessary to enable us to render the opinion set forth below, including, without limitation, a certificate of officials of the City and of the Gas Works having responsibility for issuing the Bonds ("Tax Compliance Certificate"), intended to satisfy certain provisions of the Internal Revenue Code of 1986, as amended ("Code"), and applicable Treasury Regulations, and the other documents and instruments listed on the Index of Closing Documents relating to the Bonds dated the date hereof. We have also examined the fully executed and authenticated Bonds.

In rendering the opinion set forth below, we have relied upon the genuineness, accuracy and completeness of all of the documents, records, certifications and other instruments examined including, without limitation, the authenticity of all signatures appearing thereon. We have also relied, in the opinion set forth below, upon the opinion of the City Solicitor as to all matters of fact and law set forth therein. We have not made any independent examination in rendering this opinion other than the examination referred to above. Our opinion is therefore qualified in all respects by the scope of that examination.

Except with respect to Paragraph 5 below, our opinion is given only with respect to the internal laws of the Commonwealth of Pennsylvania as enacted and construed on the date hereof.

Based upon and subject to the foregoing and subject to the qualifications hereinafter set forth, we are of the opinion that:

1. The City is authorized under the provisions of the Constitution and laws of the Commonwealth to perform its obligations under the Original Ordinance, the Thirteenth Supplemental Ordinance, the Fourteenth Supplemental Ordinance and the Bonds and to issue the Bonds for the purposes set forth in the Thirteenth Supplemental Ordinance and the Fourteenth Supplemental Ordinance.

2. The City has duly and properly authorized the issuance of the Bonds.

3. The Bonds have been duly executed, authenticated, issued and delivered, and are the legal, valid and binding obligations of the City, enforceable in accordance with the terms thereof, except as enforcement may be affected by bankruptcy, insolvency, reorganization, moratorium, fraudulent transfer or other similar laws or legal or equitable principles affecting the enforcement of creditors' rights.

4. Under the laws of the Commonwealth as presently enacted and construed, interest on the Bonds is exempt from Pennsylvania personal income tax and Pennsylvania corporate net income tax and the Bonds are exempt from personal property taxes in Pennsylvania; however, any profits, gains or income derived from the sale, exchange or other disposition of the Bonds will be subject to Commonwealth taxes and local taxes within the Commonwealth.

5. Under existing statutes, regulations, rulings and court decisions, interest on the Bonds will not be includible in the gross income of the holders thereof for federal income tax purposes, assuming continuing compliance by the City with the requirements of the Code. Interest on the Bonds will not be a specific preference item for purposes of computing the federal alternative minimum tax ("AMT"); however, interest on the Bonds held by corporations is included in the computation of "adjusted current earnings," a portion of which is taken into account in determining the AMT imposed on corporations.

In rendering this opinion, we have assumed compliance by the City with its covenants contained in the 1998 General Ordinance, the Bond Authorization and the Tax Compliance Certificate that are intended to comply with the provisions of 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 exclusion of interest on the Bonds from gross income for federal income tax purposes. These covenants relate to, *inter alia*, the use and investment of proceeds of the Bonds and the rebate to the United States Treasury of specified arbitrage earnings, if required. Failure to comply with such covenants could result in the interest on the Bonds becoming includible in gross income for federal income tax purposes from the date of issuance of the Bonds.

We call to your attention the fact that the Bonds are special obligations of the City payable solely from and secured solely by the Gas Works Revenues and amounts in the Sinking Fund, including the Sinking Fund Reserve, established pursuant to the 1998 General Ordinance. The Bonds are not general 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 general revenues of the City or create a lien or charge against any property of the City other than Gas Works Revenues.

We express no opinion as to any matter not set forth in the numbered paragraphs herein. This opinion is given as of the date hereof and we assume no obligation to supplement this opinion to reflect changes in law that may hereafter occur or changes in facts or circumstances that may hereafter come to our attention. Without limiting the generality of the foregoing, we express no opinion herein with respect to, and assume no responsibility for, the accuracy, adequacy or completeness of the Preliminary Official Statement or Official Statement prepared in respect of the Bonds, and make no representation that we have independently verified the contents thereof.

Very truly yours,

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SEAL OF THE CITY OF PHILADELPHIA