

**NEW ISSUE – BOOK-ENTRY ONLY**

In the opinion of Bond Counsel, interest on the Bonds is not includable in gross income for purposes of federal income taxation under existing statutes, regulations, rulings and court decisions, subject to the condition described in “TAX EXEMPTION” herein and interest on the Bonds is not treated as an item of tax preference under Section 57 of the Internal Revenue Code of 1986, as amended (the “Code”) for purposes of the individual and corporate alternative minimum taxes. However, under the Code, such interest may be subject to certain other taxes affecting corporate holders of the Bonds. Under the laws of the Commonwealth of Pennsylvania, the Bonds are exempt from personal property taxes in Pennsylvania, and interest on the Bonds is exempt from Pennsylvania personal income tax and the Pennsylvania corporate net income tax. For a more complete discussion, see “TAX EXEMPTION” herein.



**\$86,105,000**  
**The City of Philadelphia, Pennsylvania**  
**Water and Wastewater Revenue Refunding Bonds,**  
**Variable Rate Series 2005B**

**Dated: Date of Delivery**

**Price: 100%**

**Due: August 1, 2018**

The City of Philadelphia, a corporation and body politic existing under the laws of the Commonwealth of Pennsylvania (the “City”), is issuing its Water and Wastewater Revenue Refunding Bonds, Variable Rate Series 2005B (the “Bonds”) pursuant to the City’s Restated General Water and Wastewater Revenue Bond Ordinance of 1989 (as may be amended or supplemented from time to time, the “General Ordinance”) for the purpose of providing funds which will be applied to refund a portion of the City’s Water and Wastewater Revenue Bonds, Series 1995 and to pay costs of issuance relating to the Bonds.

The Bonds are special obligations of the City, secured equally and ratably with (i) the City’s Water and Sewer Revenue Bonds currently outstanding in the aggregate principal amount of \$60,400,000 issued under the Prior Ordinance (as defined herein) (consisting of the City’s Water and Sewer Revenue Bonds, Fourteenth Series) which are subject to the provisions of the General Ordinance, (ii) the City’s Water and Wastewater Revenue Bonds currently outstanding in the aggregate principal amount of \$1,637,783,296 issued under the General Ordinance (as defined herein) (consisting of all or portions of the City’s Water and Wastewater Revenue Bonds, Series 1993, Series 1995, Series 1997A, Series 1997B, Series 1998, Series 1999, Series 1999A (the “1999 Pennvest Loan”), Series 2001A, Series 2001B and Series 2003), and (iii) all Water and Wastewater Revenue Bonds hereafter issued, by a pledge of and security interest in all Project Revenues (as defined herein) derived from the City’s Water and Wastewater Systems (as defined herein) and by moneys deposited in the funds and accounts (other than the Rebate Fund) established by the City under the General Ordinance (the “Water and Wastewater Funds”). Concurrently with the issuance of the Bonds, the City expects to issue its Water and Wastewater Revenue Bonds, Series 2005A, in the aggregate principal amount of \$250,000,000, pursuant to the General Ordinance.

**The Bonds are payable solely from Project Revenues and moneys deposited in the Water and Wastewater Funds. The Bonds are special obligations of the City and do not pledge the full faith, credit or taxing power of the City, or create any debt or charge against the tax or general revenues of the City, or create any lien or charge against any property of the City, other than against the Project Revenues and amounts, if any, at any time on deposit in the Water and Wastewater Funds.**

The Bonds will be issued only as fully registered bonds and, when issued, will be registered in the name of Cede & Co., as nominee of The Depository Trust Company, New York, New York (“DTC”), which will act as securities depository for the Bonds. Purchasers will not receive certificates representing their ownership interest in the Bonds purchased. Wachovia Bank, National Association, Philadelphia, Pennsylvania is the Fiscal Agent, the Tender Agent and the Escrow Agent for the Bonds. The principal or redemption price of and interest on the Bonds are payable to DTC for redistribution to its participants and in turn to the beneficial owners of the Bonds. See “THE BONDS – Book-Entry Only System” herein.

The Bonds will be adjustable rate multi-modal bonds and will be issued initially in denominations of \$100,000 or any integral multiple of \$5,000 in excess of \$100,000. The Bonds will be dated the date of delivery and initially will bear interest at the Weekly Interest Rate (as defined herein), unless otherwise converted, with interest payable semi-annually on each February 1 and August 1, commencing August 1, 2005. The Bonds are subject to mandatory tender for purchase upon, among other events, conversion from one interest rate mode to another. While bearing interest at the Weekly Interest Rate, the Bonds are subject to optional tender for purchase pursuant to the terms discussed herein upon the demand of any beneficial owner thereof at a price of 100% of the principal amount thereof plus accrued interest. If Bonds subject to optional or mandatory tender for purchase cannot be remarketed, such unremarketed Bonds are required to be purchased, subject to the satisfaction of certain conditions precedent, with funds advanced by the Liquidity Facility Provider (identified below) pursuant to the Liquidity Facility (defined below). See “THE LIQUIDITY FACILITY” herein.

**The Bonds are subject to optional and mandatory sinking fund redemption prior to their stated maturity as described herein.**

The scheduled payment of principal of and interest on the Bonds when due will be guaranteed under an insurance policy to be issued concurrently with the delivery of the Bonds by FINANCIAL SECURITY ASSURANCE INC. See “BOND INSURANCE” and APPENDIX VI – “SPECIMEN BOND INSURANCE POLICY” herein.



Purchase of the Bonds, in the event and to the extent not remarketed by the Remarketing Agent (identified below) upon mandatory or optional tender for purchase, initially will be funded under a Standby Bond Purchase Agreement (the “Standby Bond Purchase Agreement” or the “Liquidity Facility”) between the City and DEPFA BANK plc, acting through its New York Branch (the “Liquidity Facility Provider”).



**This Official Statement generally describes the Bonds while bearing interest at the Weekly Interest Rate. Prospective purchasers of the Bonds bearing interest at rates other than the Weekly Interest Rate should not rely on this Official Statement.**

The Standby Bond Purchase Agreement has a stated expiration date of May 4, 2012, unless terminated or extended as described herein. Under certain circumstances described herein, the Standby Bond Purchase Agreement will terminate, and in certain cases the termination will be immediate and without notice to holders of Bonds. In such event, no funds will be available pursuant to the Standby Bond Purchase Agreement to purchase Bonds. Funds will not be advanced by the Liquidity Facility Provider pursuant to the Liquidity Facility for the purchase of unremarketed Bonds which have been converted to or which otherwise bear interest at a rate other than a Weekly Interest Rate (a “Non-Covered Interest Rate”). For more details regarding the Liquidity Facility and the Liquidity Facility Provider, see “THE LIQUIDITY FACILITY AND THE LIQUIDITY FACILITY PROVIDER” herein.

Citigroup Global Markets Inc. is the initial Remarketing Agent for the Bonds. Wachovia Bank, National Association will act as Tender Agent for the Bonds.

*The Bonds are offered when, as and if issued and delivered to and received by the Underwriter, and subject to the approving legal opinion of Saul Ewing LLP and Booth & Tucker, LLP, Co-Bond Counsel, both of Philadelphia, Pennsylvania. Certain legal matters will be passed upon for the Underwriter by Ballard Spahr Andrews & Ingersoll, LLP, and TME Law, LLC, both of Philadelphia, Pennsylvania. Certain legal matters will be passed upon for the Liquidity Facility Provider by its special counsel, Nixon Peabody LLP, New York, New York, and by its in-house Irish counsel. Certain legal matters will be passed upon for the City by the City Solicitor. It is expected that the Bonds in definitive form will be available for delivery to DTC in New York, New York on or about May 4, 2005.*

**Citigroup**

**Dated: May 4, 2005**





THE CITY OF PHILADELPHIA, PENNSYLVANIA

**MAYOR**

HONORABLE JOHN F. STREET

**MAYOR'S CHIEF OF STAFF**

Joyce S. Wilkerson

**MAYOR'S CABINET**

Vincent J. Jannetti ..... Acting Secretary of Financial Oversight/Acting Director of Finance  
Romulo L. Diaz, Jr. .... Acting City Solicitor  
Pedro A. Ramos ..... Managing Director  
George R. Burrell, Jr. .... Secretary of External Affairs  
Stephanie W. Naidoff ..... Director of Commerce/City Representative  
Debra A. Kahn ..... Secretary of Education  
Sylvester M. Johnson ..... Police Commissioner/Secretary of Public Safety  
Maxine Griffith ..... Secretary of Strategic Planning and Initiatives/  
Executive Director of City Planning Commission  
Dianah L. Neff ..... Chief Information Officer  
Kevin Hanna ..... Secretary of Housing and Neighborhood Preservation

**City Controller**

Jonathan A. Saidel

**PHILADELPHIA WATER DEPARTMENT**  
**ARAMARK Tower at One Reading Center**  
**Philadelphia, Pennsylvania 19107**

Bernard Brunwasser, Water Commissioner  
Joseph S. Clare, III, Deputy Water Commissioner  
Debra Anita McCarty, Deputy Water Commissioner  
David A. Katz, Deputy Water Commissioner  
Philip C. Downs, Water Information Center Director  
J. Barry Davis, General Counsel to the Water Department  
Marleen Duley, Deputy Revenue Commissioner  
Lorin Fields, General Manager, Human Resources  
Ed Grusheski, General Manager, Public Affairs  
Stephen J. Furtek, Interim General Manager, Planning and Engineering

**Consulting Engineer**

Black & Veatch Corporation, Kansas City, Missouri

**Financial Advisors**

Fairmount Capital Advisors, Inc.  
and  
Phoenix Capital Partners, LLP

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

This Official Statement is not to be construed as a contract with the purchasers of the Bonds. Statements contained in this Official Statement which involve estimates, forecasts or other matters of opinion, whether or not expressly so described herein, are intended solely as such and are not to be construed as representations of fact. This information and expressions of opinions herein are subject to change without notice, and neither delivery of this Official Statement nor any sale made hereunder shall, under any circumstances, create any implication that there has been no change in the affairs of the City or the Water Department since the date hereof. This Official Statement, including any supplement or amendment thereto, is intended to be deposited with one or more nationally recognized municipal securities information repositories.

The information set forth herein has been obtained from the City and other sources believed to be reliable but is not guaranteed as to accuracy or completeness by the Underwriter. 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 the City or the Water Department since the date hereof.

Other than with respect to information concerning Financial Security Assurance Inc. (the “Bond Insurer”) contained under the caption “BOND INSURANCE” and APPENDIX VI – “SPECIMEN BOND INSURANCE POLICY” herein, none of the information in this Official Statement has been supplied or verified by the Bond Insurer and the Bond Insurer makes no representation or warranty, express or implied, as to (i) the accuracy or completeness of such information; (ii) the validity of the Bonds; or (iii) the tax exempt status of the interest on the Bonds.

Other than with respect to information concerning DEPFA BANK plc, acting by and through its New York Branch (the “Liquidity Facility Provider”), contained under the caption “THE LIQUIDITY FACILITY AND THE LIQUIDITY FACILITY PROVIDER,” herein, none of the information in this Official Statement has been supplied or verified by the Liquidity Facility Provider and the Liquidity Facility Provider makes no representation or warranty, express or implied, as to (i) the accuracy or completeness of such information; (ii) the validity of the Bonds; or (iii) the tax exempt status of the interest on the Bonds.

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

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

IN CONNECTION WITH THE OFFERING OF THE BONDS, THE UNDERWRITER MAY OVER-ALLOT OR EFFECT TRANSACTIONS WHICH STABILIZE OR MAINTAIN THE MARKET PRICE OF THE BONDS AT A LEVEL ABOVE THAT WHICH MIGHT OTHERWISE PREVAIL IN THE OPEN MARKET. SUCH STABILIZING, IF COMMENCED, MAY BE DISCONTINUED AT ANY TIME WITHOUT PRIOR NOTICE.

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## OFFICIAL STATEMENT

relating to

### The City of Philadelphia, Pennsylvania \$86,105,000 Water and Wastewater Revenue Refunding Bonds, Variable Rate Series 2005B

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#### INTRODUCTORY STATEMENT

##### General

This Official Statement, including the cover page and appendices attached hereto, sets forth certain information in connection with the issuance by The City of Philadelphia, a corporation and body politic existing under the laws of the Commonwealth of Pennsylvania (the “City”) of its Water and Wastewater Revenue Refunding Bonds, Variable Rate Series 2005B (the “Bonds”). Unless otherwise indicated, capitalized terms used in this Official Statement are defined in APPENDIX III – “SUMMARIES OF CERTAIN AUTHORIZATIONS FOR THE BONDS” (hereinafter referred to as “SUMMARIES”).

The Bonds are being issued for the purpose of providing funds which will be used to refund a portion of the City’s Water and Wastewater Revenue Bonds, Series 1995 and to pay costs of issuance relating to the Bonds.

**The Bonds are payable solely from Project Revenues (as hereinafter defined) and moneys deposited in the Water and Wastewater Funds (other than the Rebate Fund) (the “Water and Wastewater Funds”) described herein. The Bonds are special obligations of the City and do not pledge the full faith, credit or taxing power of the City, nor create any debt or charge against the tax or general revenues of the City, nor create any lien or charge against any property of the City, other than against the Project Revenues and amounts, if any, at any time on deposit in the Water and Wastewater Funds.**

##### The Water Department

Pursuant to the Philadelphia 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.) (the “Charter”), the City’s Water Department (the “Water Department”) has the power and duty to operate, maintain, repair and improve the City’s water system (the “Water System”) and the City’s wastewater system (the “Wastewater System” and together with the Water System, the “Water and Wastewater Systems”). Under the General Ordinance (as hereinafter defined), the Water and Wastewater Systems are combined as one continuing project for the purpose of revenue bond financing. This has the effect, among other things, of making all revenues of the two systems available for debt service for all Water and Wastewater Revenue Bonds (as defined herein). See “THE WATER DEPARTMENT” herein.

The Water Department, which began Water System service in 1801, supplies water to the City and a portion of each of Montgomery, Delaware and Bucks Counties, Pennsylvania and wastewater service to the City and to ten municipalities and authorities located in Montgomery, Delaware and Bucks Counties, Pennsylvania. The population served by the Water System was approximately 1,672,000 as of the 2000 census, of which 1,518,000 were in the City. The population served by the Wastewater System was approximately 2,218,000 as of the 2000 census, of which 1,518,000 were in the City and 700,000 were in the suburbs.

In connection with the authorization and offering of the Bonds, Black & Veatch Corporation performed engineering evaluations of the existing current condition and financial operations of the Project of the Water and Wastewater Systems. Such engineering evaluations mandated by the General Ordinance as a condition to the issuance of the Bonds and updated for the offering of the Bonds have resulted in findings that Project Revenues will be sufficient to meet payment or deposit requirements of Project expenses, reserve funds, debt service or redemption price; that Net Revenues are currently sufficient to comply with the Rate Covenant and are projected to be sufficient to comply with the Rate Covenant for each of the two Fiscal Years following the Fiscal Year the Bonds are issued or if there is capitalized interest, the projection shall extend to two Fiscal Years following the Fiscal Year up to which interest has been capitalized; and that the Water and Wastewater Systems operated by the Water Department are in good operating condition or that adequate steps are being taken to return them to good operating condition. Such engineering evaluations performed by Black & Veatch Corporation provide the basis of such findings in an engineering report dated April 8, 2005 (the "Engineering Report"). See APPENDIX II – "ENGINEERING REPORT."

### **Rates and Rate Covenant**

Under the Charter, the Water Department is empowered and required to establish (i) rates for water and wastewater service, in accordance with standards ordained by City Council, but without further authorization required by City Council, at levels which provide sufficient revenue to meet operating expenses of the Water and Wastewater Systems, including interdepartmental charges for services provided to the Water Department, and (ii) debt service requirements on all obligations issued for the Water Department, as well as other specific covenants of the General Ordinance. See "RATES."

### **Authorization for the Bonds**

The Bonds are being issued under The First Class City Revenue Bond Act, P.L. 955, Act No. 234 of the General Assembly of the Commonwealth of Pennsylvania, approved October 18, 1972 (the "Act") and the City's Restated General Water and Wastewater Revenue Bond Ordinance of 1989, approved June 24, 1993 (the "Restated General Ordinance"), as supplemented by (i) the First Supplemental Ordinance approved June 24, 1993 (the "First Supplemental Ordinance"), authorizing the issuance of Water and Wastewater Revenue Bonds, Series 1993 (the "Series 1993 Bonds"), (ii) the Second Supplemental Ordinance approved May 9, 1994 (the "Second Supplemental Ordinance"), authorizing the issuance of Water and Wastewater Revenue Bonds, Series 1995 (the "Series 1995 Bonds"), (iii) the Third Supplemental Ordinance approved October 27, 1997 (the "Third Supplemental Ordinance"), authorizing the issuance of Water and Wastewater Revenue Bonds, Series 1997A and Water and Wastewater Revenue Bonds, Variable Rate Series 1997B (collectively, the "Series 1997 Bonds"), (iv) the Fourth Supplemental Ordinance approved December 11, 1998 (the "Fourth Supplemental Ordinance"), authorizing the issuance of Water and Wastewater Revenue Bonds, Series 1998 (the "Series 1998 Bonds"), (v) the Fifth Supplemental Ordinance approved December 11, 1998 (the "Fifth Supplemental Ordinance"), authorizing the issuance of Water and Wastewater Revenue Bonds, Series 1999 (the "Series 1999 Bonds"), (vi) the Sixth Supplemental Ordinance approved December 11, 1998 (the "Sixth Supplemental Ordinance"), authorizing the issuance of Water and Wastewater Revenue Bonds, Series 1999A (the "1999 Pennvest Loan"), (vii) the Seventh Supplemental Ordinance approved May 10, 2001 (the "Seventh Supplemental Ordinance"), authorizing the issuance of Water and Wastewater Revenue Bonds, Series 2001A and Water and Wastewater Revenue Refunding Bonds, Series 2001B (collectively, the "Series 2001 Bonds"), (viii) the Eighth Supplemental Ordinance approved November 22, 2002 (the "Eighth Supplemental Ordinance"), authorizing the issuance of Water and Wastewater Revenue Bonds, Series 2005A (the "Series 2005A Bonds"), and the Ninth Supplemental Ordinance approved November 22, 2002 (the "Ninth Supplemental Ordinance"), authorizing the issuance of Water and Wastewater Revenue Refunding Bonds, Variable Rate Series 2003 (the "Series 2003 Bonds") and the



Bonds. The Restated General Ordinance, as supplemented and amended by any amendment thereto contained in the First Supplemental Ordinance, the Second Supplemental Ordinance, the Third Supplemental Ordinance, the Fourth Supplemental Ordinance, the Fifth Supplemental Ordinance, the Sixth Supplemental Ordinance, the Seventh Supplemental Ordinance, the Eighth Supplemental Ordinance and the Ninth Supplemental Ordinance, is herein referred to as the “General Ordinance.”

Pursuant to the Act, cities of the first class are authorized to issue revenue bonds to finance revenue producing projects and to refund certain outstanding bonds, including revenue bonds issued under the Act, but the bonds must be payable solely from Project Revenues as defined in the Act (the “Project Revenues”).

Pursuant to the Act, prior to the delivery of the Bonds, the City must file with the Court of Common Pleas of the County of Philadelphia a transcript of the proceedings authorizing their issuance, including bond ordinances, a report of the chief fiscal officer describing the project and establishing that Project Revenues will be sufficient to support debt service on the Bonds, and an opinion of the City Solicitor to the effect that, under the General Ordinance, holders or registered owners of the Bonds will have no claim upon the taxing power or general revenues of the City nor any lien upon any property of the City other than Project Revenues. Beginning on the twenty-first day after such filing is made, the validity of the proceedings, the right of the City to issue the Bonds authorized thereby, the lawful nature of the purpose for which the Bonds are issued, and the validity and enforceability of the Bonds in accordance with their terms may not be challenged judicially, in equity, at law or by civil or criminal proceedings, or otherwise, either directly or collaterally, except where a constitutional question is involved; provided, that any person knowingly participating in the sale or issuance of the Bonds in violation of the Act shall not be entitled to enforce the obligations of the Bonds nor be relieved of civil or criminal liability for such participation or for willfully false or fraudulent statements made in the documents constituting the transcript of proceedings or in the Bonds. The City made its filing on March 11, 2003 and no challenges to the validity of the proceedings were filed by the deadline.

### **Outstanding and Additional Indebtedness**

Pursuant to the City’s General Water and Sewer Revenue Bond Ordinance of 1974, approved May 16, 1974 (Bill No. 1263), as amended and supplemented (the “Prior Ordinance”), the City has previously issued and there are outstanding, as of April 1, 2005, \$60,400,000 aggregate principal amount of Water and Sewer Revenue Bonds consisting of the Fourteenth Series (the “Water and Sewer Revenue Bonds”).

In addition to the Water and Sewer Revenue Bonds authorized and issued pursuant to the Prior Ordinance, the City has previously issued and there are outstanding, as of April 1, 2005, \$1,635,515,000 aggregate principal amount of Water and Wastewater Revenue Bonds (consisting of the Series 1993 Bonds, the Series 1995 Bonds, the Series 1997A Bonds, the Series 1997B Bonds, the Series 1998 Bonds, the Series 1999 Bonds, the Series 2001A Bonds, the Series 2001B Bonds and the Series 2003 Bonds) pursuant to the General Ordinance. Upon the issuance of the Series 1993 Bonds, the General Ordinance superseded the Prior Ordinance and the outstanding Water and Sewer Revenue Bonds became subject to the General Ordinance and no longer subject to the Prior Ordinance. The Water and Sewer Revenue Bonds, the Series 1993 Bonds, the Series 1995 Bonds, the Series 1997A Bonds, the Series 1997B Bonds, the Series 1998 Bonds, the Series 1999 Bonds, the Series 2001A Bonds, the Series 2001B Bonds and the Series 2003 Bonds are herein referred to as the “Outstanding Bonds.”

Concurrently with the issuance of the Bonds, the City expects to issue the Series 2005A Bonds in the aggregate principal amount of \$250,000,000. The proceeds of the Series 2005A Bonds will be applied to (i) fund capital improvements to the City’s Water and Wastewater Systems (as hereinafter

defined), (ii) fund a Debt Reserve Account of the Sinking Fund (as hereinafter defined) relating to the Series 2005A Bonds, and (iii) pay costs of issuance relating to the Series 2005A Bonds.

The Outstanding Bonds, the Series 2005A Bonds and the Bonds will be equally and ratably secured under the General Ordinance. In addition, the City has authorization to borrow up to \$6.7 million from Pennvest and has issued and privately placed a revenue bond with Pennvest pursuant to the Sixth Supplemental Ordinance to secure the 1999 Pennvest Loan. The 1999 Pennvest Loan, outstanding in the principal amount of \$2,268,296 as of April 1, 2005, is equally and ratably secured with the Outstanding Bonds, the Series 2005A Bonds and the Bonds under the General Ordinance. The Outstanding Bonds, the Series 2005A Bonds, the Bonds and the 1999 Pennvest Loan and Bonds of all series hereafter issued under the General Ordinance, as amended or supplemented, are hereinafter referred to as the "Water and Wastewater Revenue Bonds." Wachovia Bank, National Association, Philadelphia, Pennsylvania, is acting as Fiscal Agent for the Water and Wastewater Revenue Bonds (the "Fiscal Agent").

As of April 1, 2005 the City had outstanding \$8,291,823 aggregate principal amount of general obligation bonds (the "General Obligation Bonds") attributable to the Water and Wastewater Systems, which consisted of general obligation bonds issued in 1993 that are evidenced by a loan from Pennvest (the "1993 Pennvest Loan") to the City for Water Department purposes. The General Obligation Bonds, along with the 1993 Pennvest Loan, attributable to the Water and Wastewater Systems, are self-liquidating debt of the City payable out of the Water and Wastewater Funds after the payment of the Water and Wastewater Revenue Bonds.

### **Plan of Finance**

The proceeds of the Bonds will be used to refund a portion of the City's Water and Wastewater Revenue Bonds, Series 1995 and to pay costs of issuance relating to the Bonds. See "PLAN OF FINANCE" below.

Concurrently with the issuance of the Bonds, the City expects to issue the Series 2005A Bonds in the aggregate principal amount of \$250,000,000 to fund capital improvements to the City's Water and Wastewater Systems, fund a Debt Reserve Account of the Sinking Fund (as hereinafter defined) relating to the Series 2005A Bonds, and pay costs of issuance relating to the Series 2005A Bonds.

### **Interest Rate Swap Agreement**

The Bonds are being issued in conjunction with an interest rate swap agreement between the City and Citigroup Financial Products Inc. See "INTEREST RATE SWAP AGREEMENT" below.

### **Security for the Bonds**

The Bonds are payable from and secured by a pledge of all Project Revenues and amounts on deposit in the Water and Wastewater Funds. See APPENDIX III – "SUMMARIES OF CERTAIN AUTHORIZATIONS FOR THE BONDS."

The City may issue additional bonds on a parity with the Bonds and may elect to secure other obligations on a parity with the Bonds pursuant to the terms of the General Ordinance.

For further details concerning security for the Bonds, see "SECURITY FOR THE BONDS."

## **Bond Insurance**

The scheduled payment of principal and interest on the Bonds when due will be guaranteed under an insurance policy (the “Bond Insurance Policy”) to be issued, concurrently with the delivery of the Bonds, by Financial Security Assurance Inc. (the “Bond Insurer”). See “BOND INSURANCE” and APPENDIX VI – “SPECIMEN BOND INSURANCE POLICY.” The Bond Insurance Policy does not insure the purchase of unremarketed Bonds.

## **Liquidity Facility for the Bonds**

While bearing interest at a Weekly Interest Rate, the Bonds are to be purchased pursuant to the terms discussed herein upon the demand of the beneficial owner thereof at a price of 100% of the principal amount thereof plus accrued interest and in certain circumstances are subject to mandatory tender for purchase. If any or all of the Bonds cannot be remarketed, subject to certain conditions and in accordance with the terms herein, by DEPFA BANK plc, acting through its New York Branch (the “Liquidity Facility Provider”), will purchase such Bonds pursuant to a standby bond purchase agreement (the “Liquidity Facility”) with the City. The Liquidity Facility will expire on May 4, 2012, unless extended or earlier terminated in accordance with its terms. Under certain circumstances described herein, the Liquidity Facility will terminate, and in certain cases the termination will be immediate and without notice to holders of the Bonds. In such event, no funds will be available pursuant to the Liquidity Facility to purchase the Bonds. Funds will not be advanced by the Liquidity Facility Provider in the event of tender of unremarketed Bonds which have been converted to or which otherwise bear interest at a rate other than a Weekly Interest Rate (a “Non-Covered Interest Rate”). See “THE LIQUIDITY FACILITY AND THE LIQUIDITY FACILITY PROVIDER.”

## **Miscellaneous**

Brief descriptions of the Water Department, the Bonds and the security therefor, and certain information about the City are included herein. Such descriptions and information do not purport to be comprehensive or definitive. All references herein to the Act, the Charter, the General Ordinance and the Engineering Report, are qualified in their entirety by reference to each such document. Copies of the foregoing documents and the financial statements of the City for the fiscal year ended June 30, 2004 are available from the Office of the Director of Finance, Suite 1330, Municipal Services Building, 1401 J.F. Kennedy Boulevard, Philadelphia, Pennsylvania 19102.

Financial statements of the Water Fund for the Fiscal Years ended June 30, 2004 and 2003 are attached hereto as APPENDIX I. The Engineering Report of Black & Veatch Corporation is attached hereto as APPENDIX II. Summaries of certain provisions of the Act, the General Ordinance (including definitions of certain terms), the Ninth Supplemental Ordinance and the Covenant Agreement are attached hereto as APPENDIX III. Certain information concerning the City is attached hereto as APPENDIX IV. APPENDIX V attached hereto is the form of opinion of Saul Ewing LLP and Booth & Tucker, LLP, Co-Bond Counsel, to be delivered in connection with the issuance and delivery of the Bonds. APPENDIX VI attached hereto contains a specimen of the Bond Insurance Policy. APPENDIX VII attached hereto contains the form of Continuing Disclosure Agreement.

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

## **PLAN OF FINANCE**

The proceeds of the Bonds will be used to refund a portion of the City's Water and Wastewater Revenue Bonds, Series 1995 and to pay costs of issuance relating to the Bonds.

The proceeds of the Bonds, when delivered, will be used to currently refund \$80,720,000 aggregate principal amount of the Series 1995 Bonds, currently outstanding in the aggregate principal amount of \$168,820,000. The Water and Wastewater Revenue Bonds expected to be refunded consist of the Series 1995 Bonds maturing on August 1, 2014 and August 1, 2018.

The City will irrevocably deposit a portion of the proceeds of the Bonds, when delivered, in an escrow fund (the "Escrow Fund") for the refunded bonds to be held by Wachovia Bank, National Association, as escrow agent (the "Escrow Agent") pursuant to an escrow deposit agreement (the "Escrow Agreement") between the City and the Escrow Agent. The funds deposited in the Escrow Fund will be invested in Qualified Escrow Securities (as defined in the General Ordinance), which will mature and bear interest at such times and in such amounts as to be sufficient to pay the principal or redemption price, if any, and interest on the refunded bonds when due.

Concurrently with the issuance of the Bonds, the City expects to issue the Series 2005A Bonds in an aggregate principal amount of \$250,000,000 to fund capital improvements to the City's Water and Wastewater Systems, fund a Debt Reserve Account of the Sinking Fund (as hereinafter defined) relating to the Series 2005A Bonds, and pay costs of issuance relating to the Series 2005A Bonds.

## **INTEREST RATE SWAP AGREEMENT**

On December 5, 2002, the City entered into an ISDA Master Agreement and Schedule and a separate Confirmation for each of the Series 1993 Bonds and the 1995 Bonds (collectively, the "Swap Agreement") with Citigroup Financial Products Inc., as successor to Salomon Brothers Holding Company, Inc. (the "Swap Provider"), in connection with the potential refunding of the Series 1993 Bonds and issuance of the Series 2003 Bonds and the potential refunding of the Series 1995 Bonds and issuance of the Bonds. Under the terms of the Swap Agreement, the Swap Provider paid an up-front premium payment to the City of \$30,400,000 and in return the City granted the Swap Provider the right but not the obligation to execute an interest rate swap with the City with respect to the Series 1993 Bonds and the Series 1995 Bonds. On February 4, 2005 the Swap Provider gave notice to the City that, effective May 4, 2005, it will exercise its right under the Swap Agreement with respect to the Series 1995 Bonds and therefore the City will pay a fixed rate to the Swap Provider that based upon the expected amortization of the Bonds will result in bond debt service payments after giving effect to the swap that are approximately equal to the debt service on the Series 1995 Bonds. The Swap Provider will in turn pay the City a floating payment that is based upon the actual floating rate of the Bonds unless certain events occur which allow the Swap Provider to calculate floating rate payments based upon a percentage of LIBOR. The Swap Provider previously elected to exercise its right under the Swap Agreement with respect to the Series 1993 Bonds.

The City's regularly scheduled payments under the Swap Agreement are secured on a parity basis by a lien on and a security interest in all Project Revenues for the benefit of the Swap Provider, as the swap provider, and Financial Security Assurance Inc., as the bond insurer. All other obligations of the City under the Swap Agreement, including payments due upon the early termination of the Swap Agreement, are secured by a lien on and security interest in all Project Revenues subordinate to the lien described in the preceding sentence.

## ESTIMATED SOURCES AND USES OF FUNDS

The following table sets forth estimated sources and uses of funds.

<u>Sources of Funds:</u>	
Proceeds of the Bonds	<u>\$86,105,000</u>
Total Sources of Funds	\$86,105,000
<u>Uses of Funds:</u>	
Deposit to the Escrow Fund	\$84,579,785
Payment of Costs of Issuance (a)	<u>1,525,215</u>
Total Uses of Funds	\$86,105,000

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- (a) Includes underwriter's compensation, bond insurance premium, liquidity facility provider fees, legal fees, printing, rating agency fees, Fiscal Agent and Tender Agent fees, financial advisors fees, verification agent fees and other expenses of the offering.

## THE BONDS

### General

The Bonds will be issued in the aggregate principal amount and will be dated and mature (subject to prior redemption), as shown on the cover of this Official Statement. The Bonds will be issued in fully-registered form, registered in the name of Cede & Co., as nominee of The Depository Trust Company ("DTC").

***This Official Statement summarizes certain terms of the Bonds only while the Bonds bear interest at a Weekly Interest Rate. Should the Bonds be adjusted to a different Interest Rate Period, the Bonds will be subject to mandatory tender for purchase and, at that time, it is expected that a new Official Statement or other disclosure document will be prepared.***

The Bonds initially will bear interest at a Weekly Interest Rate as described below under "Determination of Weekly Interest Rate," unless and until, at the direction of the City and upon compliance with the conditions set forth in the Variable Rate Securities Agreement, the Bonds are adjusted to bear interest from time to time at a Daily Interest Rate, Bond Interest Term Rate or Long-Term Interest Rate (each, an "Interest Rate Period"). All of the Bonds must be in the same interest rate period.

So long as the Bonds bear interest at the Weekly Interest Rate, interest shall be computed on the basis of a 365 or 366-day year, as appropriate, for the actual number of days elapsed. Authorized denominations of Bonds bearing interest at the Weekly Rate will be \$100,000 and any integral multiple of \$5,000 in excess of \$100,000 (the "Authorized Denominations").

Interest on the Bonds will be payable by the Fiscal Agent during any Weekly Interest Rate Period, on each February 1 and August 1, whether or not a Business Day, commencing on August 1, 2005 and as set forth in the Liquidity Facility for Bonds purchased by the Liquidity Facility Provider. For any Weekly Interest Rate Period, interest shall accrue from the first day thereof and thereafter from each

Interest Payment Date to and including the day immediately preceding the next succeeding Interest Payment Date or, if sooner, the day prior to the last day of the Weekly Interest Rate Period. Interest on the Bonds or the principal portion thereof called for redemption will cease to accrue on the date fixed for redemption of such Bonds. At no time shall any Bond (other than Bonds purchased by the Liquidity Facility Provider) bear interest at a rate in excess of 12% per annum (the “Maximum Rate”). “Business Day” shall mean any day other than a Saturday, a Sunday or any other day on which banks located in the Commonwealth of Pennsylvania (the “Commonwealth”), the Liquidity Facility Provider and the principal corporate trust office of the Fiscal Agent or the Corporate Trust Office of the Tender Agent are closed or are required to be closed or on which the New York Stock Exchange is closed.

### **Determination of the Weekly Interest Rate**

The Weekly Interest Rate shall be determined by the Remarketing Agent by no later than 5:00 p.m., New York City time, on Tuesday of each week during a Weekly Interest Rate Period or the next succeeding Business Day if such Tuesday is not a Business Day. The first Weekly Interest Rate determined for each Weekly Interest Rate Period shall be determined on or prior to the first day of such Weekly Interest Rate Period and shall apply to the period commencing on the first day of such Weekly Interest Rate Period and ending on the next succeeding Tuesday. Thereafter, each Weekly Interest Rate shall apply to the period commencing on Wednesday and ending on and including the next succeeding Tuesday, unless such Weekly Interest Rate Period shall end on a day other than Tuesday, in which event the last Weekly Interest Rate shall apply to the period commencing on and including the Wednesday preceding the last day of such Weekly Interest Rate Period and ending on the last day of such Weekly Interest Rate Period.

The Weekly Interest Rate shall be the rate of interest per annum determined by the Remarketing Agent (as defined in the General Ordinance, the “Remarketing Agent”), based on the examination of tax-exempt obligations comparable, in the judgment of the Remarketing Agent, to the Bonds and known by the Remarketing Agent to have been priced or traded under then-prevailing market conditions, to be the minimum interest rate which, if borne by the Bonds, would enable the Remarketing Agent to sell all of such Bonds on the effective date of that rate at a price (without regard to accrued interest) equal to the principal amount thereof.

If the Remarketing Agent fails to establish a Weekly Interest Rate for any week during a Weekly Interest Rate Period, the interest rate for such week shall be deemed to be the same as the Weekly Interest Rate for the immediately preceding week, if the Weekly Interest Rate for such preceding week was determined by the Remarketing Agent. In the event that the Remarketing Agent did not determine the Weekly Interest Rate for the immediately preceding week, or if a Weekly Interest Rate determined by the Remarketing Agent for any week shall be held to be invalid or unenforceable by a court of law, the interest rate for such week shall be equal to 110% of the BMA Index made available for the week preceding the date of determination, or if such index is no longer available, or no such index was so made available, for the week preceding the date of determination, 85% of the interest rate on 30-day high grade unsecured commercial paper notes sold through dealers by major corporations as reported in *The Wall Street Journal* on the day the Weekly Interest Rate would otherwise be determined by the Remarketing Agent.

### **Adjustment to an Alternate Interest Rate Period**

The City may elect at any time to adjust the Interest Rate Period on the Bonds to an alternate Interest Rate Period, subject to certain conditions specified in the Variable Rate Securities Agreement, including delivery to the Fiscal Agent of an opinion of bond counsel specializing and nationally recognized in the field of municipal finance law, dated the effective date of such adjustment, to the effect

that the action proposed to be taken is authorized or permitted by the laws of the Commonwealth and the Variable Rate Securities Agreement and will not adversely affect any exclusion from gross income for federal income tax purposes of interest on the Bonds.

If the City elects to adjust the Bonds to an alternate Interest Rate Period, all of the Bonds will be subject to such alternate Interest Rate Period. The written direction by which the City makes such election shall specify the effective date of the adjustment to any alternate Interest Rate Period, which effective date shall be a Business Day not earlier than the 30th day following the second Business Day after receipt by the Fiscal Agent and DTC of such direction from the City.

The Tender Agent is required to give notice to the owners of the Bonds of any adjustment to a new Interest Rate Period not less than 30 days prior to the effective date of such new Interest Rate Period. Such notice will state (i) that the interest rate on the Bonds will be adjusted to a Daily Interest Rate, a Long-Term Interest Rate or BIT Rates, as appropriate, unless the City rescinds its election to cause such adjustment, in which case the Bonds shall continue to bear interest at a Weekly Interest Rate; (ii) the proposed effective date of such alternate Interest Rate Period, and in the case of an adjustment to a Long-Term Interest Rate Period, the day on which such Long-Term Interest Rate Period shall end or in the case of an adjustment to a Short-Term Interest Rate Period, that a BIT and a BIT Rate for each such Bond will be determined not later than the first day of each BIT; (iii) that the Bonds are subject to mandatory tender for purchase on the proposed effective date of the new Interest Rate Period, setting forth the applicable purchase price; (iv) in the case of an adjustment to a Long-Term Interest Rate Period, the Liquidity Facility Provider, if any; and (v) other information required for notice of mandatory tender for purchase.

Upon the failure of an adjustment to an alternate Interest Rate Period, the Bonds will continue to bear interest at Weekly Interest Rates and will continue to be subject to mandatory tender for purchase on the date which would have been the effective date of such adjustment.

### **Rescinding Election to Adjust to Alternate Interest Rate Period**

If the City elects to rescind its election to adjust the interest rate on the Bonds from the Weekly Interest Rate, then the Bonds shall continue to bear interest at a Weekly Interest Rate commencing on the date which would have been the effective date of the Adjustment; and the Bonds will continue to be subject to mandatory tender for purchase on such date.

### **Tender for Purchase of Bonds**

**Optional Tender for Purchase During Weekly Interest Rate Period.** During any Weekly Interest Rate Period, the beneficial interest in any Bond shall be purchased in an Authorized Denomination (provided that the amount of Bonds not purchased shall also be in an Authorized Denomination) from the holder thereof at the option of such holder on any Business Day at a purchase price equal to the principal amount thereof plus accrued interest upon delivery to the Tender Agent, the Fiscal Agent and the Remarketing Agent of an irrevocable written notice that states the principal amount of the owner's beneficial interest in the Bond and the Business Day (at least seven days after the date of delivery of such notice) on which the owner's beneficial interest in the Bond is to be purchased. Any notice delivered to the Tender Agent after 4:00 p.m. shall be deemed to have been received by the Tender Agent on the next succeeding Business Day.

**Notice of Election Deemed to be Irrevocable Tender.** The giving of notice by a beneficial owner of its election to have the beneficial interest in its Bond purchased during a Weekly Interest Rate Period shall constitute an irrevocable tender for purchase of such Bond provided that moneys sufficient to pay the purchase price are on deposit with the Tender Agent for such purpose. From and after the

relevant purchase date, no interest shall accrue on the Bonds and the holder shall have no right except to receive the purchase price of the beneficial interest in such Bonds.

**Mandatory Tender for Purchase on First Day of Each Interest Rate Period.** The Bonds shall be subject to mandatory tender for purchase on the effective date of a conversion to a different Interest Rate Period (or on the day which would have been the first day of an Interest Rate Period had there been no occurrence of an event that resulted in the interest rate on the Bonds not being adjusted), at a purchase price equal to the principal amount of the Bonds, plus accrued interest, if any.

The Tender Agent shall give notice by first-class mail of an Adjustment to a different Interest Rate Period to the holders of the Bonds not less than 30 days prior to the proposed effective date of such Interest Rate Period.

**Mandatory Tender for Purchase Upon Termination, Expiration or Replacement of the Liquidity Facility.** If the Tender Agent gives holders of the Bonds notice that on the date specified in such notice such Bonds shall cease to be payable from the Liquidity Facility as a result of (i) the termination, replacement or expiration of the term of such Liquidity Facility, including but not limited to termination at the option of the City in accordance with the terms of such Liquidity Facility or (ii) the Liquidity Facility Provider's notifying the Tender Agent that an event with respect to the Liquidity Facility has occurred permitting the Liquidity Facility Provider to terminate the Liquidity Facility upon notice in accordance with its terms (a "Mandatory Standby Tender"), then each such Bond shall be purchased or deemed purchased as provided in the Variable Rate Securities Agreement. Any such purchase shall occur (i) on the fifth Business Day preceding such expiration or termination of the Liquidity Facility without replacement by an Alternate Liquidity Facility or upon any termination thereof as a result of a Mandatory Standby Tender, and (ii) on the date of the replacement of a Liquidity Facility in any case where an Alternate Liquidity Facility has been delivered to the Tender Agent.

The Tender Agent shall give notice by mail to the holders of the Bonds secured by a Liquidity Facility (i) on or before the 30th day preceding the replacement, termination or expiration of such Liquidity Facility (except in the case of a termination resulting from an event referred to in the following paragraph) in accordance with its terms, or (ii) in the case of any Mandatory Standby Tender under such Liquidity Facility, no later than the Business Day following the receipt by the Tender Agent of notice of the Mandatory Standby Tender. The notice shall be accompanied by directions for the purchase of the Bonds as described in the preceding paragraph.

If there should occur any event resulting in the immediate termination or suspension of the obligation of the Liquidity Facility Provider to purchase Bonds under the terms of any Liquidity Facility, then the Trustee shall as soon as practicably possible thereafter notify the Bond Insurer and the holders of all the Bonds then outstanding that: (i) the Liquidity Facility has been terminated or suspended, as the case may be; (ii) the Tender Agent will no longer be able to purchase Bonds with moneys available under the Liquidity Facility; and (iii) the Liquidity Facility Provider is under no obligation to purchase Bonds or to otherwise advance moneys to fund the purchase of Bonds.

**Sources of Funds for Purchase of Tendered Bonds.** Funds for the payment of the purchase price of Bonds required to be purchased in accordance with the Variable Rate Securities Agreement shall be derived from the following sources in the order of priority indicated:

- (i) proceeds of the sale of such Bonds remarketed to any person pursuant to the Variable Rate Securities Agreement and furnished to the Tender Agent by the Remarketing Agent;
- (ii) moneys furnished by the Liquidity Facility Provider to the Tender Agent; and



(iii) moneys, if any, furnished by the City at its option to the Tender Agent for such purpose.

**The City shall not have any obligation to pay the purchase price of Bonds required to be purchased pursuant to the Variable Rate Securities Agreement if the moneys described in clauses (i) and (ii) above are insufficient to provide for such payment.**

**Delivery of Tender Notices.** Notices in respect of tenders for purchase at the election of beneficial owners during a Weekly Interest Rate Period must be delivered to the Tender Agent and the Remarketing Agent.

### **Redemption of the Bonds**

**Mandatory Sinking Fund Redemption.** The Bonds maturing on August 1, 2018 are subject to mandatory redemption prior to maturity (to the extent that such Bonds in the principal amount otherwise required to be redeemed have not been previously purchased by the City), in part, as drawn by lot by the Fiscal Agent, by application of moneys required to be deposited for that purpose in the Sinking Fund, on August 1 of the following years at a redemption price equal to 100% of the principal amount of each such Bond to be redeemed plus accrued interest to the date of redemption according to the following schedule.

<u>Year</u>	<u>Principal Amount</u>
2005	\$ 1,385,000
2006	335,000
2007	350,000
2008	370,000
2009	390,000
2010	405,000
2011	425,000
2012	450,000
2013	14,820,000
2014	15,535,000
2015	16,315,000
2016	17,145,000
2017	18,015,000
2018*	165,000

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\*Final maturity.

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

**Optional Redemption.** During a Weekly Interest Rate Period, the Bonds will be subject to optional redemption by the City, on any Business Day, in whole or in part, at a redemption price of par plus accrued interest to the date of redemption, if any.

Any Purchased Bonds shall be subject to optional redemption by the City, in whole or in part, at any time, and from time to time, from Available Moneys at a redemption price of par plus accrued interest to the date of redemption. Notwithstanding any other provision of the Variable Rate Securities Agreement, Purchased Bonds shall be redeemed prior to other Variable Rate Series 2005B Bonds.

### **Notice of Redemption**

Notice of redemption of the Bonds shall be mailed by first class mail by the Fiscal Agent, not less than 30 days nor more than 60 days prior to the date fixed for redemption, to holders of Bonds and one or more Information Services (as defined in APPENDIX VII - "FORM OF DISCLOSURE AGREEMENT"). From and after the date fixed for redemption, interest shall cease to accrue. Failure by the Fiscal Agent to give notice to DTC or any one or more Information Services or failure of DTC or any Information Services to receive notice or any defect in any notice shall not affect the validity of the proceedings for redemption.

If at the time of mailing notice of redemption the City shall not have deposited with the Fiscal Agent moneys sufficient to redeem the Bonds called for redemption, such notice may state that it is conditional in that it is subject to the deposit of the redemption moneys with the Fiscal Agent not later than the redemption date, and such notice shall be of no effect unless such moneys are so deposited.

## Debt Service Requirements

Fiscal Year Ending June 30	Aggregate Debt Service on Outstanding Bonds <sup>1,2</sup>	Aggregate Debt Service on 2005A Bonds	Aggregate Debt Service on 2005B Bonds <sup>3</sup>	Total Debt Service
2005	\$142,788,440.57	\$ 0.00	\$ 0.00	\$142,788,440.57
2006	151,944,718.07	8,106,412.19	4,246,542.49	164,297,672.75
2007	152,018,450.32	14,401,350.00	4,165,228.25	170,585,028.57
2008	152,101,361.32	16,311,625.00	4,164,713.00	172,577,699.32
2009	152,171,627.32	16,309,012.50	4,168,405.00	172,649,044.82
2010	152,246,897.06	16,299,737.50	4,171,191.00	172,717,825.56
2011	151,901,998.17	16,292,437.50	4,168,184.25	172,362,619.92
2012	151,743,760.52	16,275,300.00	4,169,384.75	172,188,445.27
2013	152,331,740.27	16,263,662.50	4,174,566.00	172,769,970.77
2014	138,562,960.52	16,248,400.00	18,198,700.50	173,010,061.02
2015	138,892,972.02	16,247,362.50	18,226,159.75	173,366,494.27
2016	139,379,884.02	16,238,737.50	18,284,757.25	173,903,378.77
2017	54,021,410.52	16,228,231.25	18,356,888.25	88,606,528.02
2018	54,185,335.77	16,219,318.75	18,430,514.25	88,835,168.77
2019	54,350,359.14	16,208,212.50	168,737.25	70,727,308.39
2020	54,644,372.14	16,198,993.75	0.00	70,843,365.89
2021	54,816,929.14	16,190,612.50	0.00	71,007,541.64
2022	55,017,403.76	16,187,000.00	0.00	71,204,403.76
2023	55,213,985.51	16,178,125.00	0.00	71,392,110.51
2024	39,516,279.38	16,169,000.00	0.00	55,685,279.38
2025	39,669,893.13	16,158,625.00	0.00	55,828,518.13
2026	39,837,781.88	16,146,000.00	0.00	55,983,781.88
2027	40,007,505.00	16,135,000.00	0.00	56,142,505.00
2028	27,132,425.00	16,124,375.00	0.00	43,256,800.00
2029	40,967,000.00	16,108,000.00	0.00	57,075,000.00
2030	40,963,000.00	16,094,625.00	0.00	57,057,625.00
2031	40,963,625.00	16,077,875.00	0.00	57,041,500.00
2032	40,964,125.00	16,066,250.00	0.00	57,030,375.00
2033	0.00	16,048,250.00	0.00	16,048,250.00
2034	0.00	16,032,375.00	0.00	16,032,375.00
2035	0.00	16,016,875.00	0.00	16,016,875.00
2036	<u>0.00</u>	<u>15,995,125.00</u>	<u>0.00</u>	<u>15,995,125.00</u>
	<u>\$2,508,356,240.55</u>	<u>\$491,576,905.94</u>	<u>\$125,093,971.99</u>	<u>\$3,125,026,917.98</u>

<sup>1</sup> Contemplates the refunding of a portion of the Series 1995 Bonds. Assumes that Series 1997B Bonds (which bear interest at a variable rate) will bear interest at a rate equal to the average interest rate on the Series 1997B Bonds during the period of 24 consecutive calendar months preceding the date of calculation (1.18%). Also includes debt service for the 1999 Pennvest Loan.

<sup>2</sup> Interest calculated at fixed swap rate of 4.52% per annum for the 2003 Bonds; actual results may vary.

<sup>3</sup> Interest calculated at fixed swap rate of 4.53% per annum for the 2005B Bonds; actual results may vary.

## **Book-Entry Only System**

DTC will act as securities depository for the Bonds. The Bonds will be initially issued as fully-registered securities registered in the name of Cede & Co. (DTC's partnership nominee) or such other name as may be requested by an authorized representative of DTC. One fully-registered Bond will be issued for each maturity of the Bonds, 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 2.2 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, in turn, is owned by a number of Direct Participants of DTC and Members of the National Securities Clearing Corporation, Fixed Income Clearing Corporation and Emerging Markets Clearing Corporation (NSCC, FICC, and EMCC, also subsidiaries of DTCC), as well as by the New York Stock Exchange, Inc., the American Stock Exchange LLC, and the National Association of Securities Dealers, Inc. 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 Standard & Poor's highest rating: AAA. 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](http://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.

Redemption notices shall be sent to DTC. If less than all of the Bonds within an issue are being redeemed, DTC's practice is to determine by lot the amount of the interest of each Direct Participant in such issue 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 Procedures. Under its usual procedures, DTC mails an Omnibus Proxy to Issuer as soon as possible after the record date. The Omnibus Proxy assigns Cede & Co.'s consenting or voting rights to those Direct Participants to whose accounts the Bonds are credited on the record date (identified in a listing attached to the Omnibus Proxy).

Principal, redemption price, if any, purchase price and interest payments on the Bonds will be made to Cede & Co., or such other nominee as may be requested by an authorized representative of DTC. DTC's practice is to credit Direct Participants' accounts upon DTC's receipt of funds and corresponding detail information from Issuer or Agent, on payable date in accordance with their respective holdings shown on DTC's records. Payments by Participants to Beneficial Owners will be governed by standing instructions and customary practices, as is the case with securities held for the accounts of customers in bearer form or registered in "street name," and will be the responsibility of such Participant and not of DTC, the Fiscal Agent, or the City, subject to any statutory or regulatory requirements as may be in effect from time to time. Payment of principal and interest to Cede & Co. (or such other nominee as may be requested by an authorized representative of DTC) is the responsibility of the City or the Fiscal Agent, disbursement of such payments to Direct Participants will be the responsibility of DTC, and disbursement of such payments to the Beneficial Owners will be the responsibility of Direct and Indirect Participants.

DTC may discontinue providing its services as depository with respect to the Bonds at any time by giving reasonable notice to the City or the Fiscal Agent. Under such circumstances, in the event that a successor depository is not obtained, bond certificates are required to be printed and delivered.

The City may decide to discontinue use of the system of book-entry-only transfers through DTC (or a successor securities depository). In that event, bond certificates will be printed and delivered to DTC.

THE CITY AND THE FISCAL AGENT WILL NOT HAVE ANY RESPONSIBILITY OR OBLIGATION TO DTC PARTICIPANTS OR THE PERSONS FOR WHOM THEY ACT AS NOMINEES WITH RESPECT TO THE ACCURACY OF THE RECORDS OF DTC, ITS NOMINEE OR ANY DTC PARTICIPANT WITH RESPECT TO ANY OWNERSHIP INTEREST IN THE BONDS, OR PAYMENTS TO, OR THE PROVIDING OF NOTICE FOR, DTC PARTICIPANTS OR THE INDIRECT PARTICIPANTS OR BENEFICIAL OWNERS.

**The information in this section concerning DTC and DTC's book-entry system has been obtained from sources that the City believes to be reliable, but the City takes no responsibility for the accuracy thereof. For further information, Beneficial Owners should contact DTC in New York, New York.**

## SECURITY FOR THE BONDS

### Pledge of Project Revenues

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

The City’s regularly scheduled payments under the Swap Agreement are secured on a parity basis by a lien on and security interest in all Project Revenues for the benefit of the Swap Provider and the Bond Insurer. All other obligations of the City under the Swap Agreement, including payments due upon the early termination of the Swap Agreement, are secured by a lien on and security interest in all Project Revenues subordinate to the lien described in the preceding sentence.

### Water and Wastewater Funds

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

Revenue Fund;

Sinking Fund;

Debt Service Account;  
Charges Account; and  
Debt Reserve Account;

Subordinated Bond Fund;

Rate Stabilization Fund;

Residual Fund; and

Construction Fund;

Existing Projects Account;  
Bond Proceeds Account; and  
Capital Account.

The foregoing funds are referred to herein as the “Water and Wastewater Funds.” The General Ordinance also establishes a Rebate Fund, which is not held for the benefit of the holders of the Water and Wastewater Revenue Bonds.

The flow of funds under the General Ordinance and priority of payments are set forth below.

The Water and Wastewater Funds are required under the General Ordinance to be held separate and apart from all other funds and accounts of the City and the Fiscal Agent, and the funds and accounts therein shall not be commingled with, loaned or transferred among themselves or to any other City funds or accounts except as expressly permitted by the General Ordinance.

The City is required by the General Ordinance to cause all Project Revenues received by it on any date to be deposited into the Revenue Fund upon receipt thereof by the City, and the Fiscal Agent shall, upon receipt of Project Revenues, deposit such Project Revenues into the Revenue Fund. The City and Fiscal Agent also shall cause to be deposited into the Revenue Fund such portion of proceeds of Bonds as designated by Supplemental Ordinance or Bond Committee Determination and any other funds directed to be deposited into the Revenue Fund by the City.

If at any time sufficient moneys are not available in the Revenue Fund to pay Operating Expenses and to make the transfers described below under "Application of Project Revenues," then amounts on deposit in the Construction Fund, Rate Stabilization Fund and Residual Fund may be loaned temporarily, at the written direction of the City, to the Revenue Fund for the payment of such Operating Expenses to the extent of the deficiency, until such loaned amounts are required by the Water Department for purposes of the Fund making the loan. If a similar deficiency exists in the Construction Fund, amounts on deposit in the Revenue Fund, Rate Stabilization Fund and Residual Fund may be loaned temporarily, at the written direction of the City, to the Construction Fund, to the extent of the deficiency, until required by the Water Department for purposes of the Fund making the loan.

The City has covenanted in the General Ordinance that it will not direct the Fiscal Agent to transfer, loan or advance proceeds of the Bonds or Project Revenues from the Water and Wastewater Funds to any City account for application other than for Water Department purposes. The General Ordinance permits the application of Project Revenues to pay Interdepartmental Charges and also permits moneys to be transferred in each fiscal year from the Residual Fund to the City's General Fund in an amount not to exceed the lower of (A) all "Net Reserve Earnings" (as defined below) or (B) \$4,994,000. See "LITIGATION AND CLAIMS" herein. "Net Reserve Earnings" shall mean the amount of interest earnings during the fiscal year on amounts in the Debt Reserve Account and the Subordinated Bond Fund less the amount of interest earnings during the fiscal year on amounts in any such reserve funds and accounts giving rise to a rebate obligation pursuant to Section 148(f) of the Code.

### **Application of Project Revenues**

Under the provisions of the General Ordinance, Project Revenues are applied to the extent available in the following order of priority: (i) payment of Operating Expenses; (ii) payment of the principal or redemption price of and interest on Water and Wastewater Revenue Bonds issued under the General Ordinance (except Subordinated Bonds), payments under any swap agreement, payments under a Credit Facility to repay advances thereunder to pay any of the foregoing and payments with respect to fees and expenses in respect of a Credit Facility; (iii) payments into the Debt Reserve Account to the extent necessary to cure a deficiency therein; (iv) payments into any debt reserve account established within the Sinking Fund and not held for the equal and ratable benefit of all Water and Wastewater Revenue Bonds (other than Subordinated Bonds) to the extent necessary to cure a deficiency therein; (v) payment of principal or redemption price of and interest on Subordinated Bonds; (vi) all payments other than regularly scheduled swap payments, including, without limitation, payments due to Citigroup Financial Products Inc. (as successor to Salomon Brothers Holding Company, Inc.) upon the early termination of the two swap transactions executed by the City on December 5, 2002 and amounts, other than amounts to pay advances under the standby bond purchase agreement dated as of May 1, 2005

between the City and DEPFA BANK plc, acting through its New York Branch; (vii) transfer to the City the amount necessary to pay General Obligation Bonds issued for the Water and Wastewater Systems; (viii) transfer to the Rate Stabilization Fund the amount determined by the Water Commissioner; (ix) transfer to the Capital Account of the Construction Fund the sum of the Capital Account Deposit Amount, the Debt Service Withdrawal and the Operating Expense Withdrawal, less any amounts transferred to the Capital Account from the Residual Fund; and (x) transfer to the Residual Fund any amount remaining on deposit in the Revenue Fund.

### **Debt Reserve Account**

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

The City is considering and evaluating the option of providing a surety bond, an insurance policy or an irrevocable letter of credit in lieu of some or all of the funds and investments currently held in the Debt Reserve Account. Under the terms of the General Ordinance, any surety bond, insurance policy or letter of credit provided by the City in lieu of required deposits within the Debt Reserve Fund would have to meet the credit quality requirements of the General Ordinance. The insurer providing a surety bond or insurance policy is required to be an insurer whose municipal bond insurance policies insuring the payment of bond issues results in such issues being rated not lower than the second highest rating category (without regard to ratings subcategories) by either Moody's Investors Service, Inc. ("Moody's") or Standard & Poor's Ratings Services, a division of the McGraw-Hill Companies, Inc. ("S&P"). The letter of credit issuer providing a letter of credit is required to be a bank or trust company which is rated not lower than the second highest rating category (without regard to ratings subcategories). See APPENDIX III – "SUMMARIES OF CERTAIN AUTHORIZATIONS FOR THE BONDS – The Restated General Water and Wastewater Revenue Bond Ordinance of 1989 – Debt Reserve Account."

### **Rate Covenants**

The Rate Covenant contained in the General Ordinance requires the City to establish rents, rates, fees and charges for the use of the Water and Wastewater Systems sufficient to yield Net Revenues, as defined therein, in each fiscal year at least equal to 1.20 times the Debt Service Requirements for such Fiscal Year (recalculated to exclude therefrom principal and interest payments in respect of Subordinated Bonds). In addition, Net Revenues, in each fiscal year, must be at least equal to 1.00 times: (i) the Debt Service Requirements for such fiscal year (including Debt Service Requirements in respect of Subordinated Bonds); (ii) amounts required to be deposited into the Debt Reserve Account during such fiscal year; (iii) the principal or redemption price of and interest on General Obligation Bonds issued for the Water and Wastewater Systems payable in such fiscal year; (iv) debt service requirements on Interim



Debt payable in such fiscal year; and (v) the Capital Account Deposit Amount for such fiscal year, less amounts transferred from the Residual Fund to the Capital Account during such fiscal year. To ensure compliance with the rate covenant, the General Ordinance requires that the City review its rents, rates, fees and charges not less than once in each Fiscal Year. For a discussion of the Water Department's experience in meeting the rate covenant, see "RATES – Compliance with Rate Covenants" herein.

### **Insurance Covenants**

In addition to the rate covenant described above, for each fiscal year ending on or after June 30, 2000, the City has covenanted to the Fiscal Agent, for the benefit of Financial Guaranty Insurance Company ("FGIC"), for so long as the Series 1993 Bonds and the Series 1995 Bonds insured by FGIC are outstanding, to establish rates and charges for the use of the Water and Wastewater Systems sufficient to yield Net Revenues (excluding amounts transferred from the Rate Stabilization Fund into the Revenue Fund during, or as of the end of, such fiscal year) at least equal to 90% of the Debt Service Requirements (excluding debt service due on any Subordinated Bonds) in such fiscal year; and that, in addition to the conditions described below under "Additional Bonds," any calculation by a Consulting Engineer of projected rate covenant compliance in connection with the proposed issuance of additional Bonds for each fiscal year ending on or after June 30, 2000 must state that Net Revenues (excluding amounts transferred from the Rate Stabilization Fund into the Revenue Fund during, or as of the end of, such fiscal year) in each fiscal year included in the projection period are projected to be at least equal to 90% of the Debt Service Requirements (excluding debt service due on any Subordinated Bonds) in such fiscal year. The foregoing agreements are for the benefit of FGIC only and may be amended or waived by FGIC in their sole discretion without the consent of holders of the Bonds.

The City also has covenanted to the Fiscal Agent in the manner described in the preceding paragraph for the benefit of the Bond Insurer, for so long as the Series 2003 Bonds and the Bonds insured by the Bond Insurer are outstanding. The City expects to further covenant to the Fiscal Agent in the manner described in the preceding paragraph, for the benefit of the Bond Insurer, with respect to the Series 2005A Bonds, which will be insured by the Bond Insurer.

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

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

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

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

The enforcement of remedies available to Bondholders (or the Fiscal Agent or any trustee for Bondholders) under the Act or the General Ordinance may be limited as described herein under “REMEDIES OF BONDHOLDERS.”

### **Additional Bonds**

The General Ordinance permits the issuance of additional Bonds which may be secured on a parity with the Outstanding Bonds and the Bonds. The General Ordinance imposes certain conditions on the issuance of additional bonds thereunder, including the condition that a report of a Consulting Engineer be delivered to City Council stating that the Net Revenues are currently sufficient to comply with the rate covenant and are projected to be sufficient to comply with the rate covenant for each of the two fiscal years following the Fiscal Year in which additional Water and Wastewater Revenue Bonds are to be issued; provided that if interest on additional Water and Wastewater Revenue Bonds or a portion thereof has been capitalized, the projection shall extend to the two Fiscal Years following the fiscal year up to which interest has been capitalized. See APPENDIX III – “SUMMARIES OF CERTAIN AUTHORIZATIONS FOR THE BONDS” for a discussion of the circumstances under which additional Water and Wastewater Revenue Bonds may be issued under the General Ordinance.

### **Transfer to an Authority**

The City is authorized under the General Ordinance, upon the satisfaction of the conditions specified in the General Ordinance, to convey and assign to a municipal authority or another entity all or substantially all of the City’s right, title and interest in the Water and Wastewater Systems and thereupon to be released from all of its obligations under the General Ordinance and under the Water and Wastewater Revenue Bonds.

For a further discussion of the funds and accounts, priority of payment, the rate covenant, transfer of the Water and Wastewater Systems and other provisions of the General Ordinance, see APPENDIX III – “SUMMARIES OF CERTAIN AUTHORIZATIONS FOR THE BONDS.”

## **BOND INSURANCE**

### **Bond Insurance Policy**

Concurrently with the issuance of the Bonds, the Bond Insurer will issue its Bond Insurance Policy for the Bonds. The Bond Insurance Policy guarantees the scheduled payment of principal of and interest on the Bonds when due as set forth in the form of the Policy included as an exhibit to this Official Statement.

The Bond Insurance Policy is not covered by any insurance security or guaranty fund established under New York, California, Connecticut or Florida insurance law.

### **Financial Security Assurance Inc.**

Financial Security Assurance Inc., the Bond Insurer, is a New York domiciled financial guaranty insurance company and a wholly owned subsidiary of Financial Security Assurance Holdings Ltd. (“Holdings”). Holdings is an indirect subsidiary of Dexia, S.A., a publicly held Belgian corporation, and of Dexia Credit Local, a direct wholly-owned subsidiary of Dexia, S.A. Dexia, S.A., through its bank subsidiaries, is primarily engaged in the business of public finance, banking and asset management in France, Belgium and other European countries. No shareholder of Holdings or the Bond Insurer is liable for the obligations of Financial Security.

At December 31, 2004, the Bond Insurer's total policyholders' surplus and contingency reserves were approximately \$2,280,883,000 and its total unearned premium reserve was approximately \$1,649,230,000 in accordance with statutory accounting principles. At December 31, 2004, the Bond Insurer's total shareholder's equity was approximately \$2,699,786,000 and its total net unearned premium reserve was approximately \$1,342,057,000 in accordance with generally accepted accounting principles.

The financial statements included as exhibits to the annual and quarterly reports filed by Holdings with the Securities and Exchange Commission are hereby incorporated herein by reference. Also incorporated herein by reference are any such financial statements so filed from the date of this Official Statement until the termination of the offering of the Bonds. Copies of materials incorporated by reference will be provided upon request to Financial Security Assurance Inc.: 350 Park Avenue, New York, New York 10022, Attention: Communications Department (telephone (212) 826-0100).

The Bond Insurance Policy does not protect investors against changes in market value of the Bonds, which market value may be impaired as a result of changes in prevailing interest rates, changes in applicable ratings or other causes. The Bond Insurer makes no representation regarding the Bonds or the advisability of investing in the Bonds. The Bond Insurer makes no representation regarding the Official Statement, nor has it participated in the preparation thereof, except that the Bond Insurer has provided to the Issuer the information presented under this caption for inclusion in the Official Statement.

#### **THE LIQUIDITY FACILITY AND THE LIQUIDITY FACILITY PROVIDER**

*There follows under this caption certain information concerning the Liquidity Facility and the Liquidity Facility Provider, DEPFA BANK plc, acting through its New York Branch. No representation is made by the City, the Underwriter or its counsel as to the accuracy, completeness or adequacy of such information, or as to the absence of any materially adverse changes in such information subsequent to the date hereof. Neither the City, the Underwriter nor its counsel has made any independent investigation of the Liquidity Facility Provider or the Liquidity Facility.*

#### **The Liquidity Facility**

In accordance with the Variable Rate Securities Agreement, the City will cause to be executed and delivered to the Tender Agent, simultaneously with the issuance of the Bonds, a Liquidity Facility, by and between the City and the Liquidity Facility Provider, providing for the purchase, in accordance with the terms thereof, of Bonds, which are in a Daily Interest Rate or a Weekly Interest Rate and are tendered for purchase, as provided in the Variable Rate Securities Agreement, and not remarketed. The Liquidity Facility contains various provisions, covenants and conditions, certain of which are summarized below. Various words or terms used in the following summary are defined in this Official Statement, the Liquidity Facility, the Variable Rate Securities Agreement and the General Ordinance, and reference thereto is made for full understanding of their import.

**General.** The purchase price of each Bond tendered for purchase is payable from the proceeds of the remarketing of such Bond and, to the extent remarketing proceeds are insufficient or not available therefor, from amounts available under the Liquidity Facility. The Liquidity Facility requires the Liquidity Facility Provider to provide funds for the purchase of Bonds which are "Eligible Bonds" (as defined in the Liquidity Facility), subject to certain conditions described below. Bonds to be purchased and held by the Liquidity Facility Provider will become "Purchased Bonds" and will bear interest at the Purchased Bond Rate in accordance with (and as defined in) the Liquidity Facility.

The amount of the Liquidity Facility at any one time is determined by adding the Available Principal Commitment and the Available Interest Commitment therefor. The Available Principal

Commitment is equal to the initial principal amount of the Bonds adjusted from time to time as follows: (a) downward by the amount of any reduction of the Available Principal Commitment, (b) downward by the principal amount of any Bonds purchased by the Liquidity Facility Provider pursuant to the Liquidity Facility and (c) upward by the principal amount of any Bonds purchased by the Liquidity Facility Provider which are resold by a holder of Purchased Bonds pursuant to the Liquidity Facility or which cease to bear interest at the Purchased Bond Rate. The Available Interest Commitment is equal to one hundred eighty-five (185) days' interest on the Bonds, computed as if the Bonds bore interest at the rate of twelve percent (12%) per annum. The Available Interest Commitment may be adjusted from time to time downward by an amount that bears the same proportion to such amount as the amount of a reduction in the Available Principal Commitment as described in clause (a) or (b) of this paragraph and upward by an amount that bears the same proportion to such amount as the amount of any increase described in clause (c) of this paragraph.

The Liquidity Facility will be effective on the date of delivery of the Bonds (the "Effective Date") and shall be effective from the Effective Date to and including 5:00 p.m. on the earliest of (a) (i) May 4, 2012, or (ii) the last day of any extension of such date pursuant to the Liquidity Facility (the "Stated Expiration Date"), (b) the date of receipt by the Liquidity Facility Provider of a certificate signed by the Tender Agent stating that the Liquidity Facility has been terminated pursuant to the terms of the Variable Rate Securities Agreement because (i) an Alternate Liquidity Facility has been provided and become effective under the Variable Rate Securities Agreement (provided that the Liquidity Facility shall not terminate until DEPFA has purchased any Bonds required to be purchased pursuant to any mandatory tender resulting from the provision of any Alternate Liquidity Facility), (ii) no Bonds remain Outstanding under the Variable Rate Securities Agreement or (iii) all of the Bonds have been converted to a Non-Covered Interest Rate (as defined in the Liquidity Facility), (c) the date specified in a written notice delivered by the City to DEPFA and the Remarketing Agent that the City has elected to terminate the Liquidity Facility or (d) the Purchase Termination Date (as defined in the Liquidity Facility).

On each date on which Bonds are to be purchased by the Liquidity Facility Provider pursuant to an optional tender or mandatory tender for purchase, by no later than 12:30 p.m., New York time, the Tender Agent will give notice to the Liquidity Facility Provider of the Bonds required to be purchased and the amount of principal and interest, respectively, required for such purchase. Upon receipt of such notice, the Liquidity Facility Provider, subject to satisfaction of the conditions precedent to purchase as set forth in the Liquidity Facility, shall, by no later than 2:30 p.m., New York time, transfer to the Tender Agent, in immediately available funds, an amount equal to the aggregate purchase price of all Bonds required to be purchased by the Liquidity Facility Provider.

The obligations of the Liquidity Facility Provider to purchase Bonds pursuant to the Liquidity Facility is subject to the conditions precedent that no Termination Event or Potential Event of Termination has occurred and is continuing and that the Liquidity Facility Provider has timely received a properly completed Notice of Purchase (as defined in the Liquidity Facility).

**AS DESCRIBED BELOW, THE LIQUIDITY FACILITY PROVIDES THAT THE OBLIGATION OF THE LIQUIDITY FACILITY PROVIDER TO PURCHASE BONDS TENDERED OR DEEMED TENDERED FOR PURCHASE MAY BE IMMEDIATELY SUSPENDED OR TERMINATED UPON THE OCCURRENCE OF CERTAIN EVENTS WITHOUT NOTICE TO THE OWNERS. IN SUCH EVENT, SUFFICIENT FUNDS MAY NOT BE AVAILABLE TO PURCHASE BONDS TENDERED OR DEEMED TENDERED FOR PURCHASE. FAILURE TO PAY THE PURCHASE PRICE OF BONDS TENDERED OR DEEMED TENDERED FOR PURCHASE SHALL NOT CONSTITUTE AN EVENT OF DEFAULT UNDER THE GENERAL ORDINANCE.**

## Events of Termination Permitting Immediate Termination or Suspension

The following Events of Termination would permit the Liquidity Facility Provider either to terminate or suspend the Liquidity Facility without prior notice, all as more fully described below:

(a) ***Non-Payment of Insured Amounts.*** Any principal or interest due on the Bonds is not paid when due and such principal or interest is not paid by the Bond Insurer when, as, and in the amounts required to be paid pursuant to the terms of the Bond Insurance Policy; or

(b) ***Invalidity or Contest of Validity of Bond Insurance Policy.*** (i) The Bond Insurer shall in writing to the Tender Agent claim that the Bond Insurance Policy with respect to the payment of principal of or interest on the Bonds is not valid and binding on the Bond Insurer and repudiate the obligations of the Bond Insurer under the Bond Insurance Policy with respect to payment of principal of or interest on the Bonds, or the Bond Insurer shall initiate any legal proceedings to seek an adjudication that the Bond Insurance Policy, with respect to the payment of principal, interest, or the special redemption of the Bonds pursuant to the Liquidity Facility, is not valid and binding on the Bond Insurer, or (ii) any court or Governmental Authority (as defined in the Liquidity Facility) with jurisdiction to rule on the validity of the Bond Insurance Policy shall announce, find or rule that the Bond Insurance Policy is not valid and binding on the Bond Insurer; or

(c) ***Bond Insurer Insolvency; Bond Insurer Downgrade Below Investment Grade.*** Either (i) the occurrence of a Bond Insurer Event of Insolvency (as defined below), (ii) the reduction of the financial strength rating assigned to the Bond Insurer, in the case of S&P, below “BBB-”, in the case of Moody’s, below “Baa3”, and, in the case of Fitch Ratings (“Fitch”), below “BBB-,” or (iii) each of Moody’s, S&P and Fitch shall suspend or withdraw such financial strength rating for credit related reasons and each rating, so suspended or withdrawn, is not reinstated within thirty (30) days of the date of such suspension or withdrawal; or

(d) ***Bond Insurer Default on other Policies.*** Any default by the Bond Insurer in making payment when, as and in the amounts required to be made pursuant to the express terms and provisions of any other municipal bond insurance policy issued by the Bond Insurer insuring publicly-rated bonds and such failure shall continue for thirty (30) days unless the obligation of the Bond Insurer to pay is being contested by the Bond Insurer in good faith by appropriate proceedings; or

(e) ***Substitution of Bond Insurer or Termination of Bond Insurance Policy.*** The Bond Insurer is substituted as insurer of the Bonds, without DEPFA’s prior written consent, or the Bond Insurance Policy is surrendered, cancelled or terminated, or amended or modified in any material respect, without DEPFA’s prior written consent.

“*Bond Insurer Event of Insolvency*” means the occurrence and continuance of one or more of the following events: (a) the issuance, under Article 74 of the Insurance Law of New York or any successor provision thereof (or any other law to which the Bond Insurer is at the time subject), of an order for relief, rehabilitation, reorganization, conservation, liquidation or dissolution of the Bond Insurer that is not dismissed within ninety (90) days; (b) the commencement by the Bond Insurer of a voluntary case or other proceeding seeking an order for relief, liquidation, supervision, rehabilitation, conservation, reorganization or dissolution with respect to itself or its debts under the laws of the state of incorporation or formation of the Bond Insurer or any bankruptcy, insolvency or other similar law now or hereafter in effect including, without limitation, the appointment of a trustee, receiver, liquidator, conservator, custodian or other similar official for itself or any substantial part of its property; (c) the consent of the Bond Insurer to any relief referred to in the preceding clause (b) in an involuntary case or other proceeding commenced against it; (d) the making by the Bond Insurer of an assignment for the benefit of

creditors; (e) the failure of the Bond Insurer generally to pay its debts or claims as they become due; *provided* that any failure by the Bond Insurer to make payment on any municipal bond insurance policy (i) that is being contested in good faith or (ii) with respect to which thirty (30) days have not elapsed, shall not constitute a failure by the Bond Insurer generally to pay its debts or claims as they become due; or (f) the initiation by the Bond Insurer of any actions to authorize any of the foregoing.

### **Remedies of Immediate Termination or Suspension**

Upon the occurrence of an Event of Termination described in clauses (a) through (e) above, the Liquidity Facility Provider has the following remedies:

**Immediate Termination.** In the case of an Event of Termination described in clause (a), (b)(i), (c)(i), (c)(ii), (d) or (e) under the heading “Events of Termination Permitting Immediate Termination or Suspension,” the Available Commitment and the obligation of the Liquidity Facility Provider to purchase Bonds shall immediately terminate without notice or demand and, thereafter, the Liquidity Facility Provider shall be under no obligation to purchase Bonds. Promptly upon Liquidity Facility Provider obtaining knowledge of an Event of Termination described in clause (a), (b)(i), (c)(i), (c)(ii), (d) or (e) under the heading “Events of Termination Permitting Immediate Termination or Suspension,” Liquidity Facility Provider shall give written notice of the same to the Tender Agent, the City, the Remarketing Agent and the Bond Insurer; *provided*, that the Liquidity Facility Provider shall incur no liability or responsibility whatsoever by reason of its failure to give such notice and such failure shall in no manner affect the immediate termination of the Available Commitment and of the Liquidity Facility Provider’s obligation to purchase Bonds pursuant to the Liquidity Facility.

**Suspension.** In the case of an Event of Termination described in clause (b)(ii) (a “Potential Event of Termination”) under the heading “Events of Termination Permitting Immediate Termination or Suspension,” the Liquidity Facility Provider’s obligations to purchase Bonds shall be immediately suspended without notice or demand and, thereafter, the Liquidity Facility Provider shall be under no obligation to purchase until the Available Commitment is reinstated as described in this paragraph. Promptly upon the Liquidity Facility Provider obtaining knowledge of any Potential Event of Termination specified in clause (b)(ii) under the heading “Events of Termination Permitting Immediate Termination or Suspension,” the Liquidity Facility Provider shall give written notice of the same to the City, the Tender Agent, the Remarketing Agent and the Bond Insurer of such suspension; *provided*, that the Liquidity Facility Provider shall incur no liability or responsibility whatsoever by reason of its failure to give such notice and such failure shall in no way affect the suspension of the Liquidity Facility Provider’s obligations to purchase Bonds. If a court with jurisdiction to rule on the validity of the Bond Insurance Policy shall thereafter enter a final, non-appealable judgment that the Bond Insurance Policy is not valid and binding on the Bond Insurer, then the Liquidity Facility Provider’s obligation to purchase Bonds shall immediately terminate. If a court with jurisdiction to rule on the validity of the Bond Insurance Policy shall find or rule that the Bond Insurance Policy is valid and binding on the Bond Insurer, the Liquidity Facility Provider’s obligations to purchase Bonds under the Liquidity Facility shall be automatically reinstated and the terms of the Liquidity Facility will continue in full force and effect (unless the Liquidity Facility shall otherwise have terminated or been suspended by its terms or in accordance with the Liquidity Facility). Notwithstanding the foregoing, if, upon the earlier of the Stated Expiration Date or the date which is three (3) years after the effective date of suspension of the Liquidity Facility Provider’s obligations described in this paragraph, litigation is still pending and a judgment regarding the validity of the Bond Insurance Policy as is the subject of such Potential Event of Termination has not been obtained, then the Available Commitment and the obligation of the Liquidity Facility Provider to purchase Bonds shall at such time immediately terminate and, thereafter, the Liquidity Facility Provider shall be under no obligation to purchase Bonds.

In addition to the foregoing, during the pendency of an Event of Termination described in (X) clause (c)(i) (but solely with respect to an order for relief, rehabilitation, reorganization, conservation, liquidation, or dissolution of the Bond Insurer that is not dismissed within ninety (90) days), (Y) clause (c)(iii) (prior to the expiration of the thirty (30) day period specified in said clause (c)(iii)) or (Z) clause (d) (prior to the expiration of the thirty (30) day period specified in clause (d)), each as described under the heading “Events of Termination Permitting Immediate Termination or Suspension” and each being referred to as a “Potential Event of Termination”, the Liquidity Facility Provider’s obligations to purchase Bonds shall be immediately suspended without notice or demand and, thereafter, the Liquidity Facility Provider shall be under no obligation to purchase Bonds until the Available Commitment is reinstated as described in this paragraph. Promptly upon the Liquidity Facility Provider obtaining knowledge of any such Potential Event of Termination, the Liquidity Facility Provider shall give written notice of the same to the City, the Tender Agent, the Remarketing Agent and the Bond Insurer of such suspension; *provided, however,* that the Liquidity Facility Provider shall incur no liability or responsibility whatsoever by reason of its failure to give such notice and such failure shall in no way affect the suspension of the Liquidity Facility Provider’s obligations under the Liquidity Facility. In the event such Potential Event of Termination is cured prior to becoming an Event of Termination Event, the Liquidity Facility Provider’s obligations shall be automatically reinstated and the terms of the Liquidity Facility will continue in full force and effect (unless the Liquidity Facility shall otherwise have terminated or been suspended by its terms or in accordance with the Liquidity Facility).

### **Events of Default**

The following Events of Default do NOT permit immediate termination or suspension, but do allow the Liquidity Facility Provider to exercise other remedies:

(a) ***Permitted Minimum Bond Insurer Rating.*** The Bond Insurer shall fail to maintain financial strength ratings assigned to the Bond Insurer of “A1”, “A+” or “A+” or higher by any two of Moody’s, S&P or Fitch, respectively, for a period of thirty (30) consecutive days; or

(b) ***Non–Payment of Fees.*** Non–payment of specified fees payable to the Liquidity Facility Provider to maintain and continue the Liquidity Facility (together with interest thereon at the Default Rate) within ten (10) days after the Tender Agent, the Bond Insurer and the City have received written notice from the Liquidity Facility Provider that the same were not paid when due; or

(c) ***Misrepresentation.*** Any material representation or warranty made by the City under or in connection with the Liquidity Facility shall prove to be untrue in any material respect on the date as of which it was made; or

(d) ***Other Non–Payments.*** Non–payment of any other fees or amounts payable under the Liquidity Facility (together with interest thereon at the Default Rate), other than the fees described in clause (b) above, within twenty (20) days after written notice thereof is provided by the Liquidity Facility Provider to the City, the Tender Agent and the Bond Insurer; or

(e) ***Certain Breaches.*** The breach by the City of certain specified covenants within the Liquidity Facility; or

(f) ***Other Breaches.*** The breach by the City of any terms or provisions of the Liquidity Facility for which no cure period is otherwise specifically provided with respect thereto which is not remedied within thirty (30) days after written notice thereof from the Liquidity Facility Provider shall have been received by the City and the Bond Insurer; or

(g) **Insolvency.** (i) The City shall commence any case, proceeding or other action (A) under any existing or future law of any jurisdiction, domestic or foreign, relating to bankruptcy, insolvency, reorganization or relief of debtors, seeking to have an order for relief entered with respect to it, or seeking to adjudicate it a bankrupt or insolvent, or seeking reorganization, arrangement, adjustment, winding-up, liquidation, dissolution, composition or other relief with respect to it or its debts, or (B) seeking appointment of a receiver, trustee, custodian or other similar official for it or for all or any substantial part of its assets, or the City shall make a general assignment for the benefit of its creditors; or (ii) there shall be commenced against the City any case, proceeding or other action of a nature referred to in clause (i) above which (A) results in an order for such relief or in the appointment of a receiver or similar official or (B) remains undismissed, undischarged or unbonded for a period of sixty (60) days; or (iii) there shall be commenced against the City any case, proceeding or other action seeking issuance of a warrant of attachment, execution, distraint or similar process against all or any substantial part of its assets, which results in the entry of an order for any such relief which shall not have been vacated, discharged, or stayed or bonded pending appeal within sixty (60) days from the entry thereof; or (iv) the City shall take any action in furtherance of, or indicating its consent to, approval of, or acquiescence in, any of the acts set forth in clause (i), (ii) or (iii) above; or (v) the City shall generally not, or shall be unable to, or shall admit in writing its inability to, pay its debts; or

(h) **Invalidity.** Any material provision of the Liquidity Facility or any other Related Documents (as defined in the Liquidity Facility) shall at any time for any reason cease to be valid and binding on the City or shall be declared to be null and void, or the validity or enforceability thereof shall be contested by the City or by any Governmental Authority having jurisdiction, or the City shall deny that it has any further liability or obligation under any such document, or such document is cancelled or terminated without the Liquidity Facility Provider's prior written consent; or

(i) **Cross-Default.** The occurrence of any "event of default" as defined in any of the other Related Documents (which is not waived pursuant to the terms thereof) which is not otherwise described under this heading "Events of Default", other than the failure of the Liquidity Facility Provider to provide funds for the purchase of Eligible Bonds when required by the terms and conditions of the Liquidity Facility; or

(j) **Other Debt.** The City shall have defaulted in the payment or performance of any obligation of a principal amount of \$25,000,000 or more constituting Debt, and such default permits the acceleration of the payment of moneys in connection therewith.

### **Remedies Following Events of Default**

The following remedies will be available to the Liquidity Facility Provider upon the occurrence of any Event of Default:

**Termination with Notice.** In the case of an Event of Default described in clause (a) or (b), under the heading "Events of Default," the Liquidity Facility Provider may terminate the Available Commitment and its obligation to purchase Eligible Bonds by giving written notice to the Tender Agent, the City, the Remarketing Agent and the Bond Insurer, specifying the date on which the Available Commitment and its obligation to purchase Eligible Bonds shall terminate, which date shall be not less than thirty (30) days from the date of receipt of such notice by the Tender Agent and, on and after such date, the Liquidity Facility Provider shall be under no further obligation to purchase Bonds under the Liquidity Facility other than Bonds which are the subject of a Notice of Purchase pursuant to the Liquidity Facility received by the Liquidity Facility Provider prior to such date.



**Other Remedies.** In addition to the rights and remedies described herein, in the case of any Event of Termination or any Event of Default described above, upon the election of the Liquidity Facility Provider: (i) all amounts payable under the Liquidity Facility (other than payments of principal and redemption price of and interest on the Bonds) shall, upon notice to the City, become immediately due and payable without presentment, demand, protest or further notice of any kind, all of which are hereby expressly waived by the City; and (ii) the Liquidity Facility Provider shall have all the rights and remedies available to it under the Liquidity Facility, the other Related Documents, the Bond Insurance Policy or otherwise pursuant to law or equity; *provided, however*, that the Liquidity Facility Provider shall not have the right to terminate its obligation to purchase Bonds or to declare any amount due under the Liquidity Facility due and payable except as expressly provided in the Liquidity Facility, or to accelerate the maturity date of any Bonds except as provided in the General Ordinance, the Variable Rate Securities Agreement, or both, as the case may be. Without limiting the generality of the foregoing, the Liquidity Facility Provider agrees to purchase Bonds on the terms and conditions of the Liquidity Facility notwithstanding the institution or pendency of any bankruptcy, insolvency or similar proceeding with respect to the City. The Liquidity Facility Provider will not assert as a defense to its obligation to purchase Bonds under the Liquidity Facility (y) the institution or pendency of a bankruptcy, insolvency or similar proceeding with respect to the City, or (z) a determination by a court of competent jurisdiction in a bankruptcy, insolvency or similar proceeding with respect to the City that the Liquidity Facility is not enforceable against the City under applicable bankruptcy, insolvency or similar laws. This paragraph shall not limit the exercise of the Liquidity Facility Provider's remedies expressly provided for under the Liquidity Facility.

**Default Rate.** Upon the occurrence of an Event of Termination, all amounts due under the Liquidity Facility or under any Purchased Bonds shall bear interest at the Default Rate.

### **The Liquidity Facility Provider**

*The following information has been provided by the Liquidity Facility Provider for use in this Official Statement. Such information is not guaranteed as to accuracy or completeness by, and is not to be construed as a representation by, the City, the Underwriter or its counsel. This information has not been independently verified by the City, the Underwriter or its counsel. No representation is made by the City, the Underwriter or its counsel as to the accuracy or adequacy of such information or as to the absence of material adverse changes in such information subsequent to the date hereof.*

DEPFA BANK plc, the Liquidity Facility Provider, is the parent company of the DEPFA BANK plc group of companies comprising the Liquidity Facility Provider and its consolidated subsidiaries (the "Group"). The Liquidity Facility Provider will act through its New York Branch, which is licensed by the Banking Department of the State of New York as an unincorporated branch of DEPFA BANK plc, Dublin. The Liquidity Facility Provider is based in Dublin and has a banking license from the Irish Financial Services Regulatory Authority as part of the Central Bank and Financial Services Authority of Ireland (formerly the Central Bank of Ireland). It is registered in the Irish companies Registration Office with company number 348819 and its shares are listed on the Frankfurt Stock Exchange. The Liquidity Facility Provider has a network of subsidiaries, branches and offices across many European countries, as well as in North America and Asia.

The Group provides a broad range of products and services to public sector entities, from governmental budget financing and financing of infrastructure projects to placing of public sector assets and investment banking and other advisory services. The Group has direct client contacts with many state entities and focuses on those public sector entities involved in large volume business. The Group advises individual public sector borrowers on their international capital market transactions and preparations for the ratings process.

As of December 31, 2004, the Liquidity Facility Provider had total consolidated assets of Euro 190.4 billion, shareholders' equity of Euro 1.9 billion and consolidated net income of Euro 540 million, determined in accordance with the United States generally accepted accounting principles (US GAAP). The Liquidity Facility Provider maintains its records and prepares its financial statements in Euro. At December 31, 2004, the exchange rate was 1.0000 Euro equals 1.3621 United States dollars. Such exchange rate fluctuates from time to time.

The Liquidity Facility Provider is rated "Aa3" long-term and "P-1" short-term by Moody's, "AA-" long-term and "A-1+" short-term by S&P, and "AA-" long-term and "F1+" short-term by Fitch. Currently, the long-term ratings of DEPFA BANK plc and related entities are on negative outlook at Moody's, although the Liquidity Facility Provider's short-term ratings have not been affected.

The Liquidity Facility Provider will provide without charge a copy of its most recent publicly available annual report. Written requests should be directed to: DEPFA BANK plc, New York Branch, 623 Fifth Avenue, 22<sup>nd</sup> Floor, New York, New York 10022, Attention: General Manager. The delivery of this information shall not create any implication that the information contained or referred to herein is correct as of any time subsequent to its date. In addition, updated financial information may be found from the Liquidity Facility Provider website at: [www.depfa.com](http://www.depfa.com).

## **REMEDIES OF BONDHOLDERS**

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

The ultimate enforcement of Bondholders' rights upon any default by the City in the performance of its obligations under the Act, the General Ordinance and the Bonds will depend upon the application of remedies provided in the Act, the General Ordinance and other applicable laws. Litigation may be necessary to obtain relief in accordance with these remedies. Such litigation may be protracted and costly. Remedies such as mandamus, specific performance or injunctive relief are equitable remedies, which are subject to the discretion of the court.

Enforcement of Bondholders' rights may be limited by and is subject to the provisions of the Federal Bankruptcy Code, as now or hereafter enacted, and to other laws or legal or equitable principles which may affect the enforcement of creditors' rights. The Pennsylvania Intergovernmental Cooperation Authority Act for Cities of the First Class (the "PICA Act") prevents the City from filing a petition for relief under Chapter 9 of the Federal Bankruptcy Code ("Chapter 9") as long as the Pennsylvania Intergovernmental Cooperation Authority has outstanding any bonds issued pursuant to the PICA Act, and if no such bonds were outstanding, requires approval in writing by the Governor of the Commonwealth for a filing under Chapter 9 by the City. See APPENDIX IV – "CERTAIN INFORMATION CONCERNING THE CITY OF PHILADELPHIA – Pennsylvania Intergovernmental Cooperation Authority."

The filing of a petition under Chapter 9 operates as an automatic stay of the commencement or continuation of any judicial or other proceeding against the debtor or its property. However, a petition filed under Chapter 9 does not operate as a stay of application of pledged special revenues to the payment

of indebtedness secured by such revenues. Special revenues include receipts derived from the ownership or operation of systems that are used to provide utility services and the proceeds from borrowing to finance such systems. The Federal Bankruptcy Code further provides that special revenues acquired by the debtor after the commencement of a Chapter 9 case shall remain subject to any lien resulting from any security agreement entered into by the debtor before the commencement of the case. However, the lien on special revenues derived from a system will be subject to the payment of the necessary operating expenses of that system. Therefore, Project Revenues acquired by the City after the filing of a Chapter 9 petition will remain subject to the lien of the General Ordinance in favor of the Bondholders, but will be subject to the payment of the Water and Wastewater Systems' necessary operating expenses as determined by the City. The Federal Bankruptcy Code also provides that a transfer of property of a debtor to or for the benefit of a bondholder, on account of such bond, may not be avoided as a preferential transfer.

Unless the debtor consents or the plan proposed under Chapter 9 so provides, the bankruptcy court may not interfere with any of the property or revenues of a Chapter 9 debtor or with such debtor's use or enjoyment of any income-producing property. Accordingly, if the City decided to use Bond proceeds, the Project Revenues or the Water and Wastewater Funds pledged for the benefit of the Bondholders for other than Water Department purposes, a bankruptcy court would not 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 Bond proceeds, the Project Revenues and the Water and Wastewater Funds to pay Bondholders.

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

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

## **THE WATER DEPARTMENT**

### **General**

The Water Department was established by the City pursuant to the Charter with the power and duty to operate, maintain, repair and improve the City's Water and Wastewater Systems. The Charter requires the Water Department to fix and regulate rates and charges for supplying water and for wastewater treatment service in accordance with standards established by City Council. Such standards must enable the City to realize from rates and charges an amount at least equal to operating expenses and debt service charges on any debt incurred or to be incurred for the Water and Wastewater Systems, and proportionate charges for all services performed for the Water Department by all officers, departments, boards or commissions of the City. See "RATES" below. The Charter also authorizes the Water

Department, with the authorization of City Council, to enter into contracts for supplying water service and sewer and sewage disposal service to users outside the limits of the City.

The operations of the Water Department are accounted for in the Water Fund, which is an enterprise fund of the City. The Water Fund is an accounting convention established pursuant to the Charter for the purpose of accounting for the assets, liabilities, revenues, expenses and rate covenant compliance on a legally enacted basis for the Water and Wastewater Systems. See APPENDIX I – “FINANCIAL STATEMENTS OF THE WATER FUND FOR FISCAL YEARS ENDED JUNE 30, 2004 AND 2003” hereto.

The Water and Wastewater Funds are funds required by the General Ordinance to be established and maintained with the Fiscal Agent for so long as the Bonds are outstanding for the purpose of segregating Bond proceeds and Project Revenues from other funds of the City not held exclusively for Water Department purposes.

### **Administration**

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

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

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

**Bernard Brunwasser** was appointed Water Commissioner in April, 2004. Previously, Mr. Brunwasser served as Deputy Water Commissioner and General Manager of the Finance Division since January 1989. He holds a B.A. degree from Pennsylvania State University and has attended Temple University’s School of Public Administration. Since joining the Water Department in 1970, Mr. Brunwasser has held a number of increasingly responsible administrative and managerial positions in both the Operations and Finance Division. He currently serves on the American Water Works Association’s Finance, Accounting and Management Controls Committee of the Management Division.

**Joseph S. Clare, III** was appointed Acting Deputy Commissioner in August 2004. Mr. Clare previously served as General Manager of Finance since 2003 and Administrative Services Director and Assistant General Manager of Finance and Administration since September 1998 and as Accounting Manager and Contracts Audit Supervisor for the Water Department since 1987. He also previously served as a Deputy Commissioner in the Department of Public Property. Mr. Clare is a Certified Public Accountant and received B.S. and M.B.A. degrees in Accounting Control and Finance from Drexel University.

**Debra Anita McCarty** was appointed Deputy Water Commissioner in March 2004. She is principally responsible for managing the Water Department's Operations Division. She received a Bachelor of Engineering Sciences of Environmental Engineering from Johns Hopkins University in Baltimore in 1979. After serving in a private engineering firm for several years, she began her employment with the Water Department in 1982. Since her initial appointment, Ms. McCarty has held a number of increasingly responsible engineering and managerial positions, most recently holding the position of Chief of Wastewater, which included responsibility for the operation of the City's three large wastewater treatment plants. She has also served as plant manager of the Southwest Water Pollution Control Plant and Process Manager for the Northeast Water Pollution Control Plant.

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

**Philip C. Downs** was appointed Manager of the Water Department's Information Science & Technology Division in October 2003. He received a B.S. degree in Civil Engineering from Drexel University. He joined the Water Department in June 1968 and worked as a Systems Analyst in both the Engineering Computing Center and Data Management Unit. His most recent position in Information Science and Technology was as Water Information Center Manager of Support.

**J. Barry Davis** was appointed Divisional Deputy City Solicitor and General Counsel to the Philadelphia Water Department in July 2001. He has served as a City Solicitor in the City's Law Department, Water Division, since 1991. He holds a B.A. from Pennsylvania State University, an M.S. in Urban Affairs and Planning from Hunter College, and a J.D. from Temple University. Prior to joining the Law Department, Mr. Davis managed utility and energy projects in the private sector and for non-profit agencies.

**Marleen Duley** was appointed Deputy Revenue Commissioner in charge of the Water Revenue Bureau in February 2003. She holds a B.S. degree in Management from LaSalle University. Prior to her appointment as Deputy Revenue Commissioner, Mrs. Duley was Divisional Manager of the Taxpayer Services and Collections Division of the Tax Revenue Bureau. She has previously served in a similar capacity in the Customer Service and Collections Division of the Water Revenue Bureau. She has extensive municipal customer service and collections expertise gained through 22 years of working in increasingly responsible management positions.

**Lorin Fields** was appointed General Manager of the Human Resources Division in March 1999. He holds a B.A. degree from Pennsylvania State University and an M.B.A. from LaSalle University. He was, most recently, the manager of the Division's Human Resources Unit. Prior to that he held a variety of human resources positions in the Water Department and the City's Personnel Department.

**Ed Grusheski** was appointed General Manager of the Public Affairs Division in May 1999. He holds a B.S. degree in Foreign Service from Georgetown University and an M.A. in American Civilization from the University of Pennsylvania. Mr. Grusheski joined the Water Department in 1988 as Director of the Water Works Interpretive Center, a project of the Public Affairs Division. He currently serves on several committees, including the Pennsylvania Department of Environmental Protection's Coastal Zone Management Steering Committee and is a board member of the Fairmount Park Commission's Fund for the Water Works.

**Stephen J. Furtek** was appointed Interim General Manager of Planning and Engineering on March 1, 2005. Mr. Furtek is a registered Professional Engineer and holds a B.S. degree in Civil and Urban Engineering from the University of Pennsylvania. He has held a number of increasingly responsible positions since joining the Water Department in 1982, including Supervisor of the Water & Sewer Design Section and Manager of the Design Branch.

## **Personnel**

As of January, 2005, the Water Department employed approximately 2,039 persons, of whom 1547 are represented by District Council 33, and 258 by District Council 47, both of the American Federation of State, County and Municipal Employees. The Water Department's upper management, supervisory and senior engineering and administrative personnel are not eligible for union membership. There are approximately 205 employees in the Water Revenue Bureau of the Revenue Department whose positions are funded by the Water Department. Union representation in the Water Revenue Bureau parallels that of the Water Department.

The City has entered into collective bargaining agreements with District Councils 33 and 47, effective July 1, 2004, each of which will terminate on June 30, 2008.

## **Relationship to the City**

The Water Department was established by the City pursuant to the Charter as one of the City's ten operating departments. As such, the Water Department reports to the Office of the Managing Director. The Water Department relies on other City departments and agencies for support of its operations. Eight departments receive a direct appropriation from the Water Department's operating budget at the beginning of each fiscal year to fund the support services to be rendered to the Water Department in such fiscal year. The eight departments are: the Revenue Department (Water Revenue Bureau) for meter reading, billing and collection services; the Law Department for legal services; the Department of Public Property for the rental of office space, communications and parking; the Office of Fleet Management for vehicle acquisition and maintenance; the Mayor's Office of Information Services for computer support services; the Procurement Department for the payment of support services; the Finance Department for Fringe Benefits, Indemnities and support services; and to the Sinking Fund Commission for the payment of debt service.

Fifteen City departments and agencies, including the Revenue Department and the Department of Public Property, provide additional services to the Water Department during the year for which they are paid at the close of each fiscal year. These additional services include purchasing of services, supplies and equipment by the Procurement Department; telephone and other communication services by the Public Property Department; street repairs by the Streets Department; disbursements and cash management by the Director of Finance; and auditing services by the Office of the City Controller.

The City is the largest customer of the Water Department. For Fiscal Year 2003, the City paid \$20,792,000 to the Water Department, which represented 4.29% of the Water Department's total revenues for that year. For Fiscal Year 2004, the City's charges from the Water Department were \$22,289,256 which represents 4.83% of budgeted total revenues. Projections contained in the Engineering Report forecast that the City's annual projected charges to be paid to the Water Department are \$24,370,000 for Fiscal Year 2005. City payments to the Water Fund are made as of the close of each Fiscal Year.

The total interdepartmental charges paid by the Water Department to the General Fund of the City for Fiscal Year 2004 were \$231,290,000. Of this amount, \$223,136,000 was disbursed on a direct

appropriation basis throughout Fiscal Year 2004, including \$158,201,000 in debt service payments and \$8,154,390 was disbursed at the close of the fiscal year for the remaining interdepartmental charges. Total interdepartmental charges to be paid by the Water Department to the General Fund of the City for Fiscal Year 2005 are \$282,525,000 including \$180,956,808 in debt service and \$54,469,200 in employee fringe benefits. The Engineering Report projects interdepartmental charges to rise from \$55,468,000 in Fiscal Year 2005 (excluding debt service of \$158,387,000) to \$59,321,000 (excluding debt service of \$195,577,000) in Fiscal Year 2008.

## **The Water System**

The Water System provides water to the City, which comprises approximately a 130 square mile service area. In addition, the Water Department has contracted to provide up to 35 million gallons per day (“MGD”) of water to Bucks County Water and Sewer Authority pursuant to an agreement with that authority. The population served by the Water System was approximately 1,672,000 as of the 2000 census, of which 1,518,000 were in the City and 154,000 were in Bucks County. On June 29, 2000 the Water Department entered into a contract with the Philadelphia Suburban Water Company, which, as the result of a January 1, 2001 merger is now Aqua Pennsylvania, under which the Water Department agreed to provide wholesale water service through March 1, 2026. This Agreement provides for service through two interconnections – one in Tincum Township, Delaware County and another in Cheltenham Township, Montgomery County. The Tincum interconnection allows for an average daily draw of 4.5 MGD and became operational in November, 2001. Current projections on which the Engineering Report is based assume that the total population in the present service area will stabilize at approximately those levels for the remainder of this decade. As of December 2004, the Water System served approximately 471,500 retail customer accounts through 3,160 miles of mains and provided fire protection through more than 27,800 fire hydrants. In addition, there were, as of December 2004, approximately 17,000 water/wastewater accounts in non-service status due to service shutoffs for non-payment.

The City obtains approximately 55% of its water from the Delaware River and the balance from the Schuylkill River. The City is currently authorized by applicable regulatory authorities to withdraw up to 390 MGD from the Delaware River and up to 258 MGD from the Schuylkill River. Water treatment is provided by the Samuel S. Baxter Plant on the Delaware River and by the Belmont and Queen Lane Plants on the Schuylkill River. The combined rated capacity of these plants is 546 MGD, and their combined maximum capacity is 683 MGD. The storage capacity for treated and untreated water in the combined plant and distribution system totals 1,065.5 million gallons (“MG”). In Fiscal Year 2004, the Water System distributed 96,258 MG of water at an average rate of 263.0 MGD. The maximum daily water production requirement experienced by the Water System in Fiscal Year 2004 was 304.7 MG and occurred on February 4, 2004.

The Water Department maintains programs to reduce uncaptured revenue and the loss of finished water from the distribution system. It has been very active in promoting new methods through the American Water Works Association, and has attained the recognition as an industry leader in this regard. Programs include the annual publication of a detailed system water audit, ongoing leak detection and repair, a Meter Management Program featuring the nation’s largest Automatic Meter Reading (AMR) system, a successful Revenue Protection Program which has recouped millions of dollars of uncaptured revenue and participation in important research projects on leakage management.

The Water Department was the first water utility in the United States to adopt the new best management water audit approach published by the International Water Association and the American Water Works Association in 2000. The method accounts for all water as either consumption or losses. Apparent Losses are the paper losses due to customer meter inaccuracies, billing error and unauthorized consumption. These losses cause water utilities to lose a portion of the revenue to which they are entitled.

Real Losses are physical losses, largely leakage. These losses inflate the marginal water production costs for water utilities. The Infrastructure Leakage Index (ILI) gives a measure of leakage control standing and is the ratio of the current level of leakage to the technically low limit believed achievable (unavoidable level) if leakage must be completely minimized due to scarce resource availability, shortages, etc. For systems not confronting such pressures, AWWA recommends targeting an ILI of no more than 8.0. Achieving this level would mean targeting an additional real loss reduction of 24.7 mgd for the Water Department.

Component	FY2000	FY2001	FY2002	FY2003	FY2004
Water Delivered, mgd	280.5	270.2	263.0	270.2	263.0
Billed Consumption, mgd (may include some unmetered consumption)	185.8	181.7	178.2	183.4	176.9
Non-revenue Water, mgd	91.9	85.8	84.8	86.7	86.1
Percent Non-revenue Water by volume, mgd	33.1	32.1	32.2	32.1	35.4
Percent Non-revenue Water by cost	12.3	12.7	13.1	11.9	12.1
Unbilled Consumption, mgd	3.0	2.4	2.5	3.0	2.4
Unbilled Consumption Costs	\$149,000	\$134,500	\$145,900	\$180,400	\$159,700
Apparent Losses, mgd	18.6	14.5	13.1	13.3	11.1
Apparent Losses costs	\$13,751,000	\$9,324,000	\$9,036,000	\$10,014,000	\$10,937,000
Real Losses, mgd	70.1	68.9	69.2	70.5	72.6
Real Losses costs	\$2,965,000	\$3,375,000	\$3,369,000	\$3,682,000	\$4,075,000
Infrastructure Leakage Index, dimensionless	12.3	12.7	13.1	11.9	12.1

Philadelphia Water Department – Water Revenue Bureau Annual Water Audit Summary

The Water Department has cut its Non-revenue water by roughly one third over the past decade, from a typical annual level of 120-140 mgd to 86.1 mgd in Fiscal Year 2004. It has become a recognized water industry leader in promoting innovative water loss control methods.

In fiscal year 2004 hydrant availability was 97.5%. A proactive program is responsible for this high reliability. The program calls for routine inspection, repair and painting. For fiscal 2004 there were 5014 inspections, 4883 repairs and 2824 hydrants painted. In addition 1206 tamper-proof hydrant locks were installed. Over 54% of the department's hydrants have locking devices. Hydrant abuse has been drastically reduced.

An important activity in reducing water losses is the disconnection of a vacated water service. On January 6, 2005 fire system (50 pipe miles, 1000 hydrants and 2 pumping stations) was decommissioned. Planning is underway to determine the disposition of these assets.

The Reservoir Team was created to better manage the strategic planning, capital program projects, and operations and maintenance functions of the Water Department reservoirs. This multi-functional team has updated all standard operating procedures and is improving as-built documentation of reservoir facilities. The Team sponsored the Reservoir Management Assessment Project in 2004, which



was a comprehensive assessment of reservoir practices, conducted by Economic and Engineering Services, Inc. This assessment found that the Water Department provides outstanding upkeep of its reservoirs to meet the quantity and quality needs of the drinking water supply system. Currently the Strategic Planning Group is studying the long-term options for East Park and Oak Lane Reservoirs where the floating covers are into the second half of their useful lives.

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

The EPA has promulgated two sister rules, the Interim Enhanced Surface Water Treatment Rule (“IESWTR”) and the Stage 1 Disinfectant/Disinfection By-Product Rule (“D/DBP”), both of which took effect January 1, 2002. The Water Department complied with these rules by implementing improvements at its treatment facilities. Several major changes contribute to the department’s continuing tradition of supplying safe and healthy drinking water: the introduction of pH control systems, moving and adding chlorine application points, renovation of several flocculation basins, the rebuilding of several filters and the installation of on-line turbidimeters for each filter. These major projects were supported by many smaller ancillary projects that made these changes effective.

The Water Department continues to conduct pilot scale investigations to enable it to respond to upcoming regulations and to investigate effects of proposed process changes. The initial phase of the pilot plant study was conducted to investigate changing the coagulant dose, the pH of coagulation and point of chlorination. This work was completed and integrated into the current water treatment process, as mentioned above.

The pilot plant research continued with the investigation of the practicality of using ozone to inactivate *Cryptosporidium oocysts*. The conclusions from this extensive phase indicates that ozonation for inactivation is very expensive. The cost is estimated at \$100 million, plus \$40 million in contingency for re-pumping.

Data collected through AwwaRF sponsored research, Water Operations, and source water assessment seems to indicate that the Water Department will be able to meet regulations relative to *Cryptosporidium* without ozone or ultraviolet light inactivation.

In Fiscal Year 2006 and Fiscal Year 2007 pilot plant studies will focus the effectiveness of coagulants other than ferric chloride. The Water Department has predominantly used ferric chloride but with changes in the coagulant market place and changing ownership of our primary supplier. It is imperative that the Water Department evaluate alternative coagulants in comparison to ferric chloride on the basis of performance and cost. Additional studies that are being undertaken follow-up studies that occurred during Fiscal Year 2005. That is, the international multi-utility study to further the understanding of the occurrence of manganese (Mn) in drinking water. Although Mn is currently undetectable in Philadelphia’s drinking water, other proposed changes in the treatment process may produce a level of Mn that could be of aesthetic concern (known as black water because the color of the water changes to brown/black and clothes are often stained with small black dots). The pilot plant study will help the Water Department avoid manganese problems that may result from treatment modifications that are under consideration. Specifically the delay of chlorination until after filtration in order to reduce disinfection by product formation for future regulation.

Future studies will include protocols to ascertain the effect of lower chloramine residuals in the distribution system in order to reduce disinfection by products, and investigating the boosting of chloramine residuals in the distribution system to maintain lower disinfection by product target levels.

On a more recent research front, the Water Department will be participating in an AWWARF Endocrine Disruptor study to gain a better understanding of the barely detectable levels of pharmaceuticals and hormones found at the city's drinking water intakes. AWWARF, in conjunction with the Southern Nevada Water Authority, will conduct an in depth analysis of our water supply over the course of a year, conduct toxicological experiments, and provide us with data as compared anonymously with other participating U.S. water utilities. This groundbreaking research will provide drinking water utilities with the necessary data to better evaluate potential public health concerns.

The Water Department is also investigating the biostability of its distributed water and the maintenance of this stability in the distribution system. That project is entitled the biodegradable organic matter ("BOM") project. BOM is important since upcoming federal regulations will regulate the DBPs relative to location within the distribution system. The biological stability of the water becomes important because it dictates the optimum amount of chlorine necessary to suppress biological activity within its distribution system. The more stable a utility can make its water, the less chlorine it needs and the fewer locations it will have with higher DBPs.

The Water Department continues to participate in the Partnership for Safe Water ("PfSW"). The PfSW is a national, joint program of the EPA and the water industry. The Water Department has completed several phases of that program and in 2004 was awarded the Five Year Director's Award for achieving a finished water quality which meets PfSW goals for five straight years. The finished water effluent turbidity is less than 0.1 ntu, which is three times lower than the new standard of 0.3 ntu. This, in combination with a multibarrier approach, guards against outbreaks of water contamination. The Water Department continues to operate within guidelines that are far more rigorous than Commonwealth or federal laws require.

An additional example of this "more rigorous than required" approach is the Water Department's Microbial Communication Plan. This plan describes what communication will be taken at each level of treatment so that the multibarrier system is always enforced and that appropriate personnel are notified of actions taken. This also includes notification and involvement from the primary agency (PaDEP), in addition to the City's Health Department. It is important to note that these efforts are all for events that are not covered by regulations (sub-regulatory events).

The Water Department has been a participant in the development of drought management plans, which allocate Delaware River Basin water resources during drought periods among jurisdictions dependent on the Delaware River for water supply. These plans have been used to effectively manage drought emergencies declared in the past and are expected to adequately address future drought emergencies. In addition, the City is able to draw water supply from both the Schuylkill and the Delaware River systems and is not therefore dependent on a single source of supply. Currently, the City is not under any drought restrictions. See APPENDIX II – "ENGINEERING REPORT."

### **Capital Facilities Assessment Program**

The Water Department is developing a comprehensive assessment program for its water, wastewater, pumping, and biosolids recycling facilities to proactively address future capital funding requirements. The program is called The Capital Facilities Assessment Program ("CFAP") and its intention is to complement the established maintenance program at each facility by instituting a framework for the periodic assessment of major infrastructure. The Water Department initiated the

program by assessing the physical condition of three selected pilot facilities: Queen Lane Water Treatment Plant, Southeast Water Pollution Control Plant, and Lardners Point Water Pumping Station. These facilities serve as the template on which the remaining Water Department facilities will be modeled. This initial assessment gave the Water Department the physical condition, re-inspection schedule and inspection methodology for each infrastructure asset. All of this information is organized and documented in the Water Department's computerized maintenance management software program, which will aid the plant managers in scheduling O&M and capital inspections.

To date, CFAP has been implemented at Queen Lane Water Treatment Plant, Baxter Water Treatment Plant, Southeast Water Pollution Control Plant, and Southwest Water Pollution Control Plant. Development of CFAP is currently underway at the Belmont Water Treatment Plant and the Northeast Water Pollution Control Plant. Full implementation is anticipated for these facilities in early 2006.

The Pumping Unit is in the process of implementing the Department's computerized maintenance management system software to schedule O&M and capital inspections for its 16 pumping stations. To date Pumping has entered the CFAP assets at four pumping stations. Once each facility is completed, CFAP inspections will be identified and an inspection schedule developed for the remaining pump stations.

A key component of CFAP is the training that is provided for each facility's personnel in inspecting and re-inspecting concrete structures. This training is provided by the American Society of Civil Engineers ("ASCE"). Each training session includes one day of classroom instruction and one day of "in the tank" identification of concrete structural defects. The personnel from each of the facilities in which CFAP has been initiated have received this training and are implementing this diagnostic tool in the assessment of CFAP infrastructure at the respective facilities. The Belmont Water Treatment Plant and Northeast Water Pollution Control Plant staffs will receive this training once their CFAP assets have been finalized and inspection schedules developed. Full implementation for these facilities in early 2006.

## **The Wastewater System**

The Wastewater System service area totals 360 square miles, of which 130 square miles are in the City and 230 square miles are in suburban areas. Service to suburban areas is provided under agreements with adjacent municipalities and municipal authorities, which generally require delivery of wastewater to the Wastewater System. The population served by the Wastewater System was approximately 2,218,000 as of the 2000 census, of which 1,518,000 were in the City and 700,000 were in the suburbs. Current projections on which the Engineering Report is based assume that the total population in the present service area will stabilize at approximately those levels for the remainder of this decade. As of December 2004, the Wastewater System served approximately 478,000 retail customer accounts.

The Wastewater System consists of three water pollution control plants ("WPCPs"), 16 pumping stations, approximately 2,980 miles of sewers, and a centralized biosolids handling facility. The Wastewater System is divided into three drainage districts (Northeast, Southeast and Southwest).

The federal Water Pollution Control Act, as amended (the "Clean Water Act"), provides for the restoration and maintenance of the chemical, physical and biological integrity of the nation's waters. To that end, the Clean Water Act establishes the National Pollution Discharge Elimination System ("NPDES"), a permit system administered by EPA in conjunction with the states. The EPA has delegated the NPDES program for the Commonwealth to the PaDEP. The treatment portion of the Wastewater System is subject to the requirements of the Clean Water Act and the conditions set forth in the NPDES permit applicable to each of the WPCPs. In addition, the City is subject to regulation by PaDEP, which exercises regulatory authority over municipal sewage treatment operations, and to regulation by the

Delaware River Basin Commission (“DRBC”), which exercises regulatory authority over withdrawals from and discharges into the Delaware and Schuylkill Rivers. Current NPDES permits for the Northeast, Southeast and Southwest WPCPs were issued on July 7, 2000, became effective on August 1, 2000 and will expire July 7, 2005. These permits with PaDEP provide flexibility to treat additional flows resulting from efforts to control combined sewer overflows. Applications for all three plant NPDES permit renewals have been submitted to PaDEP in anticipation of new permits being issued in August 2005.

The Clean Water Act requires that publicly owned treatment works such as the treatment portions of the Wastewater System achieve levels of secondary treatment as defined in the Clean Water Act, or where applicable, more stringent levels of treatment required to meet water quality standards established pursuant to any Commonwealth or federal law or regulation. By order of the DRBC issued in 1969, the City is required to achieve effluent limitations which are considered more stringent than those required to achieve secondary treatment levels as defined in the Clean Water Act.

The three WPCPs have maintained high levels of treatment such that they have been recognized by the Association of Metropolitan Sewerage Agencies (“AMSA”) with either Silver, Gold or Platinum awards over the past decade. This year the Southeast WPCP will receive a Platinum Award representing zero NPDES permit violations for five consecutive years covering the period of 2000 through 2004. The Southeast Plant joins the Northeast (2001) and Southwest (1999) plants in reaching this milestone. The Southwest will receive a Gold Award for their performance in calendar year 2004. The Northeast Plant did not receive an AMSA award for 2004, the first time in 10 years. During December of 2004 the plant received an the influent load of an as yet undetermined toxic substance, negatively impacting the plants secondary system, and ultimately the plant effluent, for nearly two weeks. The resulting permit violations for the month disqualified the plant from receiving an AMSA award despite 11 prior months of perfect compliance.

While the three WPCPs have continued their high levels of performance, the costs of operating them have been contained to less than a 3% annual increase between fiscal years 2000 and 2004. This has occurred despite wage increases. Optimization in the dosage of treatment chemicals, electricity use, reduced staffing levels and improved maintenance management practices have all contributed to this cost containment.

The wastewater improvement program has effectively and significantly improved the water quality of the Delaware River, thereby fostering both public and private development of the riverfront for commercial, residential and recreational uses.

Biosolids Treatment and Utilization. The City is required by federal and Commonwealth law, administered by the EPA and Pennsylvania Department of Environmental Protection (the “PaDEP”), respectively, to treat and dispose of biosolids captured during wastewater treatment at the City’s WPCPs. Biosolids from the three WPCPs are treated at the Biosolids Recycling Center (the “BRC”). The BRC contains a dewatering station and a compost facility. The BRC produces two grades of biosolids, as defined by state and federal regulations. These are Class A biosolids compost and Class B dewatered biosolids cake. Class B biosolids are used on farmlands and at mine reclamation sites. Class A compost is put to a variety of local uses, including garden and horticultural applications and recreation sites.

The Water Department’s biosolids recycling program is widely recognized in the wastewater industry for its long-term successes. The Water Department has been acknowledged twice by the EPA: in 1995 with a National First Place Award for “outstanding operational and emissions studies of composting,” and in 1998 with a Special National Award for “sustained excellence in mine land reclamation using biosolids.” The Water Department’s recycling program was also recognized jointly by the Pennsylvania Water Environment Association and the PaDEP with its 1999 Biosolids Award.

Biosolids processing and distribution is governed at the national level by regulations that the EPA published at 40 CFR Part 503 regulations in February 1993 (the “Part 503 Regulations”). The Part 503 Regulations require, among other things, certain record keeping and monitoring procedures and compliance with technical standards for pathogen reduction, vector attraction reduction and pollutant limits. These regulations are self-implementing and directly enforceable, in that the EPA can initiate enforcement actions for non-compliance even in the absence of the EPA’s issuance of permits under the NPDES permitting program. In September 2002, the Water Department submitted to Region 3 EPA an application for a ‘sludge-only’ permit covering its biosolids treatment and use program; EPA’s current policy is to accept such permit applications as informational, and to not proceed with permit review and approval. The Water Department believes it is in full compliance with the technical standards in Part 503. For the most part, these standards have been adopted by Pennsylvania and New Jersey in those states’ regulation of biosolids quality and use.

The Water Department operates the BRC under permits and orders issued by PaDEP. In 1997, the PaDEP issued a renewal of the waste-processing permit for the BRC; the term of the permit is ten years. The Water Department has operated the BRC in compliance with this permit, staying fully within the boundaries of its permitted processing area and having no excess inventory of biosolids products.

The Water Department’s program for biosolids disposition consists of various land-based applications conducted in accordance with requirements of the state environmental agencies in which its biosolids products are applied. The Water Department has permits and orders from PaDEP, the New Jersey Department of Environmental Protection and the Maryland Department of the Environment necessary to ensure complete disposition of its biosolids products. From PaDEP, the Water Department has permits or approvals for the agricultural utilization of biosolids at over 40 farms. These approvals are given through Chapter 275 provisions of the April 9, 1988, Pennsylvania Municipal Waste Management regulation, and through General Permit No. PAG 080004, under amended regulations of January 27, 1997. The first five-year registration period for Philadelphia’s Class B biosolids under this General Permit was complete on December 12, 2002, and the Water Department renewed the registration for a second five-year period.. The Water Department also received approval in 2000 from the Maryland Department of the Environment to distribute its biosolids cake for use on Maryland farmland, and has maintained compliance with monthly reporting requirements and the submission of annual fees.

The Water Department also has coverage for its biosolids-derived compost distribution program in Pennsylvania and New Jersey. In Pennsylvania, Class A biosolids distribution is allowed under the General Permit for Beneficial Use of Exceptional Quality Sewage Sludge by Land Application (PAG-07). The Water Department’s biosolids compost, a Class A material, is registered under this general permit. Regulations governing biosolids use were promulgated by the New Jersey Department of Environmental Protection on May 5, 1998, and the Water Department received approval from New Jersey in 2000, opening markets in this state for sale of this Class A biosolids compost.

In early 2004, the Water Department changed concession contractors in a competitive bid for the highest offer for the compost. The firm of Banfe Recycling was awarded the concession, replacing the long-standing marketing company, PRS Materials. PRS Materials replaced Philadelphia’s compost with a competing compost, and took actions to protect its own market, which has the firm presently in a legal dispute with the City of Philadelphia over trademark infringement for continued use of the “Earthmate” product name. The development of a replacement marketing and distribution system by Banfe Recycling has been slower than anticipated, and the Water Department has placed substantial compost in temporary stockpile.

The Water Department operates its biosolids program within financial parameters close to the national norm for costs of processing and disposition. Operating budget expenditures for Fiscal Year

2005 for the Biosolids Recycling Center are estimated to be approximately \$18,700,000, or almost half of the expenditures experienced in Fiscal Year 1993, the year during which the Water Department embarked on a program to significantly reduce personnel and operating expenses at BRC. Between 1993 and 1994, the Water Department eliminated one shift of compost production operations and assigned 70 operators, supervisors and support staff to vacant positions outside the Biosolids Management Unit. Significant competition arose then among private-sector companies offering disposal or application services for Class B products, also causing significant reductions in unit costs, by as much as 50%.

Recent improvements to the BRC have been completed that are anticipated to further reduce costs and improve reliability. These include replacement of four dewatering centrifuges to accomplish a reduction in the mass of biosolids materials and replacement of all feed pumps for liquid sludge and polymer. The installation of a vehicle wash system and replacement of centrate return lines have improved reliability of operations. Pumps have been replaced for the feed of liquid sludge and polymer to the centrifuges. A new gas heating system for the Dewatering and Mixing Building has been installed that reduces reliance on oil supplies. The entire electrical system for the compost screening system is currently being replaced, and the weigh scale equipment will be rebuilt in the summer of 2005.

The Pennsylvania Municipal Waste Planning, Recycling and Waste Reduction Act (“Act 101”) requires the City to adopt and implement a plan approved by PaDEP for the processing and disposal of municipal waste generated within its boundaries. The biosolids generated by the WPCPs constitute municipal waste within the meaning of Act 101. The Water Department’s program for disposition of biosolids is part of the City’s Act 101 plan.

The Water Department has been active in national and regional biosolids programs. The Water Department has been affiliated with the National Biosolids Partnership (the “NBP”). The NBP is a collaboration of the Water Environment Federation (the “WEF”) and the Association of Metropolitan Sewerage Agencies (the “AMSA”), with support of the EPA. The Water Department is also a founding member of the Mid-Atlantic Biosolids Association (the “MABA”), a regional group of biosolids producers and users that was formed in 1999 to increase professionalism, to support regionally-relevant research, and to promote public acceptance. At the state level, the Water Department is represented on the Biosolids Committee of the PWEA, and is a participant in the Organics Council of the Professional Recyclers of Pennsylvania (the “PROP”).

While the Water Department has been successful in using Class B biosolids over the last twenty years, the Department has witnessed both an increased number of health and environmental concerns raised with Class B biosolids recycling and resistance in some communities to Class B biosolids use. Over the past several years, though agricultural use of biosolids has expanded, the program for mine reclamation has significantly declined, in part arising from public resistance to odors and perceived health risks. The Water Department has responded by contributing to research, both nationally and locally, in the areas of odors, pathogens and persistent organic pollutants. Nevertheless, the long-term sustainability of its current Class B is questionable. What is more, the Water Department has made a commitment to reduce odorant emissions from the Biosolids Recycling Center itself, which affects both current Class B cake programs and its composting program.

The Water Department began in summer 2003 a process to move to an entirely Class A biosolids process, and one that could operate in Philadelphia without odors. It entered into a contract with the engineering consultant firm Camp, Dresser & McKee (“CDM”) to assist with procurement of facilities and services for Philadelphia to operate for 20 years the dewatering station and to construct new facilities to produce Class A biosolids products. Alternative processes identified for this procurement process included fully-enclosed composting systems and heat drying technologies. The Request for Qualifications was released in August 2003, and, in response, the City received qualification statements

from four teams, of which two were found qualified and invited to receive a Request for Proposals. One team, Philadelphia Biosolids Services, submitted a proposal on November 24, 2004. This team offered to build a pair of sludge dryers. This proposal is under evaluation by a team drawn from several city agencies to determine if it would be in the Department's best interests to pursue a contract with them .

### **Source Water Protection Program**

The Water Department's Office of Watersheds Source Water Protection Program (see below, "Office of Watersheds") completed a source water assessment survey of the Schuylkill and Delaware River watersheds in 2002. The Schuylkill River is a 130-mile stretch of river encompassing 2,000 square miles and parts of 11 counties. The Delaware River is a 330-mile stretch of river encompassing 11,000 square miles from Pennsylvania, New Jersey, and New York. The assessment was funded through a grant provided by PaDEP to define sources of contamination that impose greater treatment challenges to water suppliers in the watershed. Source water assessments are required for all waterways, which are drinking water sources, by the federal 1996 Safe Drinking Water Act amendments. The Water Department partnered with the Aqua America and the Pennsylvania American Water Company to facilitate the data collection on this three-year project.

Based on the assessment findings and identification of top priorities for source water protection, the Water Department facilitated the formation of the Schuylkill Action Network (SAN) in spring 2003 to focus on drinking water quality issues of the Schuylkill River Watershed, which covers parts of 11 counties in southeastern Pennsylvania.

The SAN team members include the US Environmental Protection Agency Region III, the Pennsylvania Department of Environmental Protection, the Philadelphia Water Department, the Delaware River Basin Commission, conservation districts, locally elected officials, watershed organizations, and other stakeholders assisting with crafting local solutions.

The mission of the SAN is:

*"To improve the water resources of the Schuylkill River watershed by working in partnership with state agencies, local watershed organizations, water suppliers, local governments, and the Federal government to transcend regulatory and jurisdictional boundaries in the implementation of protection measures."*

The SAN includes a Steering Committee, a Planning Workgroup, and Technical Workgroups to address the complex issues in the Schuylkill River watershed. SAN will restore and protect the watershed as a regional drinking water source; promote stewardship and education; transfer the experience and lessons learned to other communities; and enhance intergovernmental communication and coordination.

The following are brief examples of protection efforts that have been or will be conducted in the near future to address water supply protection issues.

- Partnerships with suburban township environmental advisory committees and planning commissions to address stormwater runoff impacts on water quality from upstream development
- Development of a long term source water protection plan via a grant from PaDEP
- Creation of an Early Warning System to protect water supplies along the Schuylkill and Delaware Rivers via a grant from PaDEP

- Implementation of an endocrine disruptor research project to further understanding of potential health concerns regarding pharmaceuticals and hormones in source water
- Construction of a pilot stormwater treatment wetland in Philadelphia at Saylor Grove in partnership with Fairmount Park and Natural Lands Restoration Environmental Education Program (“NLREEP”) via a grant from PaDEP
- Installation of streambank fencing and over 1,100 riparian buffer tree plantings at Fox Chase Farms with Fairmount Park and NLREEP to reduce livestock impacts on water quality
- Creation of a protective riverbank meadow along West River Drive to protect the Belmont WTP intake in partnership with Fairmount Park and NLREEP via multiple grant sources

Based on the success of the Source Water Protection Program, the Water Department has been awarded the USEPA Region III (Mid Atlantic States) 2002 Source Water Protection Award, the American Water Works Association’s 2003 Exemplary Source Water Protection Award and the 2005 American Council of Engineering Companies Diamond Award for the Schuylkill River Source Water Assessment. These awards recognize the Water Department as the model for the region and country in the area of Source Water Protection.

Office of Watersheds. The Water Department’s Office of Watersheds, created by the Water Department in Fiscal Year 1999, is working to achieve viable and measurable improvements to the region’s waterways by implementing planning and management strategies that foster good science, public involvement and fiscal responsibility. Its goal is to meet regulatory requirements while enhancing the health and aesthetics of the environment. The Office of Watersheds has been charged with the mission of integrating traditionally separate tasked programs, including Philadelphia’s Combined Sewer Overflow (CSO) program, the Stormwater Management Program, and its Source Water Protection Program, to maximize the resources allocated to these programs and to ensure the comprehensive achievement of each of their goals. The Office of Watersheds organization is composed of staff from the Water Department’s planning and research, collector systems, laboratory services, and other key function groups, allowing the recently established organization to combine resources to realize the common goal of watershed protection. The Office of Watersheds is formulating watershed management plans for the City’s receiving waters through the establishment of watershed partnerships. These partnerships act as a forum for participating members to work together to develop a watershed strategy that meets state and federal regulatory requirements but that also embraces the environmental/public sensitive approach to improve stream water quality and quality of life in communities. The Water Department has implemented an approach to water quality management that seeks to reduce water pollution from all sources in a manner that is based on measurable results, be it improvements to the dissolved oxygen and fecal coliform levels of the stream, or streambank restoration and the addition of riparian buffers to the adjoining park land, or a mixture of both. These improvements translate into a fair and equitable distribution of the costs related to pollution abatement and achieving water quality goals. The Water Department has also successfully engaged urban and suburban communities to explore inter-regional cooperation based on an understanding of the impact of land use and human activities on water quality. Watershed Management Plans have been completed for the Cobbs Creek Watershed and the Tookany/Tacony-Frankford Watershed. Similar plans will be developed over the next few years for the Wissahickon, Pennypack and Poquessing Creek watersheds respectively. The office has developed or is currently working on complementary river conservation plans for the Tacony/Frankford, Pennypack and Poquessing creeks.

Combined Sewer Overflow Program. The fundamental goal of the Water Department’s combined sewer overflow (“CSO”) program is to improve and preserve the water environment in the Philadelphia area and to fulfill the Water Department’s obligations under the Clean Water Act and the



Pennsylvania Clean Streams Law by implementing technically viable, cost-effective improvements and operational changes.

The present National Pollutant Discharge Elimination System (NPDES) permits require the Water Department to implement a combined sewer overflow program. In older sections of the City, both wastewater and storm water are conveyed in one pipe to the sewage treatment plant. This is known as a combined system. Combined systems were designed so that during dry weather all wastewater is conveyed to the sewage treatment plant. However, during certain rain events, the additional storm water exceeds the capacity of the collection system and/or wastewater treatment plant. Therefore, during these rain events, the combined system was designed to discharge, or overflow, the excess storm water/wastewater mix directly to local waterways. The Water Department has 177 CSO points in its collection system (one was recently eliminated as a component of the department's CSO Long Term Control Plan (LTCP)).

The Water Department's strategy to attain these goals has three phases: aggressive implementation of a comprehensive program for Nine Minimum Controls; planning, design and construction of 17 capital projects that further enhance system performance and reduce CSO volume and frequency; and commitment of up to \$4 million in services and resources toward comprehensive watershed-based planning and analyses that will identify additional, priority actions to further improve water quality in Philadelphia area water bodies (Cobbs Creek and Tookany/Tacony-Frankford Watershed Management Plans as mentioned above).

These three phases successively provide more comprehensive programs that follow the direction of the EPA CSO Policy and its guidance documents and are consistent with the requirements of the Clean Water Act. The Phase I Nine Minimum Controls and the Phase II capital improvement program will result in implementation of the highest level of cost-effective, technology-based improvements. They will provide a substantial reduction in CSO volume and frequency and a significantly greater percentage of combined sewer flow transported and treated at the Water Department's three wastewater plants.

In contrast to Phases I and II, the Water Department's Phase III plan is water quality-based. Its emphasis on the completion of watershed planning for each basin is a result of the uncertainty in each watershed regarding the sources of pollution, the relative impact of each source on the attainment of water quality standards, the measures needed to control various sources in addition to CSOs, and, in fact, the ultimate ability to attain water quality standards. Most importantly, these plans are created through a stakeholder-driven process, one in which the Partnership members prioritize the goals of the plans to ensure that they include hefty components of community education, stewardship and coordination. Plans that are embraced and valued by all communities are the most sustainable and transferable.

On September 28, 1998, PaDEP issued a letter approving the Water Department's LTCP subject to certain conditions and/or clarifications specified in their letter. Under the Water Department's cost-effective approach, substantially all of the LTCP's estimated \$48 million in capital projects can be managed within projected capital improvement program funding levels. The Water Department will be updating its current CSO permit with the state over the coming year.

Stormwater Management. The Water Department delivers many of the City's storm water management services, including maintenance of the City's 619 miles of separate storm sewers, 1,599 miles of combined sewers, and approximately 75,000 storm water inlets. In recent years, changes in work practices and investment in new equipment have enabled the Water Department to steadily increase the number of inlets cleaned annually from 47,391 in Fiscal Year 1995 to 91,875 in Fiscal Year 2002.

In 1987, the Clean Water Act was amended to address discharges from municipal separate storm sewer systems. Municipal separate storm sewer systems collect storm water from homes, businesses, streets, and other sources and convey it directly to rivers and creeks without treatment. Cities whose separate storm sewer systems serve a population of over 100,000 were required under these amendments to obtain a NPDES permit for their discharges. The Clean Water Act requires dischargers to reduce any contaminated flow in the storm sewer system to the maximum extent practicable.

PaDEP issued the City its initial storm water permit on September 29, 1995, effective for five years. The permit requires the City to implement four management programs to reduce the discharge of pollutants from its municipal separate storm sewer systems. The management programs require the City to reduce pollution from (1) commercial and residential areas; (2) illicit connections; (3) industrial facilities; and (4) construction sites.

On June 19, 1997, the City was served by private citizens with a 60-day notice of intent to sue under Section 505 of the Clean Water Act alleging that it has violated its permit by, inter alia, failing to (1) spend \$200,000 per year to abate illicit connections; (2) file quarterly reports; (3) establish priority rankings for abating illicit connections; (4) provide loan money for the abatement of residential illicit connections; (5) promote public reporting of dry weather illicit discharges; and (6) increase its maintenance by 20% to prevent infiltration from municipal sanitary sewers to municipal separate storm sewer systems. The City, PaDEP and the private citizens settled this matter without litigation pursuant to a Consent Order and Agreement entered into on June 30, 1998. Pursuant to the Consent Order and Agreement, the City took the following actions: (1) hired four crews to locate improper cross connections; (2) inspected at least 2,500 homes per year for cross connections; (3) is bearing all costs in repairing cross connections at residential properties; and (4) abating all cross connections within 120 days after they have been identified or initiating a final proceeding to abate the illicit connection. The entry of the Consent Order and Agreement settles all claims related to the City's compliance with its Storm Water permit. Compliance with the Consent Order and Agreement has not had a material financial impact on the Water Department's operations.

The initial 5-year NPDES Phase I storm water permit issued in 1995 was scheduled to expire in September, 2000. The Water Department applied for a new permit in March, 2000 as required. At this time, PaDEP and the department are in the midst of finalizing a new stormwater permit, which is expected to become effective in 2005.

In addition to the department's stormwater permit, the department has also been a municipal partner in state sponsored Act 167 Stormwater Management Plans in the Darby-Cobbs Watershed (recently completed) and the Tookany/Tacony-Frankford Watershed (recently started). Most importantly, these planning efforts will result in a revised, city-wide stormwater ordinance in the future, an ordinance that meets the stormwater management goals of CSO and stormwater permit planning efforts by addressing land use, streambank protection, water quality goals for our streams and rivers, and groundwater recharge, encouraging the implementation of land-based stormwater management practices, in addition to minimizing localized flooding over the next few decades. As Act 167 plans are implemented in all the region's watersheds, stormwater will be addressed and managed equitably in our four county region.

Clean Air Act. The federal Clean Air Act ("CAA"), as amended, sets forth requirements for the regulation of certain air emissions. In January 1994, PaDEP published regulations pursuant to the CAA's mandates for the control of Volatile Organic Compounds ("VOC") and Nitrogen Oxides ("NO<sub>x</sub>") emissions from major stationary sources. The Northeast WPCP and the Biosolids Recycling Center/Southwest WPCP complex were found to be a major source of VOC and NO<sub>x</sub> emissions, while the Southeast WPCP is a Natural Minor source. The Office of Philadelphia Air Management Services

("AMS") has issued the Water Department a Title V State Operating Permit for the NE and BRC/SW facilities on June 1, 2001. The State's Odor Emission Limitation Regulations are included as part of these permits. During Calendar Year 2004, AMS has issued one odor violation at the SW/BRC facility and three violations at the Northeast facility. Due to the odor incidents, the Water Department has hired a consultant to assist in the development of a long-term odor control strategy. In the short-term the Water Department has budgeted over \$3.5 million in 2005 for the addition of odor control chemicals. The Water Department believes it has identified a major source of the odors and is working with a discharger to correct this problem. The Water Department has worked closely with AMS in developing their Odor Response Plan (which is part of the permit) and this plan is implemented whenever odors are detected. The Water Department continues to operate its facilities in a manner that maximizes treatment while minimizing odors. In October 2003 the Northeast was delisted from the Risk Management Plan "RMP" requirements because sodium hypochlorite disinfection was permanently brought on-line eliminating the need for liquid chlorine. All three wastewater treatment plants have now replaced chlorine with sodium hypochlorite.

The CAA also has a Risk Management Program component which requires a Risk Management Plan ("RMP") for all facilities where regulated substances (chlorine, ammonia, methane) are stored above designated levels. The RMPs are designed to minimize the impact of a process accident on the surrounding community. In June 1999, the Water Department submitted to EPA, their RMPs for covered facilities – the Northeast, Southwest and Southeast WPCPs, and the Baxter and Belmont WTPs. The Water Department has since eliminated the use of chlorine at its Northeast, Southeast, Southwest WPCP's with sodium hypochlorite becoming the replacement disinfectant and is in the process of eliminating the use of chlorine at its Belmont and Baxter facilities. The RMP updates for Baxter and Belmont were completed in June 2004.

### **The Water Department's LCR Compliance History**

Since 1992, the Water Department has conducted seven rounds of in-home sampling for compliance with the Lead and Copper Rule ("LCR") as summarized in the table below. During the first round of sampling, in 1992, the Water Department was above the action level ("AL") for lead. The AL for lead is defined as less than or equal to 0.015 mg/L in 90% of the home tap samples. The AL for copper is defined as less than or equal to 1.3 mg/L in 90% of the home tap samples. In subsequent rounds Philadelphia met the action levels for both lead and copper.

It is important to understand that the AL for both lead and copper were not established on health based criteria. They are not maximum contaminant levels ("MCL") which once exceeded are immediately reportable and a violation of the USEPA Safe Drinking Water Act. AL's are just a LCR indicator trigger to prompt utility's to look at their corrosion control practices. However, if the AL's are exceeded, the LCR mandates a lead service line replacement program ("LSLR"), which can be extremely costly to utilities in older urban settings such as Philadelphia.

Lead and Copper Monitoring History

Year	Samples required	Homes sampled	Lead		Copper	
			90th Percentile	Action level	90th Percentile	Action level
Jan-Jun 1992	100	162	0.021 mg/L	0.015 mg/L	0.9 mg/L	1.3 mg/L
Jul-Dec 1992	100	143	0.015 mg/L		0.8 mg/L	
Jan-Jun 1997	100	118	0.014 mg/L		0.4 mg/L	
Jul-Dec 1997	100	108	0.011 mg/L		0.4 mg/L	
Jun-Sep 1998	50	78	0.010 mg/L		0.3 mg/L	
Jun-Sep 1999	50	59	0.009 mg/L		0.3 mg/L	
Jun-Sep 2002	50	63	0.013 mg/L		0.3 mg/L	

Following the initial sampling period, the LCR allowed the Water Department to go to reduced monitoring (every three years). The Water Department did not exceed the AL for copper in any of the seven rounds of sampling. A significant drop in the copper 90th percentile was observed between round one and round three (0.9 mg/L to 0.4 mg/L). Since round three, the 90th percentile has leveled off at 0.4 mg/L to 0.3 mg/L, indicating that the system may have reached an endpoint and that customers' plumbing systems have been passivated in relation to copper.

Although the AL for lead was exceeded in the initial sampling round, as previously stated, the subsequent initial monitoring period met this AL goal.

**Capital Improvement Program**

The Charter requires the City Council to adopt annually, on or prior to May 31, a capital budget for the ensuing fiscal year and a capital program showing the capital expenditures planned for that year and each of the five ensuing fiscal years. The Capital Improvement Program of the Water Department for the Fiscal Years 2005 to 2010 and the Water Department 2005 capital budget described below were approved by City Council as part of the City's capital program and capital budget on June 21, 2004. Additionally, the City may change the elements of the Capital Improvement Program from time to time and may change the proposed financing schedule reflected in the Capital Improvement Program.

The Water Department's Planning and Engineering Division is continuing to implement improvements to the Water Department's capital program planning process to better anticipate future needs for the infrastructure maintenance and upgrades in an evolving regulatory environment. To that end, the Water Department has initiated a new sewer assessment program to evaluate the Water Department's collector systems infrastructure. This project includes cleaning and video inspection of approximately 150 miles of the sewer system. With this information the Water Department will evaluate the current Collector System Capital Program and make recommendations for changes accordingly. Another capital program initiative includes a second generation of the Water Department's capital program information system. The new computerized system will be browser based using state of the art computer technology. This system will link to numerous Water Department programs and databases including the Geographic Information System, the Water Main Break database, the vendor payment system, and the plant maintenance management system. As a result of the implementation of ERV (Engineering Records Viewer), the Water Department and selected managers from other departments can now access, at their workstation, all record drawings, as-builts, and historic information pertaining to a specific section of the city, block, or project, electronically. The system was built for long term use

through open architecture design, expandability, and programming flexibility. In addition, the Water Department is continuing its use of pilot plants to explore new and alternative treatment technologies. The Water Department has expanded the preventive and predictive maintenance management system to all seven treatment plants, has initiated new procedures to plan and track long term capital projects within the treatment plants, and has improved better communication through reporting capabilities and tracking of projects between the Operating and Engineering Divisions. Through these initiatives and capital planning tools, both the level and volatility of the Water Department's long-term capital expenditures can be more cost-effectively managed.

The following table sets forth major elements of the Water Department's adopted Capital Improvement Program for Fiscal Years 2005 through 2010.

**Fiscal Years 2005-2010**

**Capital Improvement Program  
(In Dollars)**

	Fiscal Year 2005 <u>(Budgeted)</u>	Fiscal Year 2005-2010 <u>(Planned)</u>
Engineering and Administration	18,604,000	121,125,000
Improvements to Treatment Plants	46,000,000	256,000,000
Conveyance System (new and reconstruction)	21,930,000	131,580,000
Collector System (new and reconstruction)	24,510,000	137,810,000
Storm Flood Relief	4,000,000	24,000,000
Vehicles	<u>4,000,000</u>	<u>24,000,000</u>
Total	119,044,000	694,515,000

**Future Financings**

Approximately 70% of the costs of the Capital Improvement Program are expected to be funded with the proceeds of debt to be incurred during the six-year period. The City expects most of such debt to be in the form of Water and Wastewater Revenue Bonds issued under the Act and the General Ordinance. A portion of the debt may be evidenced by loans to the City from Pennvest, established by the Commonwealth to provide low interest cost financing for water and wastewater projects within the Commonwealth. Such loans are expected to be evidenced by water and wastewater revenue bonds. Any additional loans received by the Water Department from Pennvest will reduce the amount of future Water and Wastewater Revenue Bonds to be issued.

The Capital Improvement Program provides for the issuance of revenue bonds in the anticipated principal amount of \$250,000,000 on or after May 1, 2005 and another new money issue in the amount of \$300,000,000 near the beginning of Fiscal Year 2008. The emphasis of the Capital Improvement Program is on the renewal and replacement of the water conveyance and sewage collection systems along with improvements to the water and wastewater treatment plants. See APPENDIX II – “ENGINEERING REPORT.” Black & Veatch Corporation has made certain assumptions in its Engineering Report with respect to inflation which are not reflected in the formal Capital Improvement Plan of the Water Department.

## **Enhanced Security**

In light of the events of September 11, 2001, when terrorists struck the United States, the Water Department took steps to improve the security of the City's water supply and all other major Water Department facilities and assets. These steps were taken in close coordination with the City's Managing Director's Office and all other appropriate city agencies and departments. The Water Department is representative agency in the City of Philadelphia Emergency Operations Center. This facility is designed to permit city emergency personnel to respond quickly to any major event through specialized computer and communications equipment, including a backup 911 system. This center can accommodate around the clock staffing by officials from the Police, Fire, and Health Departments, Water Department and additional city agencies. The Water Department remains in contact with federal, state, and local law enforcement and emergency personnel. The Water Department has performed a vulnerability analysis of its entire potable water system. The work was primarily funded by the EPA and the Water Department delivered its report to the EPA on March 31, 2003. Details of the enhanced security measures already taken and those presently under consideration cannot be disclosed.

It should be noted that the Water Department had an extensive water quality protection and security plan in place prior to the events of September 11, 2001. All finished water basins are completely covered; all plants are fenced in and topped by barbed wire; gates are secured; and the Water Department continues to draw and conduct nearly one thousand tests on water samples from various locations each day. Municipal Guards were assigned to the main entrance at each water plant in 2003 to control access to the facility to only authorized persons and/or deliveries.

To further ensure the safety and quality of the City's drinking water, the Water Department will continue to expand its network to continuously monitor water quality using online instrumentation. The system provides the Department with the ability to track real-time water quality conditions at selected locations throughout the City's water distribution system and to monitor any variations should they occur. Water quality data is currently transmitted from six monitoring sites to the Water Department's central laboratory where technicians check for early warning signs of water quality deterioration and document any unforeseen changes. Plans are in place to expand the monitoring system for the distribution system to include the three reservoirs, the three stand tanks and two other remote points. In addition, an online system is under installation at the City's three water treatment facilities to monitor raw and finished water. The Water Department plans to assess the performance of the monitoring system at the current locations while continuing to investigate alternative technology for further installations at wholesale customer interconnects, pumping stations and other critical points in the distribution system.

## **HISTORICAL COMPARATIVE STATEMENT OF REVENUES AND EXPENSES (LEGALLY ENACTED BASIS)**

The comparative statement of revenues and expenses set forth below has been derived from the financial statements of the Water Fund of the City. The City Controller has examined and expressed opinions on the basic financial statements of The City of Philadelphia contained in The City's Comprehensive Annual Financial Report for Fiscal Years 2000, 2001, 2002, 2003 and 2004 and The City of Philadelphia's basic financial statements for fiscal year 2004. See also, APPENDIX IV – "CERTAIN INFORMATION CONCERNING THE CITY OF PHILADELPHIA – City Financial Procedures – Independent Audit and Opinion of the City Controller." The City Controller has not examined and expressed an opinion on the financial statements for the Water Fund contained in APPENDIX I to this Official Statement or on any other financial data contained in this Official Statement. Such financial statements for the Water Fund have been prepared by the Water Department and approved by the Director of Finance.

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. The City Controller expresses no opinion with respect to any of the data contained in this Official Statement.

In signing this Official Statement, the City Controller has not participated in the preparation of APPENDIX II - "ENGINEERING REPORT" and takes no position at this time regarding the information contained therein, including future rate increases.

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

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

## COMPARATIVE STATEMENT OF REVENUES AND EXPENSES

(Legally Enacted Basis)

This statement should be read in conjunction  
with the financial statements in APPENDIX I hereto

Fiscal Year Ended June 30 (in Thousands)

	<u>2000(a)(b)</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>
<b>Operating Revenues:</b>					
1. Sales to General customers	\$294,937	\$318,236	\$308,940	\$323,872	\$339,777
2. Service (Sales) to Other Municipalities	26,132	25,506	24,106	24,878	25,704
3. Services to Other Philadelphia City Agencies (Includes Fire Protection)	20,033	15,265	18,860	21,503	23,407
4. Private Fire Connections	662	637	910	1,041	1,202
5. Industrial Sewage Surcharge	7,195	6,902	5,338	7,307	6,985
6. Other Operating Revenue	<u>2,339</u>	<u>4,347</u>	<u>4,001</u>	<u>31,243</u>	<u>19,208</u>
7. Subtotals – Water	119,752	126,104	123,133	139,347	141,536
8. Wastewater	<u>231,546</u>	<u>244,789</u>	<u>239,022</u>	<u>270,497</u>	<u>274,747</u>
9. Total Operating Revenue	<u>351,298</u>	<u>370,893</u>	<u>362,155</u>	<u>409,844</u>	<u>416,283</u>
<b>Operating Expenses:</b>					
10. Water	95,583	101,899	101,934	105,044	110,061
11. Wastewater	<u>130,996</u>	<u>140,718</u>	<u>140,765</u>	<u>145,060</u>	<u>151,988</u>
12. Total Operating Expenses	<u>226,579</u>	<u>242,617</u>	<u>242,699</u>	<u>250,104</u>	<u>262,049</u>
13. Excess of Operating Revenues over Operating Expenses	124,719	128,276	119,456	159,740	154,234
<b>Non-Operating Revenues:</b>					
14. Interest on Investments	21,629	26,439	18,917	36,172	2,908
15. Reimbursements – Pennsylvania Clean Streams Grant	4,708	7,996	7,914	7,893	0
16. Other Non-Operating Revenues	<u>2,970</u>	<u>71</u>	<u>640</u>	<u>319</u>	<u>2,427</u>
17. Total Non-Operating Revenues	<u>29,307</u>	<u>34,506</u>	<u>27,471</u>	<u>44,384</u>	<u>5,335</u>
18. Excess of Revenues over Expenses before Interest Expenses and Principal Payments on Bonded Indebtedness	154,026	162,782	146,927	204,124	159,569
<b>Interest Expenses:</b>					
19. General Obligation Bonds	168	71	12	0	0
20. Revenue Bonds	89,298	88,690	83,730	86,763	89,050
21. Less: Interest Capitalized					
22. Pennvest Loan	<u>1,267</u>	<u>132</u>	<u>148</u>	<u>110</u>	<u>99</u>
23. Total Interest Expenses	<u>90,733</u>	<u>88,893</u>	<u>83,890</u>	<u>86,873</u>	<u>89,149</u>
24. Excess of Revenues over Expenses Exclusive of Debt Principal Payments	63,293	73,889	63,037	117,251	70,420
25. Add: Unencumbered Funds Available for Appropriation at Beginning of Fiscal Year	0	0	0	0	0
26. Deduct: Debt Principal Payments on Bonded Indebtedness During Fiscal Year	<u>58,999</u>	<u>61,500</u>	<u>63,512</u>	<u>70,484</u>	<u>69,031</u>
27. Net Unapplied Project Revenues	4,294	12,389	(475)	46,767	1,389
28. Deduct: Funds Transferred to General Fund	4,138	4,138	4,138	4,138	0
29. Deduct: Funds Transferred to Residual Fund	6,592	6,974	6,608	9,839	13,820
30. Deduct: Funds Transferred to Capital Account	<u>15,923</u>	<u>15,868</u>	<u>16,050</u>	<u>16,023</u>	<u>16,348</u>
31. Transfer TO/(FROM) The Rate Stabilization Fund	(22,359)	(39,639)	(26,321)	16,767	(28,779)
32. Unencumbered Funds Available for Appropriation at End of Fiscal Year	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<b>Debt Service Coverage Ratio:</b>					
33. Total Debt Service	1.06	1.07	1.07	1.08	1.08
34. Revenue Bond Debt Service	1.20	1.20	1.20	1.20	1.20

(a) Amounts are reclassifications of the amounts shown in the statement of Revenues, Expenditures and Changes in Fund Balance – Budget and Actual for the Fiscal Years ended June 30, 2000, 2001, 2002, 2003 and 2004 (Legally Enacted Basis) which appear in the Comprehensive Annual Financial Reports of the City of Philadelphia for such years.

(b) See “Appendix I –Financial Statements of the Water Fund for Fiscal Years Ended June 30, 2004 and 2003.”

(c) Included in Operating Expenses are the direct payments of interdepartmental charges:

Fiscal Year 2000 includes \$44,949,000  
Fiscal Year 2001 includes \$51,660,000  
Fiscal Year 2002 includes \$52,260,000  
Fiscal Year 2003 includes \$52,486,000  
Fiscal Year 2004 includes \$53,583,000



## **Analysis of Comparative Statement of Revenues and Expenses**

### Fiscal Year 2000

*Revenues.* Total Fiscal Year 2000 Revenues grew by \$6.8 million over the previous year in part due to a larger transfer from the Rate Stabilization Fund to the Reserve Account. Improved revenue collection efforts, combined with the increased use of automatic meter reading, increased Operating Revenues. Non-Operating Revenue were lower due to reduced interest earnings and a one-time payback of \$3.6 million to the Commonwealth of Pennsylvania for past overpayments to the Department of Clean Streams Grants.

*Expenses.* Total Fiscal Year 2000 Expenses grew by \$4.8 million due to the funding of employee wage increases and increased funding of employee wage increases and increased funding of the Water Department's HELP Loan Program, which provides interest free loans to homeowners for the repair or replacement of their private water service lines, or sewer laterals.

In Fiscal Year 2000, a withdrawal of \$22.4 million was made from the Rate Stabilization Fund and deposited to the Revenue Account. Deposits of \$15.9 million to the Capital Account and \$6.6 million to the Residual Account were made from the Revenue Account.

### Fiscal Year 2001

*Revenues.* Total Fiscal Year 2001 Revenues increased by \$7.4 million over the previous year due to the receipt of a larger deposit from the Rate Stabilization Fund and an increase of \$3.3 million in payments from the Commonwealth of Pennsylvania under Act 339. These increases offset a reduction in receipts for water and wastewater services from the General Fund due to a correction to past over-billings.

*Expenses.* Total Fiscal Year 2001 Expenses increased by \$5.8 million over the previous year due primarily to the funding of employee wage increases.

In Fiscal Year 2001, a withdrawal of \$39.4 million was made from the Rate Stabilization Fund and deposited to the Revenue Account. Deposits of \$15.9 million to the Capital Account and \$7.0 million to the Residual Account were made from the Revenue Account.

### Fiscal Year 2002

*Revenues.* Total Fiscal Year 2002 Revenues decreased by \$8 million over the previous year due mainly to lower than anticipated interest. There was also a reduction in water and wastewater revenues from the General Fund due to a correction to past over-billings.

*Expenses.* Total Fiscal Year 2002 Expenses increased by only \$82,000 over the previous year despite the funding of employee wage increases.

In Fiscal Year 2002, a withdrawal of \$26.3 million was made from the Rate Stabilization Fund and deposited to the Revenue Account. Deposits of \$16.1 million to the Capital Account and \$6.6 million to the Residual Account were made from the Revenue Account. Also, the department defeased approximately \$10.0 million in revenue bonds using available appropriations from the Residual Fund.

### Fiscal Year 2003

*Revenues.* Total Fiscal Year 2003 Revenues increased by \$36.5 million over the previous year due mainly to the receipt of \$29 million from a one-time bond interest rate swap agreement.

*Expenses.* Total Fiscal Year 2003 Expenses increased by \$38 million over the previous year due primarily to an increase of \$10 million in debt service costs.

In Fiscal Year 2003, a transfer of \$16.8 million was made to the Rate Stabilization Fund. Deposits of \$16.0 million to the Capital Account and \$9.8 million to the Residual Account were made from the Revenue Account.

### Fiscal Year 2004

*Revenues.* Total Fiscal Year 2004 Revenues decreased by \$2.5 million over the previous year. The bond swap gain of \$29 million mentioned above was not repeated in 2004 but there was a rate increase of 1.6% that produced additional Revenues of \$16.1 million.

*Expenses.* Total Fiscal Year 2004 Expenses decreased by \$3.8 million over the previous year. There was no transfer of funds to the Rate Stabilization Fund in 2004; in 2003, \$16.8 was transferred.

In Fiscal Year 2004, a withdrawal of \$28.8 million was made from the Rate Stabilization Fund. Deposits of \$16.3 million to the Capital Account and \$13.8 million to the Residual Account were made from the Revenue Account.

### **Development of Adopted Fiscal Year 2005 Budget**

The Charter requires City Council to adopt a balanced operating budget for the fiscal year on or before May 31 of each year. The Mayor's operating budget is developed from proposed budgets submitted by the various departments of the City, including the Water Department. The Water Department began preparation of its operating budget for Fiscal Year 2005 in September 2003, when all divisions were supplied with documentation to complete and return to the Finance Division reflecting their budgetary requests for the next fiscal year. The Water Department has developed and installed a computerized budgeting system to enable each division to prepare budget requests based on historical and current operating experience. Divisional budget proposals setting forth estimated obligations for the ensuing fiscal year were submitted to the Finance Division in October 2003. Revenue estimates are prepared by the Water Revenue Bureau under the direction of the City's Finance Department and the Water Department. The Water Commissioner reviewed all divisional budget proposals and the Water Revenue Bureau's budget with the assistance of the Finance Division and submitted the Water Department's proposed budget to the City's Budget Bureau and the City's Managing Director in December 2003. The Mayor approved the Water Department's Operating Budget and included it as part of his proposed budget to City Council on March 18, 2004. After holding public hearings, City Council adopted the Fiscal Year 2005 budget on June 21, 2004.

### **Development of Proposed Fiscal Year 2006 Budget**

As of the date of this printing, the Water Department's Fiscal Year 2006 Operating Budget has followed the same pattern as the Fiscal Year 2005 Operating Budget. The Mayor has approved the Water Department's proposed Fiscal Year 2006 Operating Budget and included it as part of his proposed budget presented to City Council on January 25, 2005. City Council is currently reviewing the Mayor's proposed budget. As of March 1, hearings were being held by City Council.

Under the City's "Legally Enacted Basis" of accounting, a reservation of funds is established, for the estimated maximum contract limit, prior to the initiation of the delivery of services, supplies or equipment for each contract. This reservation of fund or "encumbrance" accounting system requires that the Water Department budget a slightly higher level of funds than its actual annual requirements might be under a cash basis of accounting, since the actual costs of each contract cannot be determined, in many instances, until after the fiscal year has ended. These "excess" encumbered funds are returned to the fund balance when the contract is liquidated, usually late in the ensuing fiscal year. The Fiscal Year 2006 Operating Budget includes an adjustment to the estimated fund balance at the close of Fiscal Year 2006 due to cancellation of commitments encumbered and not expended in Fiscal Year 2006 in the amount of \$12,000,000.

### **Revenues, Expenses and Debt Service**

The firm of Black & Veatch Corporation has been retained by the City to provide an engineering assessment of the current condition, use and maintenance of the Water and Wastewater Systems and to report on the financial feasibility of the issuance of the Bonds. The full text of the Engineering Report prepared by Black & Veatch Corporation is included as APPENDIX II to this Official Statement.

In its report, Black & Veatch Corporation has concluded that:

"Based on actual and estimated future annual financial operations of the Water and Wastewater Systems, it is our opinion that the Water and Wastewater Systems will yield pledged Project Revenues (including projected revenue increases indicated in this report resulting from rate increases which may be imposed after an administrative process without further legislation) over the amortization period of the Bonds sufficient to meet the payment or deposit requirements of:

- a. All expenses of operation, maintenance, repair and replacement of the Water and Wastewater Systems;
- b. All reserve funds required to be established out of such Project Revenues;
- c. The principal or redemption price of and interest on all Bonds, as the same shall become due and payable, for which such Project Revenues are pledged; and
- d. The Rate Covenants set forth in Section 5.01 of the General Ordinance."

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

The Net Revenues are currently sufficient to comply with the Rate Covenant and are projected to be sufficient (including projected revenue increases indicated in the report resulting from rate increases which may be imposed after an administrative process without further legislation) to comply with the Rate Covenant for each of the two Fiscal Years following the Fiscal Year in which the Bonds are issued.

The water and wastewater rents, rates and charges, including projected increases, are within generally acceptable ranges for services and are collectible.

The following table, prepared by Black & Veatch Corporation, as a part of APPENDIX II – "ENGINEERING REPORT" presents a statement of projected revenues and revenue requirements for Water and Wastewater Systems operations for Fiscal Year 2005 through Fiscal Year 2010, under the stipulations of the General Ordinance.

**PROJECTED REVENUE AND REVENUE REQUIREMENTS**  
**RATES EFFECTIVE FEBRUARY 1, 2005**  
**(in thousands of dollars)**

Line No.	Description	Fiscal Year Ending June 30,					
		2005	2006	2007	2008	2009	2010
<b>OPERATING REVENUE</b>							
1	Water Service - Existing Rates	140,792	140,227	140,323	139,514	138,449	137,575
2	Wastewater Service - Existing Rates	<u>254,791</u>	<u>254,193</u>	<u>253,812</u>	<u>253,248</u>	<u>251,997</u>	<u>250,673</u>
3	Total Service Revenue - Existing Rates	395,583	394,420	394,135	392,762	390,446	388,248
	Additional Service Revenue Required						
	Percent Increase						
	Months Effective						
4	FY 2005	13,883	33,221	33,197	33,082	32,886	32,701
5	FY 2006		17,640	17,627	17,566	17,462	17,364
6	FY 2007			18,355	18,291	18,183	18,080
7	FY 2008				19,045	18,933	18,826
8	FY 2009					52,092	51,799
9	FY 2010						<u>15,811</u>
10	Total Additional Service Revenue Required	13,883	50,861	69,179	87,984	139,556	154,581
11	Total Water & Wastewater Service Revenue	409,466	445,281	463,314	480,746	530,002	542,829
12	Transfer From/(To) Rate Stabilization Fund	38,210	31,070	22,110	37,090	(40)	(650)
	Other Income (a)						
13	Other Operating Revenue	12,568	12,522	12,497	12,451	12,400	12,349
14	Construction Fund Interest Income	2,045	3,753	2,080	5,937	4,201	2,398
15	Debt Reserve Fund Interest Income	0	325	325	954	954	954
16	Operating Fund Interest Income	1,370	1,389	1,412	1,410	1,432	1,450
17	Rate Stabilization Interest Income	2,212	1,512	975	377	3	10
18	Total Revenues	465,871	495,852	502,713	538,965	548,952	559,340
<b>OPERATING EXPENSES</b>							
19	Water & Wastewater Operations	221,806	229,764	235,524	244,946	253,232	261,838
20	Direct Interdepartmental Charges	55,468	56,173	57,276	59,321	61,031	62,790
21	Total Operating Expenses	277,274	285,937	292,800	304,267	314,263	324,628
22	<b>NET REVENUES AFTER OPERATIONS</b>	188,597	209,915	209,913	234,698	234,689	234,712
<b>DEBT SERVICE</b>							
	Senior Debt Service						
	Revenue Bonds						
23	Outstanding Bonds (b)	156,776	157,337	157,340	157,350	157,343	157,343
24	Pennvest Parity Bonds	384	384	384	384	384	384
25	Projected Future Bonds (c)	0	17,201	17,201	37,843	37,843	37,843
26	Total Senior Debt Service	157,160	174,922	174,925	195,577	195,570	195,570
27	<b>TOTAL SENIOR DEBT SERVICE COVERAGE (L22/L26)</b>	1.20 x	1.20 x	1.20 x	1.20 x	1.20 x	1.20 x
	Subordinate Debt Service						
28	Outstanding General Obligation Bonds	0	0	0	0	0	0
29	Pennvest Subordinate Bonds	1,227	1,227	1,227	1,227	1,227	1,227
30	Total Subordinate Debt Service	1,227	1,227	1,227	1,227	1,227	1,227
31	Total Debt Service on Bonds	158,387	176,149	176,152	196,804	196,797	196,797
32	<b>CAPITAL ACCOUNT DEPOSIT</b>	16,708	17,068	17,428	17,788	18,148	18,508
33	<b>TOTAL COVERAGE (L22/(L31+L32))</b>	1.07 x	1.08 x	1.08 x	1.09 x	1.09 x	1.09 x
<b>RESIDUAL FUND</b>							
34	Beginning of Year Balance	10,997	3,512	4,211	4,044	4,150	4,895
35	Interest Income	13	0	0	0	0	0
	Plus:						
36	End of Year Revenue Fund Balance	13,502	16,698	16,333	20,106	19,744	19,407
37	Deposit for Transfer to City General Fund (d)	4,924	4,994	4,994	4,994	4,994	4,994
	Less:						
38	Transfer to Construction Fund	21,000	16,000	16,500	20,000	19,000	20,000
39	Transfer to City General Fund	4,924	4,994	4,994	4,994	4,994	4,994
40	End of Year Balance	3,512	4,211	4,044	4,150	4,895	4,302
<b>RATE STABILIZATION FUND</b>							
41	Beginning of Year Balance	128,596	90,386	59,316	37,206	116	156
42	Deposit From/(To) Revenue Fund	(38,210)	(31,070)	(22,110)	(37,090)	40	650
43	End of Year Balance	90,386	59,316	37,206	116	156	806

(a) Includes other operating and nonoperating income, including interest income on funds and accounts transferrable to the Revenue Fund.

(b) Assumes a variable rate of 4.00% over the life of the Variable Rate Series 1997B Bonds.

(c) Assumes 5.50% interest, term of 30 years, with level annual principal and interest payments.

(d) Transfer of interest earnings from the Bond Reserve Account must first go to the Residual Fund as shown in Line 37 to satisfy the requirements for the Transfer to the City General Fund, with the balance included in Line 15 going to the Revenue Fund.

## **RATES**

### **Rate Setting Process**

Under the Charter, the Water Department is empowered and required to establish rates for water and wastewater service, in accordance with standards ordained by City Council, but without further authorization required by the City Council, at levels which provide sufficient revenue to meet operating expenses of the water and wastewater systems, including interdepartmental charges for services provided to the Water Department, and debt service requirements on all obligations issued for the Water Department, as well as other specific covenants of the General Ordinance.

The City has covenanted in the General Ordinance that it has authorized the imposition of rates and charges by the Water Department sufficient to comply with the Rate Covenant and that it will not repeal or materially adversely dilute or impair such authorization. See APPENDIX IV – “CERTAIN INFORMATION CONCERNING THE CITY OF PHILADELPHIA.”

The Philadelphia Code requires the Water Department to give written notice to City Council at least 30 days in advance of the filing of notice of any proposed change in water or sewer rates or charges and to submit with such written notice financial, engineering and other data upon which the proposed changes are based. After the filing of the proposed regulations providing for changes in rates or charges with the City’s Department of Records, the Department of Records is required to give public notice that the regulations have been filed and that any person affected by the proposed regulations may request a public hearing before the Water Department and the City Solicitor. Revised rates and charges become effective ten days after filing of a decision by the Water Commissioner at the conclusion of hearings or at any time thereafter, at his discretion.

In August 1992, the Water Department adopted Water Regulation 74 and Sewer Regulation 17, governing the change of water and sewer rates and charges. These regulations provide for appointment of a Hearing Officer, enumeration of the duties of the Hearing Officer, provision of a time frame for various elements of the rate change process, establishment of rules and guidelines for public hearings on proposed rate changes and advertisement thereof, compilation of a hearing record, the Hearing Officer’s report and the Water Commissioner’s Rate Determination.

### **Current Rate Structure**

The City’s general service customers’ water rate consists of a service charge related to the size of the meter, plus a schedule of quantity charges for all water use. The sewer rate is similar in form. On January 21, 2005, the Water Commissioner in his Rate Determination directed that there be a 12.8% rate increase, effective February 1, 2005. The Department has proposed to increase rates over the next three fiscal years, with a 2.1% increase for Fiscal Year 2006, a 7.6% increase for Fiscal Year 2007, and 5.4% increase proposed for Fiscal Year 2008. Hearings on the proposed rates will be held during the spring of 2005, with the Water Commissioner expected to make a rate determination in June of 2005. Increases in fire connection charges are also included in each of the above noted rate changes. For details of the current rate structure, see Table VI-1 of APPENDIX II – “ENGINEERING REPORT.” In addition, special charges are imposed for processing high-strength wastewater.

No challenges to the City’s rate determinations are currently pending.

The Water Department estimates that a typical customer has a 5/8 inch meter and uses 9.6 thousand cubic feet (Mcf) of water per year, which, based on the current rate schedule, results in an annual charge of \$234.84 for water service and \$330.12 for sewer service, for a total of \$564.96 per year.

On July 1, 2005 the total annual charges for water and sewer service are proposed to increase to \$576.84. On July 1, 2006, the proposed annual charge would be increased to \$620.88, and on July 1, 2007, the proposed annual charge would increase to \$654.24.

In addition to charges for general service customers, which are based on metered water consumption, the Water Department charges the City for water and wastewater service provided to City properties, the cost of operating and maintaining the high-pressure fire system, and the cost of the standard pressure public fire protection. Private protection also is billed at a flat rate varying with the size of the connection. The amounts billed to the City in Fiscal Year 2004 were \$22,289,256. The City is the largest customer of the Water Department, accounting in Fiscal Year 2004 for 5.0% of the Water Department's total revenues. The Water Department projects that the amount billed to the City in Fiscal Year 2005 will be \$21,600,000, which represents 4.2% of total projected revenues. See APPENDIX IV – "CERTAIN INFORMATION CONCERNING THE CITY OF PHILADELPHIA."

Charges for metered water service to the Bucks County Water and Sewer Authority (the "Authority") are set under a contract based on the recovery of operating and certain capital costs allocated to the Authority. Payments for water service rendered to the Authority in Fiscal Year 2004 were \$3,100,000. Fiscal Year 2005 payments are projected to be \$3,900,000. The contract for water service to the Authority expires in 2011.

On June 29, 2000 the Water Department entered into a contract with the Philadelphia Suburban Water Company, which in January of 2004 became known as Aqua Pennsylvania (AP), a division of Aqua America, under which the Water Department agreed to provide wholesale water service through March 1, 2026. This Agreement provides for service through two interconnections – one in Tinicum Township, Delaware County and another in Cheltenham Township, Montgomery County. The Tinicum interconnection allows for an average daily draw of 4.5 MGD and became operational in November, 2001. The Cheltenham interconnection became operational in March 2003. AP can draw up to 2.0 MGD on average per day through this point. Sale of water to AP generated a total annual revenue of \$2,264,000 in Fiscal Year 2004. Fiscal Year 2005 payments are projected to be \$2,400,000.

Contracts for wastewater treatment service with ten neighboring municipalities and authorities provide for the billing of charges based on operating costs attributable to the volume and strength of wastewater received from each of these customers. Capital costs for the wholesale wastewater customers are recovered by one of two different methods - four contract customers are billed monthly for depreciation and return on investment on allocated wastewater conveyance and treatment facilities, while six contracting entities have made, and continue to make, capital contributions to the Water Department for their allocated share of the investment in facilities related to the provision of service to these customers. Fiscal Year 2002 payments totaled \$19,447,000 for operating expenses, depreciation and return on investment for all ten wholesale wastewater customers. Fiscal Year 2003 payments from these wholesale wastewater customers were \$19,925,000, while Fiscal Year 2004 payments were \$20,484,000. Projected Fiscal Year 2005 revenues are \$22,900,000. Capital contributions from wholesale wastewater customers received by the Water Department as of December 31, 2004 have totaled \$83,547,836.

There are currently no disputes between the Water Department and its wholesale water and wastewater customers.

#### **Settlement with Bucks County Water and Sewer Authority (BCWSA)**

Since June of 2003 BCWSA has been delivering wastewater to the Water Department in excess of its annual daily contractual limit of 20 MGD. The parties have filed for arbitration on this issue, as provided in the agreement. On March 11, 2005 an agreement was executed by the Water Department and

Bucks County Water and Sewer Authority to resolve flow exceedance and other issues. The settlement provides for two payments to the Water Department. The first payment will be made on May 30, 2005 in the amount of \$ 9.0 million; a second payment of approximately \$ 9.6 million will be made on August 1, 2005. In return, the Water Department has agreed to increase BCWSA's annual daily flow limit from 20 MGD to 24 MGD. The Water Department has also agreed to lengthen the term of the current contract by 15 years, extending it to the year 2038.

### **Contract with Delaware County Regional Water Quality Control Authority (DELCORA)**

The Water Department has been serving DELCORA under a thirty year agreement to provide 50 MGD of wastewater treatment capacity at its Southwest Water Pollution Control Plant. Fiscal Year 2004 revenues under this agreement were approximately \$6.8 million. The long term agreement recently expired and the Water Department has continued to serve DELCORA under an extension to the agreement. Currently the Water Department and DELCORA have agreed to extend the current agreement to July 31, 2005 while the parties negotiate a revised service agreement.

### **Billing and Collections**

Since the successful implementation of monthly billing in January 1993, the collection factor has generally stayed steady at between 85% and 86%. It was 85.5% in Fiscal Year 2000, 85.7% in Fiscal Year 2001, 85.1% in Fiscal Year 2002, 84.5% in Fiscal Year 2003 and 84.7% in Fiscal Year 2004. Collections tend to dip each year during the annual winter moratorium on residential service shutoffs, and then rebound in the spring when shutoffs begin again.

Under the Charter, the Water Revenue Bureau is part of the City's Revenue Department, which comes under the direction of the Finance Director. In February 2003, oversight of the Water Revenue Bureau has been under the City's Revenue Commissioner, who reports directly to the Finance Director. The close level of cooperation between the two entities is expected to continue regardless of the reporting structure.

In the early 1990s, the Water Revenue Bureau began using outside collection agencies. The collection agencies' responsibilities include the implementation of the Utility Services Tenant's Rights Act ("USTRA"), which enables the Water Revenue Bureau to collect payments directly from the tenants when landlords refuse to pay. This program generated \$9.0 million in revenue collections, net of commissions, during Fiscal Year 1999, \$7.9 million in Fiscal Year 2000, \$5.3 million in Fiscal 2001 and \$5.8 million in Fiscal Year 2002. Collection agencies are also being utilized to collect on commercial delinquencies.

In September 1997, the Water Department and the Water Revenue Bureau began the implementation of the Automatic Meter Reading Program (the "AMR Program") involving the replacement of all residential water meters with new meters equipped with radio transmitter meter reading devices. The AMR Program is the largest and most significant water automatic meter reading endeavor to be implemented in the country. Installation commenced September 11, 1997, on schedule. By January 2003, more than 466,000 new meters had been installed. This program has greatly improved the accuracy of billing, which has resulted in fewer billing disputes, which has had a positive effect on customer service and collections. In addition to the increased revenue that results from such billing program improvements, the AMR Program significantly reduced the costs of meter reading and related support.

The Water Department is currently working with the Water Revenue Bureau, the Mayor's Office of Information Systems and others on a project to develop a replacement for its current billing system. This project is currently referred to as "Project Ocean." Project Ocean is the first application to reside on

the City of Philadelphia's Oracle ERP and is scheduled for implementation in December 2005. The Project Ocean will be delivered on an enterprise solution; all WRB core business functions will be on an integrated platform. The intent of this project is to replace the 25 year old application systems currently supporting WRB, and align WRB business processes with an application designed around industry "best practices." The Ocean System initiative will replace the disparate applications currently supporting the WRB with a single consolidated solution. This consolidation will facilitate the streamlining of WRB business processes, resulting in cost savings to the WRB through the elimination of redundant processes. Additionally, the CIS system will provide expanded collection capabilities to enable the WRB to increase revenues.

The Project Ocean Management Team will implement the Oracle e-Business application suite. Existing business processes will be aligned to the Oracle application that has been developed in accordance with industry "best practices." This will be accommodated through process analysis, process acclimation, set-ups and configuration. Training curriculums will be developed around newly configured business rules, and employee roles and responsibilities within the re-aligned business processes. Deployment is scheduled to be completed within the next two years.

Although final plans for the Project Ocean system have not yet been finalized, preliminary plans call for delivery and installation of the final system hardware and software in approximately May 2005. Extensive testing and training on the new system is scheduled to occur for approximately six months before the new system goes into revenue production in approximately January, 2006. The Project Ocean team will remain in place for support for at least six months after implementation.

The Water Department has no immediate plans to dispose of the current billing systems hardware and software and believes it will be available for either parallel processing as a backup for the new system.

The Water Department's current billing system, although aging, should be able to support current operations for at least the next five (5) years.

For a further discussion of the rates charged by the Water Department, see APPENDIX II – "ENGINEERING REPORT."

### **Compliance with Rate Covenants**

In Fiscal Years 2000, 2001, 2002, 2003 and 2004 the Water Department met the bond coverage requirements with revenue bond debt coverage ratios of 1.20 each year, and total debt service coverage ratios of 1.07, 1.07, 1.07, 1.08, and 1.08 respectively. Net revenues after operating expenses exceeded the amounts necessary to manage the senior debt service coverage requirements in Fiscal Year 2003 resulting in a deposit to the Rate Stabilization Fund totaling \$16.8 million. Senior debt coverage requirements for Fiscal Years 2000, 2001, 2002 and 2004 resulted in drawdowns of moneys from the Rate Stabilization Fund of \$22.4, \$39.4, \$26.3 and \$28.8 million respectively.

The Water Department first issued revenue bonds under the Prior Ordinance in Fiscal Year 1974. The General Ordinance, which became effective on August 26, 1993, mandates a coverage ratio of 1.20 for revenue bond debt service and 1.00 for total debt service. All Water Fund expenditures are included in the coverage formula under the General Ordinance. Under the coverage formula under the General Ordinance, the Water Department uses the Rate Stabilization Fund to manage coverage to 1.20 each year, with any revenue which would raise coverage over 1.20 deposited into the Rate Stabilization Fund.



For a summary of revenues, expenses and debt service coverages for Fiscal Years 2000 through 2004, see “HISTORICAL COMPARATIVE STATEMENT OF REVENUES AND EXPENSES (LEGALLY ENACTED BASIS) – Analysis of Comparative Statement of Revenues and Expenses” herein. For a discussion of the Rate Covenant contained in the General Ordinance, see “SECURITY FOR THE BONDS – Rate Covenant” herein.

### **Compliance with Insurance Covenants**

The Water Department has also met the additional rate covenants contained in the insurance agreements with FGIC and FSA described herein under “SECURITY FOR THE BONDS – Insurance Covenants” for each of the Fiscal Years such covenants have been in effect. The additional rate covenants contained in the insurance agreements are for the benefit of FGIC and FSA only and may be amended or waived by FGIC or FSA in their sole discretion without the consent of holders of the Bonds. Please refer to the tables below for an illustration of historical and projected continued compliance.

**PHILADELPHIA WATER DEPARTMENT  
HISTORICAL OPERATING RESULTS**

	<b>FY94</b>	<b>FY95</b>	<b>FY96</b>	<b>FY97</b>	<b>FY98</b>	<b>FY99</b>	<b>FY00</b>	<b>FY01</b>	<b>FY02</b>	<b>FY03</b>	<b>FY04</b>
Excess of Revenues over Expenses before Interest Expenses and Principal Payments on Bonded Indebtedness	\$146,856	\$178,971	\$170,662	\$169,571	\$182,527	\$160,016	\$154,026	\$162,782	\$146,927	\$204,124	\$159,590
Transfer (TO)/FROM The Rate Stabilization Fund	-\$42,629	-\$25,875	-\$24,290	-\$20,781	-\$30,728	\$15,416	\$22,359	\$39,369	\$26,321	-\$16,767	\$28,780
Net Revenues including rate stabilization	\$146,856	\$178,971	\$170,662	\$169,571	\$182,527	\$175,432	\$176,385	\$202,151	\$173,248	\$204,124	\$188,370
Net Revenues excluding rate stabilization	\$189,485	\$204,846	\$194,952	\$190,352	\$213,255	\$160,016	\$154,026	\$162,782	\$146,927	\$220,891	\$159,590
Revenue Bond Debt Service	\$112,691	\$132,198	\$125,496	\$124,108	\$129,154	\$148,183	\$148,288	\$150,190	\$147,242	\$157,201	\$158,057
Ratio (minimum 90%)	168%	155%	155%	153%	165%	108%	104%	108%	100%	141%	101%

**PROJECTED REVENUE AND REVENUE REQUIREMENTS  
RATES EFFECTIVE FEBRUARY 1, 2005  
(in thousands of dollars)**

	<u>Fiscal Year Ending June 30,</u>					
	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>
<b>NET REVENUES AFTER OPERATIONS</b>	188,597	209,915	209,913	234,698	234,689	234,712
Total Senior Debt Service	157,160	174,922	174,925	195,577	195,570	195,570
<b>TOTAL SENIOR DEBT SERVICE COVERAGE (L22/L26)</b>	1.20 x	1.20 x	1.20 x	1.20 x	1.20 x	1.20 x
Deposit From/(To) Revenue Fund from rate Stabilization fund	(38,210)	(31,070)	(22,110)	(37,090)	40	650
<b>NET REVENUES AFTER OPERATIONS (excluding Rate Stabilization withdrawal)</b>	150,387	178,845	187,803	197,608	234,689	234,712
Total Senior Debt Service	157,160	174,922	174,925	195,577	195,570	195,570
Ratio (minimum 90%)	96%	102%	107%	101%	120%	120%

**LITIGATION AND CLAIMS**

Claims against the Water Department are paid out of the Water Fund and only secondarily out of the City's General Fund, in the event cash balances in the Water Fund are insufficient at the time of payment of the claim. The General Fund is then reimbursed by the Water Fund for any such advance. The following discussion concerning litigation and claims, which has been prepared based on information supplied by the Law Department and has been reviewed by the Law Department, relates to litigation and claims against the City chargeable to the Water Fund. A discussion of other litigation affecting the City is

set forth under the caption in APPENDIX IV – “CERTAIN INFORMATION CONCERNING THE CITY OF PHILADELPHIA – Litigation.”

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

As of June 30, 2004, the City’s best estimate of the probable aggregate amount of loss from various claims is \$5,000,000 from the Water Fund. The City’s best estimate of the aggregate amount of loss from those claims in which the City believes some amount of loss is reasonably possible is \$5,000,000 from the Water Fund. This represents the City’s best estimate of the entire current inventory of such litigation. The City expects that it will take approximately three years to conclude these lawsuits.

The City paid \$4.8 million in Fiscal Year 2000, \$4.2 million in Fiscal Year 2001, \$3.5 million in Fiscal Year 2002, \$3.86 million in Fiscal Year 2003, \$2.88 million in Fiscal Year 2004 and \$1.51 million to date for Fiscal Year 2005. The Water Fund budget for Fiscal Year 2005 and Fiscal Year 2006 includes an appropriation of \$6.5 million for paying claims.

On June 27, 1998, a Consent Decree in the case of New Jersey Department of Environmental Protection v. Gloucester Environmental Management Services Inc. and City of Philadelphia et al., D.N.J., C.A. No. 84-0152, was executed among the State of New Jersey, the United States and certain defendants, including the City concerning the GEMS landfill in Gloucester Township, Camden County, New Jersey. Under the Consent Decree, the City reached an agreement with insurers by which the insurers paid into an escrow account all settlement allocations and reimbursed the City a portion of its expenses related to the litigation. Ancillary agreements concerning the allocation of any eventual cost overruns on the remediation activities have been negotiated among defendants; the prospect of any such future liabilities is considered low, and the City’s commitments pursuant to these agreements would be minimal.

#### **TAX EXEMPTION**

The Internal Revenue Code of 1986, as amended (the “Code”) contains provisions relating to the tax-exempt status of interest on obligations issued by governmental entities which apply to the Bonds. These provisions include, but are not limited to, requirements relating to the use and investment of the proceeds of the Bonds and the rebate of certain investment earnings derived from such proceeds to the United States Treasury Department on a periodic basis. These and other requirements of the Code must be met by the City subsequent to the issuance and delivery of the Bonds in order for interest thereon to be and remain excludable from gross income for purposes of federal income taxation. The City has made covenants to comply with such requirements.

In the opinion of Saul Ewing LLP and Booth & Tucker LLP, Co-Bond Counsel, interest on the Bonds is not includable in gross income for purposes of federal income taxation under existing statutes, regulations, rulings and court decisions. The opinion of Co-Bond Counsel is subject to the condition that the City comply with all applicable federal income tax law requirements that must be satisfied subsequent to the issuance of the Bonds in order that interest thereon continues to be excluded from gross income. Failure to comply with certain of such requirements could cause the interest on the Bonds to be so includable in gross income retroactive to the date of issuance of the Bonds. The City has covenanted to comply with all such requirements. Interest on the Bonds is not treated as an item of tax preference under Section 57 of the Code for purposes of the individual and corporate alternative minimum taxes; however, under the Code, to the extent that interest on the Bonds is a component of a corporate holder’s “adjusted current earnings,” a portion of that interest may be subject to the corporate alternative minimum tax. Co-Bond Counsel expresses no opinion regarding other federal tax consequences relating to the Bonds or the

receipt of interest thereon. See discussion of “Alternative Minimum Tax,” “Branch Profits Tax,” “S Corporations with Passive Investment Income,” “Social Security and Railroad Retirement Benefits,” “Deduction for Interest Paid by Financial Institutions to Purchase or Carry Tax-Exempt Obligations” and “Property or Casualty Insurance Company.”

In the opinion of Co-Bond Counsel, under the laws of the Commonwealth of Pennsylvania as enacted and construed on the date hereof, the Bonds, and the interest thereon are free from taxation for state and local purposes within the Commonwealth of Pennsylvania, but such exemption does not extend to gift, estate, succession or inheritance taxes or any other taxes not levied or assessed directly on the Bonds or the interest thereon. Profits, gains or income derived from the sale, exchange, or other disposition of the Bonds are subject to state and local taxation within the Commonwealth of Pennsylvania. Specifically, the Bonds are exempt from personal property taxes in Pennsylvania and interest on the Bonds is exempt from the Pennsylvania personal income tax and the Pennsylvania corporate net income tax.

### **Alternative Minimum Tax**

The Code includes, for purposes of the corporate alternative minimum tax, a preference item consisting of, generally, seventy-five percent of the excess of a corporation’s “adjusted current earnings” over its “alternative minimum taxable income” (computed without regard to this particular preference item and the alternative tax net operating loss deduction). Thus, to the extent that tax-exempt interest (including interest on the Bonds) is a component of a corporate holder’s “adjusted current earnings,” a portion of that interest may be subject to the alternative minimum tax.

### **Branch Profits Tax**

Under the Code, foreign corporations engaged in a trade or business in the United States will be subject to a “branch profits tax” equal to thirty percent (30%) of the corporation’s “dividend equivalent amount” for the taxable year. The term “dividend equivalent amount” includes interest on tax-exempt obligations.

### **S Corporations with Passive Investment Income**

Section 1375 of the Code imposes a tax on the income of certain small business corporations for which an S Corporation election is in effect, and that have “passive investment income.” For purposes of Section 1375 of the Code, the term “passive investment income” includes interest on the Bonds. This tax applies to an S Corporation for a taxable year if the S Corporation has Subchapter C earnings and profits at the close of the taxable year and has gross receipts, more than twenty-five percent (25%) of which are “passive investment income.” Thus, interest on the Bonds may be subject to federal income taxation under Section 1375 of the Code if the requirements of that provision are met.

### **Social Security and Railroad Retirement Benefits**

Under Section 86 of the Code, certain Social Security and Railroad Retirement benefits (the “benefits”) may be includable in gross income. The Code provides that interest on tax-exempt obligations (including interest on the Bonds) is included in the calculation of “modified adjusted gross income” in determining whether a portion of the benefits received are to be includable in gross income of individuals.

## **Deduction for Interest Paid by Financial Institutions to Purchase or Carry Tax-Exempt Obligations**

The Code, subject to limited exceptions not applicable to the Bonds, denies the interest deduction for indebtedness incurred or continued to purchase or carry tax-exempt obligations, such as the Bonds. With respect to banks, thrift institutions and other financial institutions, the denial to such institutions is one hundred percent (100%) for interest paid on funds allocable to the Bonds and any other tax-exempt obligations acquired after August 7, 1986.

## **Property or Casualty Insurance Company**

The Code also provides that a property or casualty insurance company may also incur a reduction, by a specified portion of its tax-exempt interest income, of its deduction for losses incurred.

## **NEGOTIABLE INSTRUMENTS**

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

## **CONSULTING ENGINEER'S REPORT**

The Engineering Report of Black & Veatch Corporation, Kansas City, Missouri, is included in APPENDIX II of this Official Statement in reliance upon the authority of such firm in engineering and related financial matters.

## **UNDERWRITING**

The Bonds are being purchased by the underwriter (the "Underwriter") at an aggregate underwriter's discount of \$313,781 from the initial public offering price of the Bonds. The Underwriter will purchase all of the Bonds if any such Bonds are purchased. The obligation of the Underwriter to purchase the Bonds is subject to certain terms and conditions set forth in the purchase contract related to the Bonds.

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

## **CERTAIN RELATIONSHIPS**

Ballard Spahr Andrews & Ingersoll, LLP is passing upon certain legal matters for the Underwriter as co-underwriter's counsel. BondResource Partners, LP is serving as the verification agent for the City for the bond issue. BondResource Partners, LP is an affiliate of Ballard Spahr Andrews & Ingersoll, LLP.

## **RATINGS**

Moody's, S&P and Fitch are expected to assign ratings of "Aaa/VMIG 1," "AAA/A-1+" and "AAA/F1+," respectively, to the Bonds with the understanding that upon delivery of the Bonds, the Bond Insurance Policy insuring scheduled payment when due of the principal of and interest on the Bonds will

be issued by the Bond Insurer and the Liquidity Facility will be provided by the Liquidity Facility Provider.

Certain information was supplied by the City and the Water Department to the rating agencies to be considered in evaluating the Bonds. Such ratings express only the views of the respective rating agencies and are not a recommendation to buy, sell or hold the Bonds.

Such ratings reflect only the views of such ratings organizations and any desired explanation of the significance of such ratings should be obtained from the rating agency furnishing the same, at the following addresses: Moody's Investors Service, Inc., 99 Church Street, New York, New York 10007; Standard & Poor's Ratings Services, 55 Water Street, New York, New York 10041; and Fitch Ratings, One State Street Plaza, New York, New York 10004. Generally, a rating agency bases its rating on the information and materials furnished to it and on investigations, studies and assumptions of its own. There is no assurance such ratings will not be revised downward or withdrawn entirely by the rating agencies, if in the judgment of such rating agencies, circumstances so warrant. Any such downward revision or withdrawal of such ratings may have an adverse effect on the market price of the Bonds.

### **LEGAL MATTERS**

Certain legal matters incident to the authorization, issuance and sale of the Bonds will be passed upon by Saul Ewing LLP and Booth & Tucker, LLP, both of Philadelphia, Pennsylvania, Co-Bond Counsel. The proposed form of such approving legal opinion is included herein as APPENDIX V. Certain legal matters will be passed upon for the City by the City Solicitor. Certain legal matters will be passed upon for the Underwriter by Ballard Spahr Andrews & Ingersoll, LLP and TME Law, LLC, both of Philadelphia, Pennsylvania. Certain legal matters will be passed upon for the Liquidity Facility Provider by its special counsel, Nixon Peabody LLP, New York, New York, and by its in-house Irish counsel.

### **FINANCIAL ADVISORS**

Fairmount Capital Advisors, Inc. and Phoenix Capital Partners, LLP have served as financial advisors (the "Financial Advisors") to the City with respect to the issuance and sale of the Bonds. The Financial Advisors have assisted in the preparation of this Official Statement and in other matters relating to the planning, structuring and sale of the Bonds by the City.

### **SWAP ADVISOR**

In connection with the authorization and issuance of the Bonds, the City has retained CDR Financial Products, Philadelphia, Pennsylvania and Beverly Hills, California, as its swap advisor ("Swap Advisor"). The Swap Advisor neither has nor assumes any responsibility with respect to the information contained in this Official Statement and all Appendices hereto and has not reviewed or undertaken to verify any information contained therein.

### **NO LITIGATION OPINION**

Upon the delivery of the Bonds, the City Solicitor will furnish an opinion, in form satisfactory to Co-Bond Counsel and the Underwriter, to the effect, among other things, that to the best of his knowledge after customary inquiry there is no litigation or other legal proceeding pending, or threatened in writing against the City, to restrain or enjoin the issuance or delivery of the Bonds or challenging the validity of the proceedings of the City taken in connection therewith or the pledge or application of any moneys

provided for the payment of the Bonds, or contesting the powers of the City with respect to any of the foregoing.

### **CERTAIN REFERENCES**

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

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

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

### **VERIFICATION OF MATHEMATICAL COMPUTATIONS**

BondResource Partners, LP, the verification agent, will deliver a report as of the Closing Date of the Bonds verifying the accuracy of (a) the mathematical computation of the adequacy of the Qualified Escrow Securities deposited in the Escrow Fund to pay, when due, maturing principal or redemption price, if any, and interest on the bonds to be refunded; and (b) the mathematical computations supporting the conclusion of Co-Bond Counsel that the Bonds are not “arbitrage bonds” under the Code. Such verification will be based upon certain information supplied by the Underwriter to BondResource Partners, LP.

### **CONTINUING DISCLOSURE**

In accordance with the requirements of Rule 15c2-12 (the “Rule”) promulgated by the Securities and Exchange Commission, the City has entered into continuing disclosure undertakings with the holders of its Outstanding Bonds. In connection with the issuance of the Bonds, the City will enter into continuing disclosure undertakings (the “Continuing Disclosure Agreement”) with Digital Assurance Certification, L.L.C., which shall constitute a written undertaking for the benefit of the owners of the Bonds, to assist the Underwriter in complying with the Rule and to provide continuing disclosure to the owners of the Bonds. See APPENDIX VII – “FORM OF CONTINUING DISCLOSURE AGREEMENT” for the detailed provisions of the Continuing Disclosure Agreement.

## ADDRESSES OF PRINCIPAL PARTIES

City:	The City of Philadelphia Office of the Director of Finance 1330 Municipal Services Building 1401 J.F. Kennedy Boulevard Philadelphia, Pennsylvania 19102 Attention: Director of Finance Telephone: (215) 686-6140 Facsimile: (215) 568-1947
Financial Office of Water Department	The City of Philadelphia Water Department Aramark Tower 1101 Market Street, 5 <sup>th</sup> Floor Philadelphia, Pennsylvania 19102 Attention: Deputy Commissioner for Finance Telephone: (215) 685-6106 Facsimile: (215) 685-4915
Fiscal Agent, Tender Agent, Paying Agent, Registrar and Escrow Agent:	Wachovia Bank, National Association 123 South Broad Street, 11 <sup>th</sup> Floor Philadelphia, Pennsylvania 19109 Attention: Corporate Trust Department Telephone: (215) 670-6303 Facsimile: (215) 670-6337
Liquidity Facility Provider:	DEPFA BANK plc New York Branch 623 Fifth Avenue, 22 <sup>nd</sup> Floor New York, New York 10022 Attention: General Manager Telephone: (917) 286-2025 Facsimile: (917) 286-2050
Remarketing Agent:	Citigroup Global Markets Inc. 390 Greenwich Street, 5 <sup>th</sup> Floor New York, New York 10013 Attention: Short-Term Tax Exempt Trading Telephone: (212) 723-7082 Facsimile: (212) 723-8809



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

THE CITY OF PHILADELPHIA

By: /s/ John F. Street  
John F. Street, Mayor

By: /s/ Jonathan A. Sidel  
Jonathan A. Sidel, City Controller

By: /s/ Romulo L. Diaz, Jr.  
Romulo L. Diaz, Jr., Acting City  
Solicitor

Approved:

By: /s/ Vincent J. Jannetti  
Vincent J. Jannetti, Acting Director of Finance

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**APPENDIX I**

**FINANCIAL STATEMENTS OF THE WATER FUND  
FOR FISCAL YEARS ENDED JUNE 30, 2004 AND 2003**

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# 2004 Financial Statements



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CITY OF PHILADELPHIA WATER DEPARTMENT

2004 FINANCIAL STATEMENTS

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## The City of Philadelphia Water Department Management Discussion and Analysis

The Philadelphia Water Department is a municipal utility serving the citizens of the Philadelphia region by providing integrated water, wastewater, and stormwater services. Our missions are: 1) to operate and maintain the infrastructure necessary to provide high quality affordable drinking water to protect the public health; 2) to provide an adequate and reliable water supply for all residential, business, and public needs; and 3) to sustain and enhance the region's watersheds and quality of life by managing wastewater and storm water effectively.

Water Department management has prepared this narrative overview and analysis of the financial statements of the City of Philadelphia, Pennsylvania Water Fund for the fiscal year. The information presented here should be read in conjunction with the financial statements immediately following the discussion and analysis.

### Financial Highlights

The Water Department met its bond coverage ratios for the year with a revenue bond coverage ratio of 1.20 and a total debt service coverage ratio of 1.08.

At the end of the current fiscal year, the Water Fund's *net assets* were \$522,544,480 resulting from an excess of its assets over its liabilities; its *unrestricted net assets* showed a surplus of \$22,915,000

The Water Fund's net assets showed an increase of \$12,176,490 during the current fiscal year.

Increases in net assets resulted from:

- \$21,640,000 in a change in accruing revenues to include service through 6/30 but not yet billed
- \$16,195,000 increase in revenue from the 1.6% homeowner's rate increase of 7/1/03
- \$4,138,000 decrease in the payment of excess interest earnings to the General Fund resulting from low interest earnings from Water Fund investments.

Decreases in Net Assets resulted from:

- \$19,088,000 reduction in interest earnings on Sinking Fund and other investments. The previous year included a one-time bond interest swap agreement of \$29 million.
- \$5,751,000 decrease in grant revenue, mainly from the cessation of the Clean Streams grant.
- \$1,365,000 increase in spending in the Purchased Services class.
- \$3,593,000 changes in other revenue and expenditure classes.



## **Net Assets**

As noted earlier, net assets are useful indicators of a government's financial position. At the close of the current fiscal year, the Water Department's assets exceeded its liabilities by \$522,544,480.

Capital assets, such as land, buildings, meters, water mains, and sewer lines, less any outstanding debt issued to acquire these assets comprise a large portion of the Water Department's net assets. Although these capital assets assist in providing services to our customers, they are generally not available to fund the operations of future periods. In addition, a portion of the Department's net assets, \$386,320,000 is subject to external restrictions as to use. The remaining component of net assets is the unrestricted net assets, which ended the fiscal year with a surplus of \$22,915,000.

## **Water and Wastewater Rates**

In early 2004 the Water Department proposed a rate increase to cover its cost of operation from FY05 through FY08. The Department has determined that additional revenues estimated to be \$282 million would be required to cover the Department's costs for the FY05 through FY08 period. This additional revenue is required for a variety of reasons including the following: increased debt service (\$72.2 million); transfers to Residual Fund for Capital purposes (\$67.6 million); additional regulatory requirements (\$30.6 million); wage increases and fringes (\$28.4 million); loss of state subsidy for wastewater operations (\$32.0 million); decrease in interest income (\$25.4 million); and additional security and related costs (\$8.9 million).

To raise this additional revenue, the Department has proposed a rate increase to be phased in over a four-year period, FY05 through FY08. Rate increases averaging 8.73 percent per year would eventually add an additional \$16.53 to the average monthly residential charges for water, sewer, and storm water service. Accordingly, average residential charges would increase from the current \$41.77 per month to \$58.30 in 2008.

On Jan 21, 2005 the Water Commissioner approved a 12.8% across-the-board rate increase for implementation on February 1, 2005. The average customer's bill increased from \$41.77 per month to \$47.08. These rates will continue in effect until June 30, 2005. On July 1, 2005, the second of the four-phased rate increases is expected to take effect. Hearings are being held during the spring of 2005, which will determine the actual increase of the rates that will be in effect from July 1, 2005 through June 30, 2007.

Unlike many neighboring communities where sewer bills are separate from water bills or assessed through an annual charge, Philadelphians receive a bill that combines water, wastewater, and storm water charges. Unfortunately, this combined billing sometimes leads to the misimpression that our water rates are high. In fact, the Water Department

now provides services that are the least expensive residential rates in the region. PWD's water rates continue to be less than half those charged by most neighboring utilities. Even after full implementation of the Department's proposed rates in 2008, the Department expects to have water rates that are lower than comparable surrounding utilities. In fact, PWD's proposed water rates for FY08 of \$27.25 would be less than the 2004 water rates for some neighboring water utilities.

2004 Area Residential* Water/Sewer Charges	Monthly Water Bill	Monthly Sewer Bill
Pennsylvania American Water+	\$47.23	N/A
Philadelphia Suburban Water+	\$45.75	N/A
New Jersey American Water+	\$35.15	N/A
North Wales Water Authority+	\$26.44	N/A
North Penn Water Authority+	\$25.61	N/A
Doylestown Township	\$25.40	\$36.67
CCMUA (Camden County)**	N/A	\$26.25
Trenton	\$18.12	\$27.37
<b>Philadelphia Water Department</b>	<b>\$17.27</b>	<b>\$17.50</b>

Rates in effect on November 16, 2004. Storm Water charges are excluded from sewer calculation because many jurisdictions fund such services from the general tax base or a separate utility assessment.

\* Calculations based on 6230 gallons/month (833 cu.ft.)

\*\* Sewer-only utility.

+ Water-only utilities

Source: *Philadelphia Water Department*.

As of the close of the current fiscal year, Moody's, Standard and Poor's and Fitch rate the City's bonds as follows:

<b>City of Philadelphia's Bond Ratings</b>			
General Obligation and Revenue Bonds			
	<b>Moody's Investors</b>	<b>Standard &amp; Poors</b>	
	<u>Service</u>	<u>Corporation</u>	<u>Fitch IBCA</u>
General obligation bonds	Baa1	BBB	A-
<b>Water &amp; sewer revenue bonds</b>	<b>A3</b>	<b>A-</b>	<b>A-</b>
Aviation revenue bonds	A3	A	A

The Water Department has implemented numerous measures to improve service, reduce costs, and enhance revenues over the past decade. It has greatly reduced the cost of operating at its Biosolids and wastewater facilities. The Department has greatly contributed to the noticeable improved quality of Philadelphia's rivers and streams. It has re-finance more than \$1.7 billion in revenue bonds for net present value savings of \$92 million in debt service expense.

### **Pilot Plant Research**

We are conducting research at two pilot plants, one for the treatment of drinking water withdrawn from the Delaware River, the other for the Schuylkill. Before investing in major capital improvements at our water treatment plants, this research provides us with vital information and a better understanding of how changes to our treatment process will

impact the operations of our treatment facilities, as well as the overall quality of the treated water. This research helps us to meet future regulatory mandates that protect public health, in a cost-effective way, and to do so well ahead of the federal deadlines.

### **On-line Drinking Water Quality Monitoring**

In response to heightened security concerns, real-time water quality monitoring systems at our water treatment plants, reservoirs, pumping stations, wholesale customer connections, and at numerous points throughout our water distribution system will provide us accurate information in a timely manner. This technology is vital to the utmost safety of water quality and the health of our customers. Expected installation cost: \$500,000.

### **Early Warning System**

To further protect our drinking water sources from chemical spills and other potential hazards, this system is our first line of defense. Funded in part by a \$725,000 grant from the Pennsylvania Department of Environmental Protection, it will provide us with essential information when making critical treatment and pumping decisions in response to spills and accidents that can have a detrimental impact on the rivers. Recent events including the major oil spill on the Delaware in the fall of 2004, a tanker car derailment of hazardous materials along the banks of the Schuylkill, and a fire at a Bridgeport, Pennsylvania chemical plant have emphasized the need to improve coordination and planning for such events. This state-of-the-art system has already increased communication among water suppliers up and down the Delaware and Schuylkill Rivers.

### **New Pumping Station**

The construction of a new water pumping station is necessary to enhance local water pressure and water service reliability for our customers in the Northwest section of the City. This new pumping station will house eight energy-efficient pumps, a control room and offices.

### **Assessing the City's Sewer Infrastructure**

Maintaining the sewer system is equally important. Heavy rains experienced in the summer were highly unusual for Philadelphia, and they greatly impacted our sewers in several neighborhoods. That is why it is important for us to continue a sewer assessment program begun more than a year ago. With nearly 3,000 miles of sewers collecting nearly 500 million gallons of wastewater a day, assessing sewer conditions is a major part of our operations. We've already videotaped and evaluated nearly 230 miles of sewers, and are developing a database and ranking system to prioritize sewer improvements. We will continue to assess additional miles of sewers each year.

## **Long-term Control Plan for Combined Sewer Overflows**

During heavy rainstorms, the release of some storm water and sewage over flows from combined sewers (sewers that carry storm water and sanitary waste in one pipe) to the City's rivers and streams, causing pollution to these waterways. Nearly eight years ago we began a short-term plan, using industry accepted best practices to operate our sewer system. These efforts successfully reduced overflow volume by three percent or six billion gallons a year. Our efforts included detecting and eliminating overflows during dry weather, getting the most storage as possible in our sewer system, and stepping up inspections and monitoring at sites where overflows occur. Since then, we have begun a long-term control plan that includes \$48 million in capital improvements so we can capture even more flow in the sewer system. During the next three years, our plan features a "watershed-based" approach, which involves other regional stakeholders in planning efforts that are more comprehensive and reach far beyond city boundaries. We anticipate that these efforts will result in reducing overflow volume from combined sewers approximately 15 percent to 19 percent by late 2007 and early 2008.

## **Waterways Restoration Program**

Philadelphia has a rich network of more than 100 miles of streams and tributaries. During wet weather, storm water and sanitary waste can overflow to these waterways. Some of the most visible and distressing effects of overflows are debris and floatable materials that remain in the waterways. This past year, we began a Waterways Restoration Program to clean up the waterways and we are undertaking restoration projects at both combined sewer overflows and storm water overflows. These projects will help eliminate potential health hazards by removing pools of water that remain where the overflows occur. The cost for the first year was \$515,000 and we have removed over 100 tons of debris, including cars, from Philadelphia's streams.

## **Advance Regional Source Water Protection Plans**

A healthy water environment means a better quality of life for our customers. It will also support sustainable economic development. We've already completed source water assessments for the Schuylkill and Delaware River watersheds. Funded in part by a grant from Pennsylvania Department of Environmental Protection, other partners in the project included Aqua Pennsylvania and Pennsylvania American Water companies. We now have a better understanding of the major issues within the watersheds, such as agricultural run-off up river from Pennsylvania that can impact the quality of our drinking water sources. During the next three years, we will develop source water protection plans for both rivers, using a grant of \$200,000 from the Department of Environmental Protection. These plans will help us prioritize source water protection programs to preserve Philadelphia's water sources.

## **Requests for Information**

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

## STATEMENT OF NET ASSETS, JUNE 30, 2004 AND 2003

(amounts in thousands)

	...2004...	...2003...
<b>ASSETS</b>		
Current Assets:		
Cash on Deposit and on Hand	\$30	
Equity in Treasurer's Account	43,875	\$37,704
Due from Other Governments	73	8,181
Accounts Receivable	198,404	174,520
Allowance for Doubtful Accounts	(106,059)	(109,465)
Inventories	13,338	12,931
<b>Total Current Assets</b>	<u>149,661</u>	<u>123,871</u>
Noncurrent Assets:		
Restricted Assets:		
Equity in Treasurer's Account	225,369	329,962
Sinking Funds and Reserves	158,109	157,652
Grants for Capital Purposes	50	
Receivables	2,792	4,755
<b>Total Restricted Assets</b>	<u>386,320</u>	<u>492,369</u>
Capital Assets:		
Land	5,919	5,919
Infrastructure	1,614,779	1,567,169
Construction in Progress	123,924	114,361
Buildings and Equipment	1,387,220	1,338,038
Accumulated Depreciation	(1,460,933)	(1,390,721)
<b>Total Capital Assets</b>	<u>1,670,909</u>	<u>1,634,766</u>
<b>Total Noncurrent Assets</b>	<u>2,057,229</u>	<u>2,127,135</u>
<b>Total Assets</b>	<u>2,206,890</u>	<u>2,251,006</u>
<b>LIABILITIES</b>		
<u>Current Liabilities:</u>		
Vouchers Payable	5,324	5,262
Accounts Payable	6,467	5,231
Salaries & Wages Payable	5,076	4,379
Construction Contracts Payable	7,969	6,923
Accrued Expenses	13,437	25,568
Deferred Revenue	6,109	6,331
Current Portion of Long Term Obligations	71,897	69,030
<b>Total Current Liabilities</b>	<u>116,280</u>	<u>122,724</u>
<u>Noncurrent Liabilities:</u>		
Long Term Obligations	1,666,507	1,738,406
Unamortized Discount and Loss	(114,474)	(126,293)
Other Noncurrent Liabilities	16,032	5,801
<b>Total Noncurrent Liabilities</b>	<u>1,568,065</u>	<u>1,617,914</u>
<b>Total Liabilities</b>	<u>1,684,346</u>	<u>1,740,638</u>
<b>NET ASSETS</b>		
Invested in Capital Assets, Net of Related Debt	134,076	111,833
Restricted For:		
Capital Projects	79,145	153,717
Debt Service	158,109	157,652
Rate Stabilization	128,300	156,141
Unrestricted	22,915	(68,975)
<b>Total Net Assets</b>	<u>\$522,545</u>	<u>\$510,368</u>

STATEMENT OF REVENUES, EXPENSES AND CHANGES IN NET ASSETS  
FOR THE FISCAL YEAR ENDED JUNE 30, 2004 AND 2003

(amounts in thousands)

	...2004...	...2003...
Operating Revenues:		
Charges for Goods and Services	\$397,253	\$381,181
Miscellaneous Operating Revenues	4,318	4,195
Total Operating Revenues	<u>401,571</u>	<u>385,376</u>
Operating Expenses:		
Personal Services	107,334	103,652
Purchase of Services	63,405	62,040
Materials and Supplies	24,157	23,145
Employee Benefits	41,914	44,069
Indemnities and Taxes	1,711	4,213
Depreciation and Amortization	82,445	81,852
Total Operating Expenses	<u>320,966</u>	<u>318,971</u>
Operating Income (Loss)	<u>80,605</u>	<u>66,405</u>
Nonoperating Revenues (Expenses):		
Operating Grants	2,893	8,644
Interest Income	2,942	22,030
Debt Service - Interest	(91,757)	(93,459)
Other Expenses	(4,146)	(476)
Total Nonoperating Revenues (Expenses)	<u>(90,068)</u>	<u>(63,261)</u>
Income (loss) before Transfers	(9,463)	3,144
Transfers Out	0	(4,138)
Change in Net Assets	<u>(9,463)</u>	<u>(994)</u>
Net Assets - Beginning of Period	510,368	511,362
Adjustment	21,640	
Net Assets - End of Period	<u>\$522,545</u>	<u>\$510,368</u>

STATEMENT OF CASH FLOWS  
JUNE 30, 2004

(amounts in thousands)

	...2004...	...2003...
<b>Cash Flows from Operating Activities</b>		
Receipts from Customers	\$409,760	\$389,878
Payments to Suppliers	(91,903)	(89,080)
Payments to Employees	(149,096)	(144,179)
Claims Paid	(2,821)	(4,110)
Other Receipts (Payments)	0	0
Net Cash Provided by Operating Activities	165,940	152,509
<b>Cash Flows from Non-Capital Financing Activities</b>		
Operating Grants Received	2,843	8,330
Operating Subsidies and Transfers to Other Funds	0	(4,138)
Net Cash Provided by Non-Capital Financing Activities	2,843	4,192
<b>Cash Flows from Capital &amp; Related Financing Activities</b>		
Proceeds from Capital Debt	0	362,661
Capital Contributions	0	240
Acquisition and Construction of Capital Assets	(111,785)	(111,477)
Interest Paid on Capital Debt	(89,169)	(88,493)
Principal Paid on Capital Debt	(69,032)	(456,004)
Other Receipts (Payments)	0	0
Net Cash Provided (Used) by Non-Capital Financing Activities	(269,986)	(293,073)
<b>Cash Flows from Investing Activities</b>		
Interest and Dividends	2,811	52,268
Net Cash Provided by Investing Activities	2,811	52,268
Net Increase (Decrease) in Cash & Cash Equivalents	(98,392)	(84,104)
Balances - Beginning of the Year	367,666	451,770
Balances - End of the Year	269,274	367,666
<b>Reconciliation of Operating Income (Loss) to Net Cash Provided (Used) by Operating Activities:</b>		
Operating Income (Loss)	80,605	66,405
Adjustments to Reconcile Operating Income to Net Cash Provided (Used) by Operating Activities:		
Depreciation Expense	82,445	81,852
Change in Assets and Liabilities:		
Receivables, Net	2,407	(1,349)
Inventories	(408)	417
Accounts and Other Payables	1,662	5,732
Accrued Expenses	(771)	(548)
Net Cash Provided by operating activities	\$165,940	\$152,509



## BUDGETARY COMPARISON SCHEDULE

Water Operating Fund

For the Fiscal Year Ended June 30, 2004

(amounts in thousands)

<u>Revenues</u>	<u>Budgeted Amounts</u>			Final Budget to Actual Positive (Negative)
	<u>Original</u>	<u>Final</u>	<u>Actual</u>	
Locally Generated Non-Tax Revenue	\$ 398,248	\$ 395,884	\$ 383,122	\$ (12,762)
Revenue from Other Governments	7,700	3,405	2,769	(636)
Revenue from Other Funds	<u>66,236</u>	<u>59,968</u>	<u>52,438</u>	<u>(7,530)</u>
Total Revenues	472,184	459,257	438,329	(20,928)
<b><u>Expenditures and Encumbrances</u></b>				
Personal Services	105,898	105,898	99,956	5,942
Pension Contributions	17,900	17,900	15,622	2,278
Other Employee Benefits	<u>29,220</u>	<u>29,220</u>	<u>26,727</u>	<u>2,493</u>
Sub-Total Employee Compensation	153,018	153,018	142,305	10,713
Purchase of Services	80,791	80,791	74,013	6,778
Materials and Supplies	32,527	32,575	31,730	845
Equipment	4,360	4,312	3,005	1,307
Contributions, Indemnities and Taxes	6,521	6,521	2,821	3,700
Debt Service - Principal	94,143	94,143	69,031	25,112
Debt Service - Interest	68,279	68,279	89,149	(20,870)
Short-Term Interest	1,500	1,500	21	1,479
Payments to Other Funds	<u>43,045</u>	<u>43,045</u>	<u>38,322</u>	<u>4,723</u>
Total Expenditures and Encumbrances	<u>484,184</u>	<u>484,184</u>	<u>450,397</u>	<u>33,787</u>
Operating Surplus (Deficit) for the Year	<u>(12,000)</u>	<u>(24,927)</u>	<u>(12,068)</u>	<u>12,859</u>
Fund Balance Available, July 1, 2003	-	-	-	-
<b><u>Operations in Respect to Prior Fiscal Years</u></b>				
Commitments Cancelled - Net	12,000	12,000	12,065	65
Prior Period Adjustments	<u>          </u>	<u>          </u>	<u>3</u>	<u>3</u>
Adjusted Fund Balance, July 1, 2003	<u>12,000</u>	<u>12,000</u>	<u>12,068</u>	<u>68</u>
Fund Balance Available, June 30, 2004	<u>-</u>	<u>\$ (12,927)</u>	<u>-</u>	<u>\$ 12,926</u>

**CITY OF PHILADELPHIA WATER DEPARTMENT**

**BONDED DEBT FOR THE FISCAL YEAR ENDED JUNE 30, 2004**

(amounts in thousands)

Series	ORIGINAL AUTHORIZATION		Outstanding June 30,2004	Maturities	Interest Rates	FISCAL YEAR 2004		Outstanding June 30, 2005
	Date	Issued				Debt Service Interest	Principal	
<b>Revenue Bonds:</b>								
Fourteenth Series	5/15/89 *	\$158,265	\$60,400	10/2005 to 10/2008	N.A.	\$	\$	\$60,400
Fifteenth Series	5/15/89 *	176,005	15,220	10/2004	N.A.		15,220	
Series 1993	8/1/93 *	1,157,585	338,990	6/2005 to 6/2011	5.50 to 10.00	22,631	38,760	300,230
Series 1995	04/15/95	221,630	177,055	8/2004 to 8/2018	5.30 to 6.75	10,230	8,235	168,820
Series 1997 (A)	10/15/97	250,000	214,995	8/2004 to 8/2027	5.00 to 5.125	10,789	4,975	210,020
Series 1997 (B)	11/25/97	100,000	90,500	8/2004 to 8/2027	Variable	969	2,200	88,300
Series 1998	12/25/98	135,185	135,185	12/2011 to 12/2014	5.25	7,097		135,185
Series 1999	07/07/99	33,040	33,040	12/2005 to 12/2006	5.00	1,652	20	33,020
Series 2001	11/15/01	285,920	285,920	11/2011 to 11/2024	3.800 to 5.500	14,566		285,920
Series 2003	04/01/03	381,275	375,260	6/2004 to 6/2023	Variable	16,962	950	374,310
Penn Vest	04/30/00	6,700	2,599	7/2004 to 4/2019	1.41 to 2.73	66	397	2,201
<b>Total Revenue Bonds</b>		<b>\$2,905,605</b>	<b>\$1,729,164</b>			<b>84,962</b>	<b>70,757</b>	<b>1,658,406</b>
<b>General Obligation Bonds:</b>								
Penn Vest	06/15/93	<u>20,000</u>	<u>9,241</u>	07/2004 to 04/2012	1.00	<u>87</u>	<u>1,140</u>	<u>8,101</u>
<b>Total Bonded Debt</b>			<b><u>\$1,738,405</u></b>			<b><u>85,049</u></b>	<b><u>71,897</u></b>	<b><u>\$1,666,507</u></b>

\* Partially Refunded

**ANNUAL BONDED DEBT SERVICE REQUIREMENT:**

<u>Fiscal Year</u>	<u>Interest</u>	<u>Principal</u>	<u>Total</u>
2005	85,049	71,897	156,946
2006	79,841	77,735	157,576
2007	76,109	81,542	157,651
2008	72,635	85,101	157,736
2009	69,298	88,509	157,807

The First Series through the Thirteenth and the Sixteenth were refunded.

Capitalized Interest added to Construction in Progress in Fiscal 2004 was \$6,152,636  
Interest Expense was reduced by the same amount.

**SUPPLEMENTAL SCHEDULE OF RATE COVENANT COMPLIANCE FOR FISCAL YEAR ENDED  
JUNE 30, 2004 (Legally Enacted Basis)**

(amounts in thousands)

LINE NO.	.....2004.....
1.	Total Revenue and Beginning Fund Balance \$421,618
2.	Net Operating Expense (262,029)
3.	Transfer (To) From Rate Stabilization Fund 28,779
4.	<b>Net Revenues</b> <u>188,368</u>
5.	Revenue Bonds Outstanding (156,973)
6.	General Obligation Bonds Outstanding 0
7.	Pennvest Loan (1,227)
8.	<b>Total Debt Service</b> <u>(158,200)</u>
9.	<b>Net Revenue after Debt Service</b> <b>30,168</b>
10.	Transfer to General Fund 0
11.	Transfer to Capital Fund (16,348)
12.	Transfer to Residual Fund (13,820)
13.	<b>Total Transfers</b> <u>(30,168)</u>
14.	<b>Net Operating Balance for Current Year</b> <u><u>(0)</u></u>

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

$$\begin{array}{r}
 \text{COVERAGE A:} \\
 \hline
 \text{Line 4 } \$188,368 \\
 / \text{ Line 5 } (\$156,973) \\
 \hline
 = \text{ COVERAGE A: } \underline{\underline{1.20}}
 \end{array}$$

$$\begin{array}{r}
 \text{COVERAGE B:} \\
 \hline
 \text{Line 4 } \$188,368 \\
 / (\text{Line 8} + \text{Line 11}) (\$174,547) \\
 \hline
 = \text{ COVERAGE B: } \underline{\underline{1.08}}
 \end{array}$$

## **1. THE GOVERNMENT OF PHILADELPHIA**

The City of Philadelphia was founded in 1682 and was merged with the county in 1854. There are two principal governmental entities in Philadelphia: (1) the City of Philadelphia, which performs both the ordinary municipal functions and the traditional county functions; and (2) the School district of Philadelphia, which is part of the public education system of the Commonwealth of Pennsylvania. In addition to the School District of Philadelphia, there are a number of other governmental and quasi-governmental entities with the City. The financial statements as set forth herein present only the operations of the City of Philadelphia Water Fund.

The City is governed largely under the 1951 Philadelphia Home Rule Charter. In some matters, including the issuance of short and long-term debt, the City is governed by the laws of the Commonwealth of Pennsylvania.

Pursuant to the Philadelphia Home Rule Charter, the Water Department has the power and duty to operate, maintain, repair and improve the City's Water and Wastewater Systems. The Water Department is managed by a Commissioner who is appointed by the City's Managing Director with the approval of the Mayor. The Commissioner appoints his deputies with the approval of the City's Managing Director and substantially all other employees are appointed under the provisions of the City's Civil Service Regulations. The executive offices of the Water Department are located at ARAMark Tower, 1101 Market Street, Philadelphia, Pennsylvania 19107-2994.

The Department of Revenue of the City has performed for the Water Department all functions relating to meter reading, billing and collections. The Director of Finance performs general fiscal accounting and has overall responsibility for the fiscal administration of all City departments, including the Water Department. The audit function for the City, including the Water Department, is the responsibility of the Office of the City Controller. Legal matters affecting the Water Department are the responsibility of the Office of the City Solicitor.

## **2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES**

The financial statements of the Philadelphia Water Department have been prepared in conformity with Generally Accepted Accounting Principles (GAAP) as applied to governmental units. The Governmental Accounting Standards Board (GASB) is the accepted standard setting body for establishing governmental accounting and financial reporting principles. The more significant of the City's accounting policies are described below.

### **A. Basis of Accounting**

For purposes of rate setting, calculating rate covenant compliance, debt service coverage and budgeting, the Water Fund accounts are maintained on the modified accrual basis of accounting also referred to as the “Legally Enacted Basis.” Under this basis, revenues are recognized in the account period in which they are received. Investment earnings are recorded when earned, as they are measurable and available. Expenditures are recorded in the accounting period in which the fund liability is incurred, if measurable, except expenditures for debt service, prepaid expenditures, and other long-term obligations, which are recognized when paid. Expenditures for claims and judgments, compensated absences and other long-term obligations are accrued if expected to be liquidated with available resources.

At fiscal year-end the Water Fund accounts are adjusted to the full accrual basis of accounting required by GAAP. The Water Fund is accounted for on a flow of economic resources measurement focus. With this measurement focus, all assets and all liabilities associated with the operation are included on the Statement of Net Assets. Fund equity (i.e., net total assets) is segregated into contributed capital and retained earnings components. In accrual basis accounting, revenues are recognized in the accounting period in which they are earned and expenses are recognized at the time the liabilities are incurred. Under GASB Statement No. 20, Accounting and Financial Reporting for Proprietary Activities, the Water Fund will continue to follow Financial Accounting Standards Board (FASB) pronouncements issued on or before November 30, 1989 unless those pronouncements conflict with or contradict GASB pronouncements and will follow FASB standards issued after that date which do not conflict with GASB standards.

Water revenues, net of uncollected accounts, are recognized as billed on the basis of scheduled meter readings. Revenues are accrued for unpaid bills at June 30 and for services provided but not yet billed at June 30.

### **B. Legal Compliance**

The City’s budgetary process accounts for certain transactions on a basis other than GAAP.

In accordance with the Philadelphia Home Rule 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, five Special Revenue Funds (County Liquid Fuels Tax, Special Gasoline Tax, Hotel Room Rental Tax, Grants Revenue and Community Development 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: personal services; purchase of services; materials and supplies; equipment; contributions; indemnities and taxes; debt service; payments to other funds; and miscellaneous. 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 Council approval. Appropriations not expended or encumbered at year-end are lapsed. Departmental comparisons of budget to actual activity are located in the City's Supplemental Report of Revenues and Obligations.

The City Capital Improvement Fund budget is adopted annually by the City Council. The Capital Improvement budget is appropriated by project for each department. Due to the nature of the projects, it is not always possible to complete all bidding, contracts, etc. within a twelve-month period. All transfers between projects exceeding twenty percent for each project's original appropriation must be approved by City Council.

As part of the amendment process, budget estimates of City related revenues are adjusted and submitted to City Council for review. Changes in revenue estimates do not need City Council approval, but are submitted in support of testimony with regard to the appropriation adjustments.

The following schedule reconciles the differences between the Legally Enacted Basis and GAAP Basis:

<u>Water Fund</u>	
Fund Balance-Legal Basis 6/30/04	\$ 0
Assets omitted from the legal basis:	
(1) Receivables from Other Governments or Funds	27,881
(2) Fixed Assets-Net of Depreciation	1,670,909
(3) Restricted Assets	<u>386,320</u>
	\$ <u>2,085,110</u>
Liabilities omitted from the legal basis:	
(4) Construction Contracts Payable	( 7,969)
(5) Other Current Liabilities	( 92,041)
(6) Bonds Payable and Other Long-Term Debt	<u>( 1,568,065)</u>
	<u>( 1,668,075)</u>
Fund Balance accounts included in the legal basis:	
(7) Reserve for Collectible Receivables	64,296
(8) Reserve for Inventories	13,338
(9) Reserve for Purchase Commitments	<u>27,876</u>
	<u>105,510</u>
Equity accounts omitted from the legal basis:	
(10) Invested in Capital Assets, Net of Related Debt	( 134,076)
(11) Restricted for Capital Projects	( 79,145)
(12) Restricted for Debt Service	( 158,109)
(13) Restricted for Rate Stabilization	<u>( 128,300)</u>
	<u>( 499,630)</u>
Unrestricted Net Assets – GAAP Basis – 6/30/2004	<u>(\$ 22,915)</u>

### **C. Water Account**

The City has established a City of Philadelphia Water Account to be held exclusively for Water Department purposes, separate and apart from all other funds and accounts of the City, and not to be commingled with the City's Consolidated Cash Account or any other fund or account of the City not held exclusively for Water Department purposes.

The City has covenanted that it will not make temporary loans or advances of Bond proceeds or Project Revenues (even while temporarily held in the City's Consolidated Cash Account) from the Water Account, the Water Sinking Fund, the Water Sinking Fund Reserve or the Water Rate Stabilization Fund to any City account not held exclusively for Water Department purposes. The City has established subaccounts within the Water Account into which deposits and from which disbursements shall be made for operating and capital purposes.

### **D. Pledge of Revenues**

Section 4.02 and 4.04 of The ordinance of 1989, amended 1993, which authorized the issuance of Water and Sewer Revenue Bonds, hereby pledges and assigns to the Fiscal Agent for the security and payment of all Bonds, a lien on and security interest in all Project Revenues and amounts on deposit in or standing to the credit of the: 1) Revenue Fund; 2) Sinking Fund et.al.; 3) Subordinated Bond Fund; 4) Rate Stabilization Fund; 5) Residual Fund; and 6) Construction Fund et. al. The Fiscal Agent shall hold and apply the security interest granted in trust for the Holders of Bonds listed above without preference, priority, or distinction; provided however, that the pledge of this ordinance may also be for the benefit of a Credit Facility and Qualified Swap, or any other person who undertakes to provide moneys for the account of the City for the payment of principal or redemption price and interest on any Series of Bonds (other than Subordinated Bonds), on an equal and ratable basis with Bonds, to the extent provided by any Supplemental Ordinance or Determination.

### **E. Grants from Other Governments for Capital Purposes**

Grants from Federal, State, and other governments are recognized as revenue when grant expenditures have been recorded. Grants are recorded as non-operating revenues.

### **F. Property, Plant and Equipment**

Property, plant and equipment are stated at cost. Where cost could not be developed from the records available, estimated historical cost was used to record the value of the assets. Upon sale or retirement, the cost of the assets and the related accumulated depreciation are removed from the accounts. Maintenance and repair costs are charged to operations.

Capital assets are defined by the City as assets with an initial individual cost of more than \$5,000 and an estimated useful life in excess of three years.

### **G. Depreciation**

Depreciation on fixed assets is provided on the straight-line method over their estimated useful lives as follows:

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

**H. Construction in Progress**

Cost of construction includes all direct contract costs plus overhead charges. Overhead costs include direct and indirect engineering costs and interest incurred during the construction period on projects financed with Revenue Bond proceeds. Interest is capitalized by applying the average financing rate during the year to construction costs incurred. Interest earnings on bond proceeds reduce the amount capitalized. Capitalization of interest during construction for Fiscal Year 2003 was \$6,152,636.

**I. Amortization of Bond Discount**

Bond discounts and issuance costs are deferred and amortized by the bonds outstanding method.

**J. Inventories**

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

**K. Revenues**

All billings rendered to general customers through June 30, 2004 are included in accounts receivable. In addition an amount for services rendered through June 30, 2004, but not billed, has been accrued.

**L. Insurance**

The City, except for the Gas Works, the Airport, and certain other properties, is self-insured for most fire and casualty losses to its structures and equipment and provides statutory worker’s compensation, unemployment benefits, and health and welfare to its employees through a self-insured plan. Construction contractors are required to carry protective general liability insurance indemnifying the City and the Contractor. A reserve for payment of reported worker’s compensation claims and incurred but unreported claims has been recorded in the accompanying financial statements as other Long-Term Obligations.



**M. Investments**

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

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

**N. Deferred Revenues**

Deferred revenues represent funds received in advance of being earned. In the Water Fund, deferred revenues relate principally to overpaid Water and Sewer bills.

**O. Interfund Charges**

In accordance with an agreement between the Finance Director and the Water Department, the Finance Director may transfer to the General Fund up to a limit of \$4,994,000 in any fiscal year in “excess interest earnings” as defined by the Rate Covenants under the Ordinance. In fiscal 2004 no excess interest earnings were transferred to the General Fund of the City.

**3.ACCOUNTS RECEIVABLE**

**Balances consisted of the Following:**

FISCAL YEAR ENDED JUNE 30, 2004

**Accounts Receivable:**

Billed in the Last Twelve Months	\$ 76,495,155
Billed in 15-year Cycle Billing	69,967,795
Penalties on Receivables	37,495,398
Other Receivables	<u>14,446,104</u>

**Total** **\$198,404,452**

Bad Debts Written Off \$ 9,910,280

**ALLOWANCE FOR DOUBTFUL ACCOUNTS:**

Billed in the Last Twelve Months	\$ 0
Billed in 15-year Cycle Billing	64,643,203
Penalties on Receivables	32,686,151
Other Receivables	<u>8,730,670</u>

**TOTAL** **\$106,059,421**

FISCAL YEAR ENDED JUNE 30, 2003

**Accounts Receivable:**

Billed in the Last Twelve Months	\$ 54,469,003
Billed in 15-year Cycle Billing	70,440,596
Penalties on Receivables	36,277,432
Other Receivables	<u>13,332,792</u>

**Total** **\$174,519,823**

Bad Debts Written Off \$ 13,711,256

**ALLOWANCE FOR DOUBTFUL ACCOUNTS:**

Billed in the Last Six Months	\$ 0
Billed in 15-year Cycle Billing	67,132,107
Penalties on Receivables	32,553,153
Other Receivables	<u>9,779,784</u>

**Total** **\$109,465,044**

**4. PROPERTY, PLANT AND EQUIPMENT**

Property, plant and equipment at June 30, 2004 and 2003 consisted of the following:

Fiscal Years Ended	<b>June 30, 2004</b>	<b>June 30, 2003</b>
Land	\$ 5,919,160	\$ 5,919,160
Buildings and related improvements	1,257,398,575	1,211,157,528
Meters and other improvements	77,895,407	77,292,914
Equipment	51,925,618	49,588,747
Transmission and distribution lines	1,614,779,270	1,567,168,643
Construction in progress	<u>123,924,256</u>	<u>114,360,663</u>
Total	\$3,131,842,286	\$3,025,484,654
Less: Accumulated Depreciation	<u>(1,460,933,499)</u>	<u>(1,390,721,354)</u>
<b>Total</b>	<b><u>\$1,670,908,786</u></b>	<b><u>\$1,634,766,300</u></b>

**5. VACATION**

Employees are credited with vacation at rates which vary according to length of service. Vacation may be taken or accumulated up to certain limits until paid upon retirement or termination. Employees' vacation time accrued in Fiscal Year 2004 was \$8,931,233 and in 2003 was \$9,316,974. The expense for vacation pay is recognized in the year earned.

**6. SICK LEAVE**

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

**7. CAPITALIZED LEASES**

Leases consist of \$2,004,492 in photocopier and computer equipment in Fiscal 2004. Capital leases are defined by the Financial Accounting Standard Board in Statement 13, Accounting for Leases.

**8. RATE STABILIZATION FUND**

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

**During Fiscal 2004 the fund had the following activity:**

Balance at July 1, 2003	\$156,140,387
Deposit from Operating Fund	0
Transfer to Operating Fund	(28,779,330)
Interest Earnings	<u>939,256</u>
Balance at June 30, 2004	<u>\$128,300,313</u>

**9. DEFERRED COMPENSATION PLAN**

The City offers its employees a deferred compensation plan in accordance with Internal Revenue Code section 457. As required by the Internal Revenue Code and Pennsylvania laws in effect at June 30, 2004, the assets of the plan are held in trust for the exclusive benefit of the participants and their beneficiaries. In accordance with GASB Statement No. 32, *Accounting and Financial Reporting for Internal Revenue Code Section 457 Deferred Compensation Plans*, the City does not include the assets or activity of the plan in its financial statements.

## 10. ARBITRAGE REBATE

The City has issued Water Revenue Bonds subject to federal arbitrage requirements. Federal tax legislation requires the accumulated net excess of interest income on the proceeds of these issues over interest expense paid on the bonds be paid to the federal government at the end of a five-year period. In Fiscal 2004, \$21,096 was paid. As of June 30, 2004 there was an arbitrage liability of \$30,077.

## 11. DEBT PAYABLE

### Defeased Debt

In prior years, the Water Fund defeased certain bonds by placing the proceeds of new bonds in irrevocable trusts to provide for all future debt service payments on old bonds. Accordingly, the trust account assets and the liability for the defeased bonds are not included in the Water Fund's financial statements. At year end, \$55,135,000 of bonds outstanding are considered defeased.

### Interest Rate Swaption

City of Philadelphia 1993 Water and Sewer Swaption/2003 Water and Sewer Swap  
Objective of swaption: In December 2002, the City entered into a swaption that provided the City with an up-front payment of \$24,989,926. As a synthetic refunding of its 1993 Bonds, this payment represents the present value savings, as of December 2002 of a refunding on March 18, 2003, without issuing refunding bonds as of December 2002. The swaption gave Citigroup formerly Salomon Brothers Holding Company, Inc. the option to enter into an interest rate swap to receive fixed amounts and pay variable amounts. The option was exercised on March 18, 2003 and the City issued variable-rate refunding bonds and started making payments under the terms of the swap.

Terms: Citigroup exercised its option to enter into a swap on March 18, 2003 – the City's 1993 water and sewer bonds' first call date. The swap also commenced on the exercise date of March 18, 2003. Under the swap, the City pays a fixed payment of 4.52% and receives a variable payment computed as the actual bond rate through March 1, 2005 and thereafter computed as the lesser of the actual bond rate or 68.5% of the London Interbank Offered Rate (LIBOR). The swap rate was set at a rate that, based on the swap notional amount and when added to an assumption for remarketing, liquidity costs and cost of issuance will approximate the debt service of the "refunded bonds." The swap has a notional amount of \$376,165,000 and the associated variable-rate bond has a \$376,165,000 principal amount. The bonds' variable-rate coupons are not based on an index but on market conditions. The bonds and the related swap agreement mature on June 15, 2023. As of June 30, 2004 rates were as follows:

	<u>Terms</u>	<u>Rates</u>
Interest Rate Swap		
Fixed payment to Citigroup	Fixed	4.52%
Variable payment from Citigroup	Actual Bond Rate	(1.07%)

Net Interest Rate Swap payments		3.45%
Variable Rate bond coupon payments	Market Driven	1.07%
Synthetic interest rate on bonds		4.52%

Fair Value: As of June 30, 2004, the swap had a negative fair value of \$33,170,630. Since the coupons on the City's variable rate bonds adjust to hanging interest rates, the bonds do not have a corresponding fair value increase. The fair value was estimated using the zero-coupon method. This method calculates the future net settlement payments required by the swap, assuming that the current forward rate implied by the yield curve correctly anticipate future spot interest rates. The payments are then discounted using the spot rates implied by the current yield curve for hypothetical zero-coupon bonds due on the date of each future net settlement of the swap.

Risk: As of June 30, 2004 the City is not exposed to credit risk because the swap had a negative fair value not basis risk since Citigroup's payments are currently based on the actual bond rate paid on the variable-rate bonds. The swap uses the International Swap Dealers Association Master Agreement, which includes standard termination events. The Schedule to the Master Agreement includes an "additional termination event." That is, the swap may be terminated if Citigroup's or its Credit Support Provider, or the City has one or more outstanding issues of rated unsecured, unenhanced senior debt and none of such issues has a rating of at least (i) Baa3 or higher as determined by Moody's Investors Service, Inc., or (ii) BBB- or higher as determined by Standard & Poor's Ratings Service, A Division of the McGraw-Hill Companies, Inc. Or (iii) an equivalent investment grade rating determined by a nationally- recognized rating service acceptable to both parties.

Swap payments and associated debt: As of June 30, 2004, debt service requirements of the variable-rate debt and net swap payments for their term, assuming current interest rates remain the same, were as follows. As rates vary, variable rate bond interest payments and net swap payments will vary.

Fiscal Year Ending <u>June 30</u>	Variable Rate Bonds		Interest Rate	<u>Total Interest</u>
	<u>Principal</u>	<u>Interest</u>	<u>Swaps Net</u>	
(amounts in thousands)				
06/15/2005	\$ 950	\$ 4,015	\$ 12,946	\$ 16,962
06/15/2006	995	4,005	12,914	16,919
06/15/2007	1,045	3,994	12,879	16,874
06/15/2008	1,095	3,994	12,843	16,838
06/15/2009	1,145	3,972	12,806	16,777
06/15/2010	1,205	3,959	12,766	16,725
06/15/2011	1,260	3,946	12,724	16,671
06/15/2012	41,195	3,944	12,681	16,625
06/15/2013	41,205	3,492	11,260	14,752
06/15/2014	45,305	3,030	9,769	12,799
06/15/2015	47,515	2,545	8,206	10,751
06/15/2016	98,280	2,042	6,567	8,609
06/15/2017	11,280	895	3,176	4,161
06/15/2018	11,830	864	2,787	3,651
06/15/2019	12,410	738	2,379	3,117
06/15/2020	13,140	607	1,951	2,557
06/15/2021	13,780	464	1,497	1,962
06/15/2022	14,460	317	1,022	1,339
06/15/2023	15,165	162	523	685

### **City of Philadelphia, 1995 Water & Sewer Swaption**

Objective of Swaption: In December, 2002, the City entered into a swaption that provided the City with an up-front payment of \$4,000,000. As a synthetic refunding of its 1995 Bonds, this payment represents the present value savings, as of December 2002, of a refunding on May 4, 2005, without issuing refunding bonds as of December, 2002. The swaption gives Citigroup formerly of Salomon Brothers Holding Company, Inc., the option to enter into an interest rate swap to receive fixed amounts and pay variable amounts. If the option is exercised, the City would then expect to issue variable-rate refunding bonds.

Terms: Citigroup has the option to exercise the agreement on May 4, 2005 – the City’s 1995 water and sewer bonds’ first call date. If the swap is exercised, the swap will also commence on May 4, 2005 and would have a notional amount of \$86,105,000. Under the swap, the City pays a fixed payment of 4.53% and receives a variable payment computed as the lesser of the actual bond rate or 68.5% of the London Interbank Offered Rate (LIBOR) which were set at rates that were based on the swap notional amount and when added to an assumption for remarketing, liquidity costs and cost of issuance will approximate the debt service of the “refunded bonds.”

Fair value: As of June 30, 2004, the swaption had a negative fair value of \$5,700,138. Its fair value was estimated using the BDT option pricing model. This model takes into consideration probabilities, volatilities, time and underlying prices.

Market access risk and interest rate risk: If the option is exercised and the refunding bonds can not be issued, the 1995 water and sewer bonds would not be refunded and the City would either have to unwind the swap and pay a termination payment or the City would make net swap payments as required by the terms of the Agreement. If the option is exercised and variable-rate bonds issued, the actual savings ultimately recognized by the transaction will be affected by the relationship between the interest rates terms of the to-be-issued variable rate bonds versus the variable payments on the swap (the lesser of the actual bond rate of 68.5% of the London Interbank Offered Rate (LIBOR).

## **12. PENSION PLAN**

The City, via the Municipal Pension Plan, maintains the following employee retirement system:

### **(1) City Plan**

#### **(a) Plan Description**

The Philadelphia Home Rule charter (the Charter) mandates that the City maintains an actuarially sound pension and retirement system. To satisfy that mandate, the City's Board of Pensions and Retirement maintains the single-employer Municipal Pension Plan (the Plan). The Plan covers all officers and employees of the City and officers and employees of five other governmental and quasi-governmental organizations. By authority of two Ordinances and related amendments passed by City Council, the Plan provides retirement benefits as well as death and disability benefits. Benefits vary by the class of employee. The Plan has two major classes of members – those covered under the 1967 Plan and those covered under the 1987 Plan. Both of these two plans have multiple divisions.

#### **Retirement Benefits**

An employee who meets the age and service requirements of the particular division in which he participates is entitled to an annual benefit, payable monthly for life, equal to the employee's average final compensation multiplied by a percentage that is determined by the employee's years of credited service. The formula for determining the percentage is different for each division. If fund earnings exceed the actuarial assumed rate by a sufficient amount, an enhanced benefit distribution to retirees, their beneficiaries, and their survivors shall be considered. A deferred vested benefit is available to an employee who has 10 years of credited service, has not withdrawn contributions to the system and has attained the appropriate service retirement age. Members of both plans may opt for early retirement with a reduced benefit. The **Deferred Retirement Option Plan (DROP)** was initiated on October 1, 1999. Under this plan, employees that reach retirement age may accumulate their monthly service retirement benefit in an interest bearing account at the Board of Pensions for up to four (4) years and continue to be employed by the City of Philadelphia.

**Death Benefits**

If an employee dies from the performance of duties, his/her spouse, children or dependent parents may be eligible for an annual benefit ranging from 15% to 80% of the employees final average compensation. Depending on age and years of service, the beneficiary of an employee who dies other than from the performance of duties will be eligible for either a lump sum benefit only or a choice between a lump sum or an annual pension.

**Disability Benefits**

Employees disabled during the performance of duties are eligible for an immediate benefit equal to contributions plus a yearly benefit. If the employee subsequently becomes employed, the benefit is reduced by a percentage of the amount earned. Certain employees who are disabled other than during the performance of duties are eligible for an ordinary disability payment if they apply for the benefit within one year of termination. If the employee subsequently becomes employed, the benefit is reduced by a percentage of the amount earned.

**Membership**

Membership in the plan as of July 1, 2003 was as follows:

Employee Group	Number
Retirees and beneficiaries currently receiving benefits	31,252
Terminated members entitled to benefits but not yet receiving them	730
Active members	<u>32,127</u>
<b>Total Members</b>	<b><u>64,109</u></b>

The Municipal Pension fund issues a separate annual financial report. To obtain a copy, contact the Director of Finance of the City of Philadelphia.

**(b) Funding Policy**

Employee contributions are required by City Ordinance. For Plan 67 members, employees contribute 3 ¾% of their total compensation that is subject to Social Security Tax and 6% of compensation not subject to Social Security Tax. Plan 87 contribution rates are defined for the membership as a whole by Council ordinance. Rates for individuals are then determined annually by the actuary so that total individual contributions satisfy the overall rate set by Council.

The City is required to contribute the remaining amounts necessary to fund the Plan, using an acceptable actuarial basis as specified by the Home Rule Charter, City Ordinance and State Statute. Court decisions require that the City’s annual employer contributions are sufficient to fund:

- The accrued actuarially determined normal costs;



- Amortization of the unfunded actuarial accrued liability determined as of July 1, 1985. The portion of that liability attributable to a class action lawsuit by pension fund beneficiaries (the Dombrowski suit) is amortized in level installments, including interest, over 40 years through June 30, 2009. The remainder of the liability is amortized over 34 years with increasing payments expected to be level as a percentage of each year's aggregate payroll;
- Amortization in level dollar payments of the changes to the July 1, 1985 liability due to the following causes over the stated period:
  - Non-active member's benefit modifications (10 years)
  - Experience gains and losses (15 years)
  - Changes in actuarial assumptions (20 years)
  - Active members' benefit modifications (20 years)

Under the City's current funding policy, the total required employer contribution for the current year amounted to \$253.8 million or 20 % of covered payroll of \$1,250.1 million.

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

**Annual Pension Cost and Net Pension Obligation**

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

Annual Required Contribution (ARC)	253,844
Interest on Net Pension Obligation (NPO)	(98,392)
Adjustment to ARC	135,638
Annual Pension Cost	291,090
Contributions Made	<u>202,827</u>
Increase in NPO	88,263
NPO at beginning of year	(1,093,243)
NPO at end of year	(1,004,980)
Interest Rate	9.00 %
15 Year amortization Factor (EOY)	8.06 %

The actuarial valuation that was used to compute the current year's required contribution was performed as of July 1, 2002. Methods and assumptions used for that valuation include:

- The individual entry age actuarial cost method
- A five-year smoothed market value method for valuing investments
- A level percentage closed method for amortizing the unfunded liability
- An annual investment rate of return of 9%
- Projected annual salary increases of 5% (including inflation)
- Annual inflation of 3.5%
- No post-retirement benefit increases

Under the City's funding policy, the recommended contribution for the City for the current year amounted to \$247.6 million. The City's actual contribution was \$196.6 million. The City's contribution did meet the Minimum Municipal Obligation (MMO) as required by the Commonwealth of Pennsylvania's Acts 205 and 189. However, the contribution was made after December 31, 2003, so the City was required to include 9% interest on the payment.

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

Fiscal Year Ended June 30	Required Contribution (In Millions)	Annual Percentage Contributed	Net Pension Obligation (In Millions)
2002	\$218.7	81.49%	(\$1,148.1)
2003	234.6	76.61%	(\$1,093.2)
2004	291.1	69.68%	(\$1,005.0)

**(c) Summary of Significant Accounting Policies**

Financial statements of the Plan are prepared using the accrual basis of accounting. Contributions of employees and employers are recognized as revenues in the period in which employee services are performed. Benefits and refunds paid are recognized when due and payable in accordance with the terms of the plan. Investments are valued as described in Footnote M.

**13. POST EMPLOYMENT BENEFITS**

In addition to providing pension benefits, the City provides certain post employment health care and life insurance benefits for retired employees, dependents and/or beneficiaries through provisions of City ordinances, civil service regulations and agreements with its various employee bargaining units. The City provides these benefits from one to five years after retirement depending upon the classification of the employee at his or her retirement. Substantially all of the City's employees may become eligible for those benefits if they reach normal retirement age while working for the City. These and similar benefits for active employees are provided through a combination of a self-

insurance program and insurance companies whose premiums are based on the benefits paid during the year. The cost of providing these health benefits and life insurance for approximately 3,401 eligible retirees amounted to \$25.2 million and \$3.8 million respectively.

#### **14. CLAIMS, LITIGATION AND CONTINGENCIES**

Generally, claims against the City are payable out of the General Fund, except claims against the City Water Department, City Aviation Division, or Component Units which are paid out of their respective funds and only secondarily out of the General Fund which is then reimbursed for the expenditure. Unless specifically noted otherwise, all claims hereinafter discussed are payable out of the Water Fund. The Act of October 5, 1980, P.L. 693, No. 142, known as the "Political Subdivision Tort Claims Act," established a \$500,000 aggregate limitation on damages arising from the same cause of action 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 has been upheld by the United States Supreme Court. There is no such limitation under federal law.

Various claims have been asserted against the Water Department and in some cases lawsuits have been instituted. Many of these claims are reduced to judgment or otherwise settled in a manner requiring payment by the Water Department. At year-end, the aggregate estimate of loss deemed to be **probable** is \$1.3 million.

In addition to the above, there are other lawsuits against the Water Department in which some amount of loss is reasonably **possible**. The aggregate estimate of the loss, which could result if unfavorable legal determinations were rendered against the Water Department with respect to these lawsuits, is \$2.8 million.

#### **15. ENHANCED SECURITY**

In light of the events of September 11, 2002, when terrorists struck the United States, the Water Department has taken steps to improve the security of the City's water supply and all other major Water Department facilities and assets. These steps have been taken in close coordination with the City's Managing Director's Office and all other appropriate city agencies and departments. On October 11, 2002, the City of Philadelphia reopened the Emergency Operations Center, designed to permit city emergency personnel to respond quickly to any major event through specialized computer and communications equipment. This center is staffed around the clock by officials from the Police, Fire, and Health Departments, as well as the Water Department and additional city agencies. The Center has a backup 911 system, in addition to computer terminals that are able to communicate with all City enforcement and emergency personnel. Details of the enhanced security measures already taken and those presently under consideration cannot be presently disclosed.

It should be noted that the Water Department had an extensive water quality protection and security plan in place prior to the events of September 11, 2002. All finished water basins are completely covered; all plants are fenced in and topped by barbed wire; gates are secured; and the water Department continues to draw and conduct nearly one thousand tests on water samples from various locations each day.

**APPENDIX II**  
**ENGINEERING REPORT**

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**Engineering Report**  
**FINAL**

**Water and Wastewater**  
**Revenue Bonds, Series 2005A**

**Water and Wastewater Revenue**  
**Refunding Bonds, Variable Rate Series**  
**2005B**

**Water Department**  
**Philadelphia, Pennsylvania**

**April 2005**



**BLACK & VEATCH**  
Corporation



# BLACK & VEATCH

Curtis Center  
601 Walnut  
Suite 550 West  
Philadelphia, PA 19106  
Tel: 215-928-0700

Black & Veatch Corporation

April 8, 2005

Mr. Vincent J. Jannetti  
Acting Director of Finance  
City of Philadelphia  
1401 John F. Kennedy Boulevard  
Room 1330, Municipal Services Building  
Philadelphia, PA 19102-1693

Dear Mr. Jannetti:

In accordance with the requirements of The First Class City Revenue Bond Act (the Act), the Restated General Water and Wastewater Revenue Bond Ordinance of 1989, and the amendments thereto as set forth in the First, Second, Third, Fourth, Fifth, Sixth, Seventh, Eighth, and Ninth Supplemental Ordinances (collectively, with the Restated General Water and Wastewater Revenue Bond Ordinance of 1989, the "General Ordinance"), we are submitting herewith our Engineering Report prepared in connection with the issuance of \$250,000,000 aggregate principal amount of Water and Wastewater Revenue Bonds, Series 2005A and the issuance of \$86,105,000 aggregate principal amount of Water and Wastewater Revenue Refunding Bonds, Variable Rate Series 2005B (collectively, the "Bonds"). This report summarizes findings of engineering and financial studies related to the Water and Wastewater Systems of the City. We have made such investigation and review of the books, records, capital improvement programs, and the water and wastewater facilities of the Water Department and such other investigations as we deemed necessary. Unless otherwise indicated, capitalized terms used but not defined herein shall have the same meanings assigned to such terms in the General Ordinance.

Projections of revenues and revenue requirements for the Water Department for the six-year period of fiscal years 2005 through 2010 are shown in this report. In the preparation of this report, we conducted on-site inspections of the major water and wastewater facilities and conducted personal interviews of key Water Department operating, engineering, and financial staff in February 2005. The general physical condition of the Water and Wastewater Systems has been evaluated using three rating categories – good, adequate, and poor – as described below.

- *Good:* The facility is in condition to provide reliable operation in accordance with design parameters and requires only routine maintenance or minor improvements.



April 8, 2005

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

In conducting our analyses and in forming an opinion of the projection of future operations summarized in this report, Black & Veatch Corporation (Black & Veatch) has made certain assumptions with respect to conditions, events, and circumstances that may occur in the future. The methodology utilized by Black & Veatch in performing the analyses follows generally accepted practices for such projections. Such assumption 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 the projection methodology valid, actual results may differ materially from those projected, as influenced by the conditions, events, and circumstances that actually occur.

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

1. Based on onsite physical inspections and investigations of major system facilities, conducted in February 2005, combined with discussions with Water Department staff, it is our opinion that the Water and Wastewater Systems are in good operating condition or adequate steps are being taken to return them to good operating condition. The proposed six-year capital program will provide the funds necessary to achieve this goal.
2. Proceeds from the Series 2005A Bonds are to be used to finance major portions of the Water Department's capital improvement program for fiscal year 2005 through fiscal year 2010. Proceeds from the Series 2005B Bonds are to be used to refund a portion (the Term Bonds maturing August 1, 2014 and August 1, 2018) of the City's outstanding Water and Wastewater Revenue Bonds, Series 1995
3. Project Revenues pledged to secure the Bonds are to be derived from the following sources: all rents, rates, fees, and charges imposed or charged for the connection to, or use or product of or services generated by the Water and Wastewater Systems to the ultimate users or customers thereof, all payments under bulk contracts with municipalities, governmental instrumentalities or other bulk users, all subsidies or payments payable by Federal, State, or local governments or governmental agencies on account of the cost of operation of, or the payment of the principal of or interest on moneys borrowed to finance costs chargeable to the Water and Wastewater Systems, all grants, payments, and contributions made in aid or on account of the Water and Wastewater Systems exclusive of grants and similar payments and contributions solely in aid of construction and all accounts, contract rights, and general intangibles representing the foregoing.

April 8, 2005

4. Based on actual and estimated future annual financial operations of the Water and Wastewater Systems, it is our opinion that the Water and Wastewater Systems will yield pledged Project Revenues (including projected revenue increases indicated in this report resulting from rate increases, which may be imposed after an administrative process of the Water Department without requiring further legislative action by City Council) over the amortization period of the Bonds sufficient to meet the payment or deposit requirements of:
  - a. All expenses of operation, maintenance, repair and replacement of the Water and Wastewater Systems;
  - b. All reserve funds required to be established out of such Project Revenues;
  - c. The principal or redemption price of and interest on all Existing Bonds and all Bonds issued under the General Ordinance, as the same become due and payable, for which such Project Revenues are pledged; and
  - d. The Rate Covenants set forth in Section 5.01 of the General Ordinance.

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

5. The Net Revenues are currently sufficient to comply with the Rate Covenant and are projected to be sufficient (including projected revenue increases indicated in the report resulting from rate increases which may be imposed as described above) to comply with the Rate Covenant for each of the two Fiscal Years following the Fiscal Year in which the Bonds are issued.
6. In our opinion water and wastewater rents, rates and charges, including projected increases, are within generally acceptable ranges for such services and are collectible.

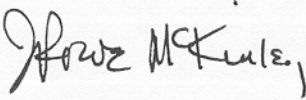
In accordance with the Water Department's agreements with Financial Guaranty Insurance Company (FGIC) and Financial Security Assurance, Inc. (FSA), rates and charges for use by the Water and Wastewater Systems shall be sufficient to yield Net Revenues (excluding amounts transferred from the Rate Stabilization Fund into the Revenue Fund during, or as of the end of, such fiscal year) at least equal to 90 percent of the Debt Service Requirements (excluding debt service due on any Subordinated Bonds) in such fiscal year. Further, any calculation by a consulting engineer of projected rate covenant compliance in connection with the proposed issuance of additional Bonds for each fiscal year ending on or after June 30, 2000, must state that

April 8, 2005

Net Revenues (excluding amounts transferred from the Rate Stabilization Fund into the Revenue Fund during, or as of the end of, such fiscal year) in each fiscal year included in the projection period are projected to be at least 90 percent of the Debt Service Requirements (excluding debt service due on any Subordinated Bonds) in such fiscal year. The levels of additional service revenue projected for the study period will provide for the debt service coverage and requirements of the FGIC and FSA agreements.

Very truly yours,

BLACK & VEATCH CORPORATION

A rectangular box containing a handwritten signature in black ink. The signature is written in a cursive style and appears to read "J. Rowe McKinley".

J. Rowe McKinley  
Director

Enclosure

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## **I. Introduction**

### **A. Purpose**

The purpose of this report is to summarize findings of engineering studies performed by Black & Veatch related to the water and wastewater systems of the City of Philadelphia. The Restated General Water and Wastewater Revenue Bond Ordinance of 1989 and the amendments thereto as set forth in the First, Second, Third, Fourth, Fifth, Sixth, Seventh, Eighth, and Ninth Supplemental Ordinances (collectively the “General Ordinance”) require the preparation of such an Engineering Report as a condition to be met prior to the issuance of bonds under the General Ordinance.

In the preparation of this report, we performed site visits of major water and wastewater facilities and conducted personal interviews with key Water Department operating, engineering, and financial staff during the month of February 2005. Such interviews included discussion of significant events, changes in operations, regulatory compliance, updates to the capital improvement program, and financial impacts that the Water Department has experienced since the completion of our last engineering report dated March 20, 2003.

### **B. Scope**

This report addresses the organization and management, physical condition, adequacy of system capacity, operation and maintenance practices, and staffing levels of the water and wastewater systems. It provides a review of the proposed capital improvement program of the Water Department. The report also includes the results of studies regarding the financial requirements of the water and wastewater systems, which are based on a review of the Water Department's books, records, and other information. Projections of revenues and revenue requirements of the water and wastewater systems for the period of fiscal years 2005 through 2010 are shown.

This report has been prepared in order to determine the feasibility of issuance of the Water and Wastewater Revenue Bonds, Series 2005A and Water and Wastewater Revenue Refunding Bonds, Variable Rate Series 2005B (collectively, the “Bonds”). Net bond proceeds of the Series 2005A Bonds, along with other sources of capital funds, are to be used to finance the Water Department's capital improvement program. Proceeds from the Series 2005B Bonds are to be used to refund a portion of the City's outstanding Water and Wastewater Revenue

Bonds, Series 1995. The financial feasibility of issuance of the Bonds is determined under the stipulations of the General Ordinance.

### **C. Black & Veatch Qualifications**

Black & Veatch is one of the largest and most experienced engineering firms in the United States specializing in utility engineering. Experience includes the planning, design, operation analysis, and construction of water and wastewater systems. In addition, the firm has extensive experience in assisting utilities with management and financial aspects of their operations. The firm has been engaged in more than 35,000 projects for over 6,200 clients, including utilities owned by municipalities ranging in size from small villages to large metropolitan regions, investor-owned utilities, industrial and commercial businesses, and agencies of the United States Government.

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

In performing our engineering assessment of the Water Department, Black & Veatch reviewed the current condition and operation and maintenance of the water and wastewater systems. We conducted inspections of the Water Department's major water and wastewater facilities in February 2005, including the three wastewater treatment plants, the three water treatment plants, and the Biosolids Recycling Center (BRC). As a result of our facility inspections, we find the overall condition of these facilities to be good. This indicates that the facilities are in a condition to provide reliable operation in accordance with design parameters and require only routine maintenance or minor capital improvements. We also met with Water Department staff to discuss other facilities such as; Torredale Raw Water Pumping Station; Torredale and Lardners Point Finished Water Pumping Stations; Oak Lane Distribution System Reservoir; Load Control Center; the Central Schuylkill Wastewater Pumping Station; the Bureau of Laboratory Services; and, the Collection System Field Headquarters. Staff interviewed during our studies included representative from each of the six various divisions of the Water

Department: Finance and Administration; Operations; Planning and Engineering; Public Affairs,; Human Resources; and, Information, Science and Technology.

The financial feasibility review has been performed by professionals from Black & Veatch's Enterprise Management Solutions Division of Black & Veatch which provides services in such areas as utility rate studies, property valuation, depreciation rate studies, financial analysis and planning, nonaudit accounting, management and operations analysis, and the preparation of consulting engineering reports for official statements. Having performed various financial studies for the City of Philadelphia Water Department on a continuous basis since 1972, including the preparation of the engineering reports for the Water and Sewer Revenue Bonds, issued under the General Water and Sewer Revenue Bond Ordinance of 1974, as amended and supplemented, and the Water and Wastewater Revenue Bonds, Series 1993, 1995, 1997A, 1997B, 1998 and 1999, 2001, 2003 issued under the General Ordinance, personnel of the Division are quite familiar with the Water Department's financial affairs as they relate to revenues, expenses, rates, and other financing matters. Enterprise Professionals from this Division are also involved in the water and wastewater rate hearings which are currently ongoing. As a result of these rate hearings, schedules of water and wastewater rates for retail service have been approved for fiscal year 2005 and are in place. An initial series of proposed rate increases were filed in January 2004 for fiscal years 2005-2008. Delays in the initiation of the rate hearing process required a bifurcation or separation of the hearing process. An initial increase of approximately 13 percent was granted effective February 1, 2005 for the remainder of the fiscal year 2005. Rate increases for 2006-2008 are currently undergoing the second phase of the hearing process. Implementation of the Fiscal 2006 rates is expected by July 1, 2005.

## **II. Organization and Management**

### **A. Overview**

The water and wastewater systems serving the City of Philadelphia are owned by the City and are operated as a self-supporting utility by the Water Department established by the Philadelphia Home Rule Charter, approved April 17, 1951. The Water Department is responsible for the planning, construction, operation, and maintenance of the two systems; rate setting; budgeting and detailed cost accounting; and preparation of financial statements for the water and wastewater systems. The Finance Department, through the Water Revenue Bureau, is presently responsible for customer meter reading, billing, collection, and customer accounting for the water and wastewater systems. The data from the Water Department's annual statements are included in the City's annual report. The audit function for the City is the responsibility of the Office of City Controller. Other services are provided to the Water Department by other City departments. Legal matters affecting the Water Department are the responsibility of the City Solicitor's office, although the Water Department does have a Divisional Deputy City Solicitor assigned directly to the Water Department.

The Water Department has continued implementing its vision and strategic plan that focus on increasing the operational efficiency of the water and wastewater systems and providing satisfactory service to its customers. The results of this strategy have allowed the Water Department to achieve significant productivity gains and positive reports from its customers. In administering this strategy, a monthly performance measurement system, called the Monthly Manager's Report, is utilized. This report enables managers to receive up-to-date feedback on the performance of their units relative to strategic plan goals and objectives.

The Water Department senior management positions are staffed with highly qualified and trained personnel, that collectively possess an average of 25 years of experience. However, as of fiscal year 2004, some senior staff will be eligible for retirement through the Deferred Retirement Option Plan (DROP) created by the City in 1999 for eligible employees working in all City departments. Through fiscal year 2007, approximately 175 Water Department staff will be leaving as a result of the DROP program.

While succession planning is difficult within a civil service structured organization such as the City's, the Water Department is preparing for these retirements by reviewing personnel needs at the section and unit level. During our interviews, Water Department managers indicated that a strong and experienced core of technical and mid-level managers currently exist within the ranks to ably fill positions which will be vacated as a result of the DROP program.

The Water Department is also conducting a review of its organizational structure and is actively considering consolidating and streamlining positions and units to better focus organizational inter-relationships and accountability, as they have evolved through the present day in the execution of the Water Department's mission. Eighty seven employees retired in fiscal 2004 that were registered in the DROP program.

The Water Department has continued to focus on filling unfilled positions. However, since September 2002, in an effort to address its overall General Fund revenue shortfalls, the City's administration instituted a hiring freeze across all City departments. During this period, the Water Department has maintained its facility and infrastructure systems at the appropriate level of service through instituting overtime work and outsourcing. Although this has not caused any problems to date, the Water Department has been carefully reviewing its maintenance records and the impact of potential equipment and/or system failure on its operations and performance. As a result, the Water Department submitted a waiver justification to the City administration in February 2003, requesting release from the hiring freeze. As of the date of the report, the release has not been granted. However, the Department has been able to make additions to staff on a case by case basis.

The Water Department is headed by the Water Commissioner who is appointed by the City's Managing Director with approval of the Mayor. The Commissioner is assisted in management of the Water Department by three Deputy Water Commissioners. The Water Department is currently organized into six divisions: (1) Operations, (2) Planning and Engineering, (3) Finance, (4) Human Resources, (5) Public Affairs, and (6) Information Science and Technology. There is also an Office of Environmental Policy and Planning. Each division is divided into units and subunits responsible for carrying out specific functions. An Organization Chart of the Water Department is shown on the following page.

As of January 2005, the Water Department had a total of approximately 2039 employees. Of these, 1547 are represented by District Council 33, and 258 are represented by District Council 47 of the American Federation of State, County, and Municipal Employees Union. The 234 upper management, supervisory, and senior engineering personnel are not eligible for union membership. In addition there are 205 employees in the Water Revenue Bureau whose positions are funded by the Water Department. Present labor agreements became effective July 1, 2004 and expire June 30, 2008.

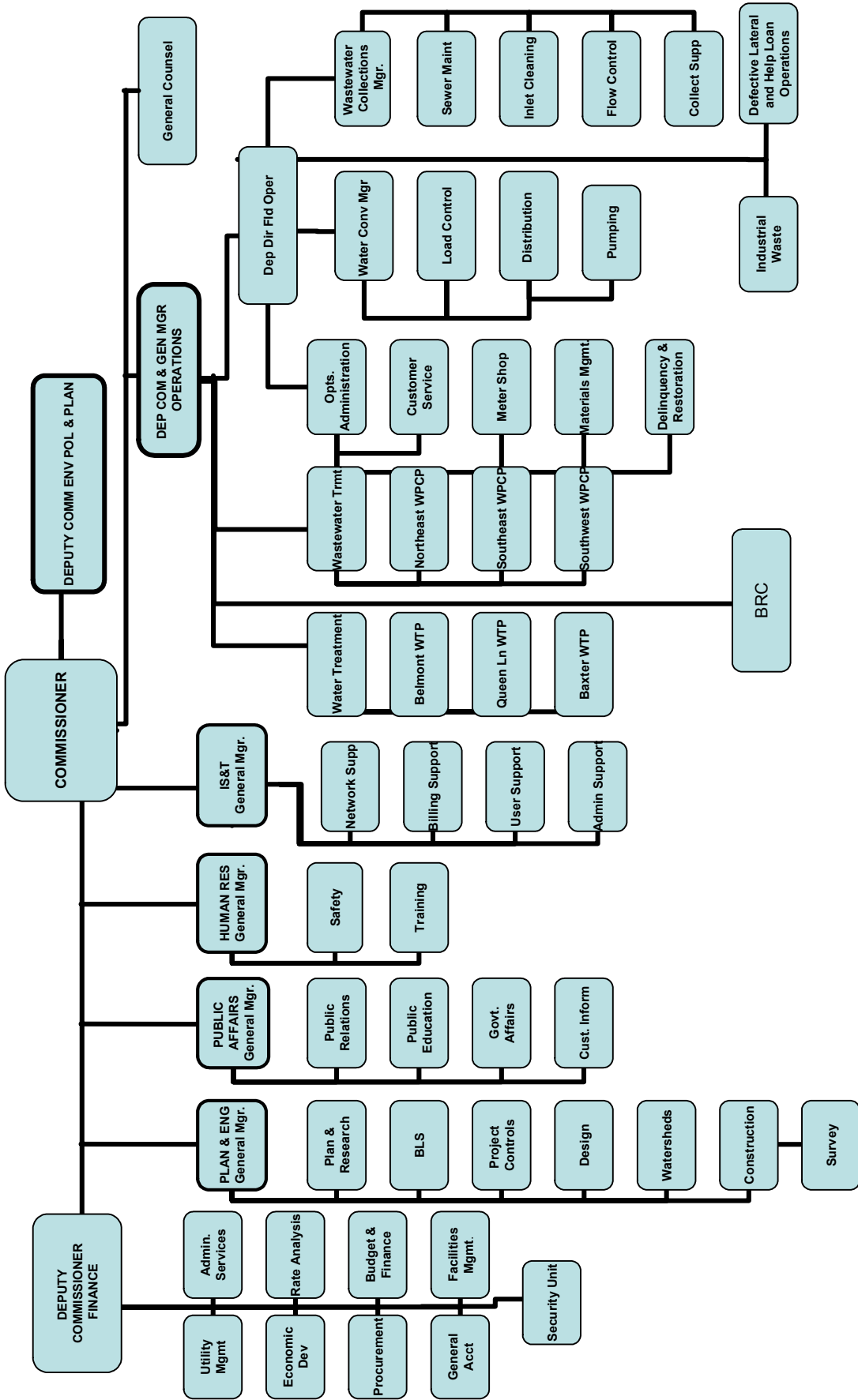


Figure 1 – Organization Chart

Increasingly over the years, and particularly noticeable over the past four years, Water Department management initiatives are being successfully implemented by staff. Better communications and collaborative efforts by both management and staff have resulted in focused efforts at cost cutting strategies and increased productivity. In 2004, the Association of Metropolitan Water Agencies (AMWA) presented the Water Department with a Competitiveness Achievement Award, in recognition of implementing high quality practices and meeting the competitive challenges facing the water and wastewater industry today. These practices are allowing the Department to meet its goals of environmental stewardship and to expand its customer service record with a sound cost-effective financial course. The Water Department continues to find ways to increase revenues while cutting costs. For example, the Water Department continues to control overtime while reducing staff at the Biosolids Recycling Center and its three wastewater treatment plants.

The Water Department has always maintained security at their facilities using hardware and a uniformed security force that inspects remote unmanned facilities daily and on a random 24-hour basis. However, the events of September 11, 2001, have identified the need to improve its existing security systems. Prior to September 11, 2001, the Water Department had begun implementing additional monitoring and controls at its wastewater treatment plants, Biosolids Recycling Center and its remote facilities. Since that date there has been continued efforts to complete the implementation of these systems and other security measures to "harden" all facilities. For example, the Water Department has increased the size of its uniformed security force, prepared vulnerability assessments, limited access of personal vehicles on plant property, is implementing a new access ID card system at its water system facilities, similar to one that already exists at the wastewater facilities, and is implementing a new chemical delivery security system, and is in the process of eliminating the use of chlorine gas at their treatment facilities.

The Public Health Security and Bioterrorism Preparedness and Response Act of 2002, requires drinking water systems to undertake a more comprehensive view of water safety and security. The Act amends the Safe Drinking Water Act and specifies actions water systems must take to improve the security of their drinking water infrastructure. The Act requires the Water Department to:

1. Conduct a vulnerability assessment to evaluate the system's susceptibility to potential threats and identify and prioritize corrective actions that can reduce or mitigate the risk of serious consequences from adversarial actions, including vandalism, insider sabotage, and terrorist attack, for the transmission, treatment, and distribution systems;
2. Certify and submit a copy of the assessment to the US Environmental Protection Agency (EPA) Administrator by March 31, 2003;



3. Revise their emergency response plan to incorporate the results of the vulnerability assessment; and
4. Certify to the EPA Administrator by September 30, 2003, that the system has updated their emergency response plan.

The Water Department received a \$115,000 grant from EPA to partially fund their cost of conducting the Vulnerability Assessment, and retained a qualified consultant to perform the work. The Consultant has completed their assessment and submitted their report, which was submitted to the EPA Administrator by March 31, 2003 as required.

The Water Department has begun to implement operational recommendations in the Vulnerability Assessment report, and budget for any Capital Improvements required to upgrade the facilities to meet the recommended upgrades or improvements.

The Capital Facilities Assessment Program (CFAP) was designed by the Water Department to provide for periodic assessment of major infrastructure. The CFAP will be implemented at all water and wastewater treatment plants, the Biosolids Recycling Center, and pumping facilities. The CFAP pilot study, implemented at the Southeast Water Pollution Control Facility, the Queen Lane Water Treatment Plant, and the Lardner's Point Water Pumping Station is now complete. CFAP planning at these three facilities involved inventorying the assets, initial physical condition inspections, and the development of site-specific CFAP plans. The site-specific CFAP plan contains a re-inspection plan to be carried out over a ten-year period. The results from these re-inspections will document the condition history of the assets and will be used in the capital planning process. Operations Division personnel, including representatives from each of the plants have been trained to perform the inspections. Staff has also received training in American Society of Civil Engineering (ASCE) testing methods to carry out inspection of concrete structures.

## **B. Operations Division**

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

- The public drinking water must be safe and comply with both the Safe Drinking Water Act (SDWA) regulations of the EPA and state

requirements by the Pennsylvania Department of Environmental Protection (PaDEP).

- The effluents from the wastewater treatment plants discharged to the Delaware River must meet the limits set forth in the plants' National Pollutant Discharge Elimination System (NPDES) permits.
- The water and wastewater treatment plants, the sewerage and water conveyance systems and the pumping facilities must be maintained and operated in an acceptable manner that assures cost-effective and continuous performance with minimal adverse impacts to the public and the environment.
- Sewage sludge and other residuals must be properly treated, disposed of and distributed in accordance with Water Department policy and governing federal and state regulations.

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

The Operations Division's current organizational structure includes a Deputy Commissioner of Operations, who reports to the Water Commissioner. Operating Units in this division include:

- (1) Water Treatment
- (2) Waste Water Treatment
- (3) Biosolids Recycling
- (4) Water Conveyance
- (5) Collection
- (6) Industrial Waste.

This division, responsible for the day-to-day operations and maintenance of the water and wastewater systems, relies on the support of the other five divisions to accomplish its mission and, maintains an especially close relationship with the Planning and Engineering Division in the following areas:

- Undertaking long-range planning and engineering.
- Coordinating regulatory agency requirements.
- Producing analytical results required to demonstrate permit and regulatory compliance.
- Preparing construction documents and coordinating design consultants.
- Coordinating construction projects.
- Establishing capital budgets and maintaining the current capital improvement program.

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

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

In order to provide for more effective decision making ability, the Operations Division has implemented procedures focused on identifying all capital improvements and replacement/rehabilitation project needs at each of its major facilities. The projects are identified on a master list by facility and projected for a six-year capital planning period. The projects are prioritized in order of importance and are current through regular review and communication. The project listing provides the Operations Division with a comprehensive budget program enabling it to maintain continuity of service while tracking corresponding budget requirements.

The management of the Operations Division and the Planning and Engineering Division has responded capably to the needs of the water and wastewater systems and are well positioned to meet projected needs in the coming years. Key management personnel have qualifications and experience commensurate with their responsibilities which enables them to deliver reliable, cost-effective water and wastewater services to the system's users.

The Operations Division has attracted a strong technical staff to supervise its operations and maintenance program. Similarly, the Planning and Engineering Division is also staffed by highly skilled scientists, engineers, planners, and technicians. We believe the Operations Division is adequately staffed to meet current system requirements.

The Water Department is successfully implementing the terms agreed to by the Water Department's management and its labor unions. This increased partnership has allowed the Operations Division to put additional controls on overtime, which previously has not been effectively managed in some parts of the Division's operations. Progress continues to be made in achieving compliance with budgetary levels of overtime, and it is anticipated that appropriate levels of overtime will continue to be maintained by the Water Department in the future. Overall, the new labor union contract has allowed the Water Department to build upon its operations and maintenance accomplishments to date and to provide services more cost-effectively. The current labor union contract is effective through June 30, 2008.

The Water Department has also benefited from changes to the original procurement rules adopted with the City Charter in 1951. The City Charter required that any purchase costing more than \$2,000 would trigger a complex and lengthy competitive bidding process, finally resulting in a formal contract between the City and the successful bidder. The \$2,000 threshold was not adjusted for inflation for more than 40 years until the Charter was amended to raise the threshold to \$10,000 on November 5, 1991. The amendment also contained an adjustment for inflation which would be implemented every five fiscal years. The current threshold, as of February 2005, is \$25,000.

The Procurement Department has divested itself of administering the below threshold purchases for most City departments, including the Water Department. With the assistance of the Water Department's Procurement Specialist, headquartered in the Finance Division, the Water Department's operating units have used the new system with great success, thus greatly reducing the time it takes to procure and receive many materials and supplies.

The new process still requires competitive bidding and notification of vendors, but it does not require newspaper advertisement, certified checks, or performance bonds. The award does not result in a formal contract which must be drafted and approved by the City Solicitor's Office, as do contracts over the \$25,000 threshold. These changes, along with increased automation of the procurement process, have aided the operating units of the Water Department to meet their operational goals by eliminating undue delays in the procurement process.

## **C. Planning and Engineering Division**

The Planning and Engineering Division is organized into six specialty related sections designed to support the needs of the Water Department. A description of the sections are provided below:

- (1) Planning and Research Section - This group provides services in such areas as applied research, feasibility studies, strategic planning, financial planning, energy management, and distribution and conveyance systems planning and rehabilitation. The section has two units (Water and Sewer System Planning, and Planning) and a total staff of twenty-one. Unlike the other sections, as of February 2005, the Planning and Research section has no vacancies.

The Water and Sewer System Planning Unit provides valuable services regarding the upgrading and rehabilitation of the water main and sewer infrastructure. Water main replacement is driven by a point system which considers factors such as age, materials and number of breaks. A similar approach is being developed for the sewer system. A nearly complete sewer assessment program will establish a database and a point system. All video sewer inspections will be electronically stored and points assessed based on uniform evaluation criteria and Operations and Maintenance (O&M) considerations. In the very near future all water and sewer databases will be available through GIS. This will allow for ready access to all historical information and facilitate asset management practices.

The Planning unit provides services in areas such as applied research, feasibility studies, strategic planning, financial planning, and energy management. A sampling of the unit's activities are described as follow:

- Coordination of the procurement process for the Biosolids Recycling contracting initiative.
- Oversight for water treatment plant pilot work. Results are used to assure future regulatory standards can be cost effectively attained.
- Energy management programs including water and wastewater backup power initiatives and administration of existing

Cogeneration contracts. For example, in 2004, preliminary cost estimates for emergency back-up power were developed for the three water treatment plants as well as the Southeast wastewater treatment plant.

- Coordination of lagoon closure regulatory reports for the Northeast and Southwest wastewater facilities.
  - Investigation of the Lead and Copper Rule, assessing the impacts to the customers who have water service lines made of lead.
  - Department interface with the Delaware River Basin Commission.
- (2) Office of Watersheds – The Office of Watersheds (OW) is charged with integrating traditionally separate programs, including the Combined Sewer Overflow (CSO) program, the Storm Water Management program and the Source Water Protection program, to maximize the effectiveness of resources allocated to these programs and to ensure the comprehensive achievement of each program’s goals. The Office of Watersheds is responsible for implementing planning and management strategies that foster practical and cost effective scientifically based solutions with effective public involvement.

Some of the more unique programs and projects being conducted by or in collaboration with the Office of Watersheds are briefly identified below:

- CSO Program - The Combined Sewer Overflow (CSO) program implementation is a significant responsibility of the OW. This involves the compliance with the NPDES permit, as discussed in more detail in Section IV, including the continued maintenance of the Nine Minimum Controls (NMC) and the program’s Long Term Control Plan (LTCP). The implementation of the LTCP has included some significant capital expenditures, approximately \$50 million, to address capture and treatment requirements. Further significant capital expenditures could be mandated in the future to comply with the LTCP and integrated into the pending renewal of the Department’s NPDES permits. However, the OW has adopted a proactive approach to demonstrate the value of utilizing a watershed based approach to address CSOs and improving water quality. The watershed based approach has been supported by the regulatory community as a means to obtain tangible water quality improvement,

while reducing capital expenditures for large CSO capture and treatment projects. Future NPDES permitting will incorporate and therefore mandate further CSO implementation requirements during the next 5 year permit cycle. The Department's demonstrated success with the program, emphasizing a watershed based approach, should decrease the probability that the Federal Government will invoke a Consent Order Agreement to force compliance with CSO objectives.

- Stormwater program - The stormwater program is managed closely with the CSO Program and Source Water Protection program to effectively reduce stormwater flows and increase stormwater quality. The program also embraces the watershed based approach to resolve these issues. The program has developed partnerships within the watershed that enables leveraging of grant funding and resources to achieve results. The program operated under a Consent Order to address illicit connections and in the past year achieved the Order's targets and satisfied its requirements. The subsequently negotiated stormwater permits incorporate the watershed based approach and are complimentary to the other OW programs.
- Source Water Assessment - This very large and significant project involves 50 surface water intakes on the Schuylkill and Delaware Rivers. The project was completed to assess risks and prioritize measures to protect the Water Department's source water. The project was made possible by establishing partnerships with other water utilities along the watersheds of both rivers.
- Green City Program - This program emphasizes the use of sustainable locally based greening projects, such as street tree plantings, lot conversions to green space, and community gardens and recognizes that reduced infrastructure costs are possible through practical and environmentally friendly programs, even in urbanized neighborhoods.
- Partnerships - The Water Department's successful watersheds program has been made possible through the creation of watershed partnerships and regional partnerships, recognizing the linkage of all users both upstream and downstream.

- Fairmont Fish Ladder - In partnership with the Army Corps of Engineers, the Water Department designed and is in the process of re-constructing a fish ladder on the Schuylkill River intended to increase the number of fish above the dam.
- Source Water Protection Early Warning System - Through an initial \$750,000 grant from PaDEP, the Water Department in concert with other regional water utilities, is preparing an early warning communications and notification system for water suppliers on the Delaware and Schuylkill Rivers. Exchange of real time data and water quality information will be possible after this system is implemented.
- Creation of Clean Streams Team - A Clean Streams Team was funded in fiscal year 2004 under the Sewer Maintenance unit. The Water Department recognized that this new team was needed to help implement the extensive watershed assessment initiatives required as part of the Long-term CSO Control Plan, Stormwater Management Phase I permit, and Source Water Protection program. The Water Department will now be able to better coordinate its infrastructure improvement projects with ecologic improvement goals to help it meet permit requirements while incorporating watershed-based management into maintenance strategies. This new team will be staffed with 11 positions which will inventory problem areas along City streams, develop monthly maintenance tasks, help restore aquatic habitat through removal of debris and obstructions and coordinate natural and constructed drainage channel and right-of-way work with the Fairmount Park Commission.
- TMDL development - 77 of the 78 streams in Philadelphia are impaired and will eventually require the development of Total Maximum Daily Limits (TMDLs). A TMDL for PCBs was established for the Delaware River in late 2003. Established limits are low and current loadings to the river are high. The Water Department is active in the Implementation Advisory Committee and the Steering Committee. Likely approaches to the final resolution to the problem will require major sources to be remediated and contributors to the Water Department's plants to implement further controls. The Water Department's risk for capital expenditures associated with the TMDL for PCB's and other developing TMDLs can not be quantified at this time.



The Office of Watersheds' watershed management program has been recognized by both the PaDEP and the US EPA as a success. The EPA has highlighted the program as a national model. The comprehensive work of the Office of Watersheds in the areas of source water protection, stormwater and combined sewer overflows has enabled the Water Department to receive a number of significant awards and recognition.

- (3) Bureau of Laboratory Services (BLS) - All analytical laboratory requirements for permit and regulatory compliance of the Water Department's water and wastewater systems are provided by this group. An expanded description of BLS is included at the end of Section IV, Wastewater System.
- (4) Project Controls Section - This group is responsible for developing, maintaining, and tracking the capital improvement program in addition to implementing the new Geographic Information System (GIS), which is projected to go online during the summer 2005. This group progressed from developing GIS capabilities and databases of information to the point where they are now providing services supporting the Planning and Engineering and Operations Division.
- (5) Design Section - This group performs all engineering functions associated with design and construction. A representative list of the group's activities follows:
  - Evaluations and design of new and rehabilitation projects.
  - Provides input into maintenance, renovation, and reconstruction issues.
  - Reviews and coordinates work done by consultants.
  - Review shop drawings and supervises the processing of change orders.
  - Maintains record plans.
  - Provides engineering assistance to operations and disruptions in water and wastewater service.
  - Coordinates with other agencies such as the Pennsylvania Department of Transportation (PADOT), Philadelphia Streets and Department and Redevelopment Authority, SEPTA and private developers.

- Assists in public education of various issues associated with the water and wastewater systems.

The Design unit has two large groups (Plant Design and Water and Sewer Design) and a total authorized staff of ninety one (91), assigned in 2005. There are currently 25 vacancies. The section maintains its service levels by employing outside consultants to supplement the in-house staff, as necessary.

- (6) Construction Section - This group assumes responsibility for projects upon issuance of the construction notice-to-proceed. Responsibilities include assurance of contractor compliance with design documents, processing change orders if necessary, responding to request for information and handling payment requests from contractors. Construction unit also provides surveying services which assists the contractors in construction stake out at the site, complies with surveying procedures.

#### **D. Finance and Administration Division**

The Finance and Administration Division is responsible for the development of water and wastewater revenue requirements and rates, the preparation and control of the operating budgets, the management of capital financing programs, the conduct of internal audits, the administration of customer revenue and rate programs and the general accounting of operating and capital funds. In addition, the division handles the maintenance of the inventory control, functionalized cost, and fixed asset accounting systems, payroll, procurement, and preparation and follow-up on documentation of federal and state grants. Further, the division provides support services in the area of personnel administration, office management, word processing, and library and research assistance. This division also oversees the department's Facilities Maintenance and Security unit.

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

The Finance Division organizational structure includes a Deputy Commissioner, who reports directly to the Water Commissioner. The division has eight units (Economic Development, Procurement, Administrative Services, Planning and Analysis, Rate Analysis, General Accounting, Utility Management and Facility Management). The authorized staffing level for the division is 174 (including the newly formed security unit with 22 positions). There are also about 8 positions in the capital payments unit budgeted in the capital fund. When the current budget was prepared 128 of the 174 positions were filled. The majority of these vacancies are in the facilities maintenance unit.

Core financial services are provided by the Utility Management, Administrative Services, Rate Analysis, Procurement, Budget and Finance, and General Accounting units.

The Facilities Maintenance unit is responsible for all building maintenance work (concrete, electrical, HVAC) for all Department structures except the three water and three wastewater facilities. All security forces are part of this unit.

The Economic Development unit proactively markets available water and/or wastewater treatment capacity and coordinates the Water Department's participation in attracting and maintaining businesses within the City.

Key management positions within the Finance Division are staffed with highly capable individuals, most of whom are long-term Water Department employees. The Finance Division is organized to efficiently respond to financial needs from other divisions of the Water Department as well as with other City of Philadelphia departments and other entities outside of the City government, as necessary.

## **E. Human Resources Division**

This division provides administrative and human resources planning services to the various divisions and their respective units. Some of the key objectives of this division include: coordination of traditional personnel functions with initiatives in manpower and management training; insuring that personnel recruitment, placement, training, career development and safety programs are consistent with the Water Department's long-term human resources needs and affirmative action goals; initiating policy development related to administration and human resources management and insuring effective communication within the Water Department of policies and procedures generated by management; coordination of labor management initiatives and employee relations programs with the Water Department's long

range operational plans. The two units in this division are Training, and Safety and Health. Authorized staff for these units is 32. The division currently has 5 vacancies.

Through its Human Resources Division, the Water Department maintains an active training program for all employees. Each job has training courses tailored to improving the employees' knowledge and performance. A new training center was opened in fiscal year 2003 on the grounds of the Belmont Water Treatment Plant, with trainers coming from both within the Water Department and outside contractors.

The Training unit oversees close to fifty course offerings covering a broad range of topics. In September 2003, the Department constructed an Individual Development Plan Program. The program defined required courses for each job classification. The employee is required to complete the course listing within a 3-5 year time period. The goal of the program is to ensure competency and foster employee growth. Future training plans include:

- Craft apprentice programs;
- Broadening the scope of diversity training; and
- Provision of extensive management training with simultaneous inclusion of such training requirements into upper management job specifications.

The Safety and Health unit utilizes a team of industrial hygienists to build training programs and support Water Department safety committees in their goal to assure a safe work environment. As noted in the below chart, long term efforts have shown a general downward trend to leveling off of paid days lost.

<b>Table II-1 – Safety Record</b>	
<b><u>Fiscal Year</u></b>	<b><u>Paid Days Lost</u></b>
1993	4821
1994	3884
1995	2278
1996	1499
1997	982
1998	1053
1999	1155
2000	772
2001	1217
2002	1028
2003	959
2004	1163

The city-wide job freeze continues to be a major challenge in filling critical vacancies. The Water Department continues to identify critical vacancies and provide the necessary justifications. In an effort to use labor dollars effectively, the Water Department continues to monitor and control overtime and sick leave usage. To further reduce costs, the Water Department is reviewing the feasibility of collapsing select job titles to increase flexibility. The Water Department is also exploring variations to current work schedules and work rule modifications.

## **F. Public Affairs Division**

The Public Affairs Division supports and enhances the services performed by the Water Department's five other divisions to provide better service to the public. The Public Affairs Division consists of four units. These units, together with their primary areas of focus are presented below.

- (1) Public Education Unit - As its name implies, this unit is responsible for carrying out the Water Department's public education programs. Public education targets school children, neighborhood groups and the individual water customer. During fiscal year 2004, more than 63,500 people toured Department facilities or were touched by the Department's outreach programs. The Public Affairs Division has been responsible for the Water Department's strong publications and extended outreach programs. It has been actively involved in developing public outreach programs for better understanding of urban watersheds, and the part each citizen and industry plays in protecting these valuable resources. It has secured significant financial assistance from various organizations in the Delaware Valley in support of their efforts, including the US EPA, the Delaware River Port Authority, and the Pennsylvania Departments of Environmental Protection and Conservation and Natural Resources.

Among the many projects developed and being implemented by the Public Affairs Division is the Fairmount Water Works Interpretive Center, which was opened in October 2004. The Center traces the history of the Schuylkill River and illustrates the complicated relationship of human civilization along the river. The Center is staffed by six environmentally trained personnel. The Center exhibits on the urban watershed; a Water Laboratory; a classroom and audio-visual theater; interpretive displays; and a watershed technology center. The Center can accommodate 100,000 visitors yearly. In 2004, the Center attracted 37,000 visitors consisting of school children, adult

groups, professional groups and the general public. The Center has also received extensive financial support from partners such as The School District of Philadelphia, The Partnership for the Delaware Estuary, The University of Pennsylvania Institute for Environmental Studies, and The Academy of Natural Sciences.

The Public Affairs Division utilizes a Water Quality Education Community Advisory Committee (CAC), comprised of 40 representatives from various civic, environmental, industrial, and academic organizations, including Water Department staff. The CAC meets monthly to discuss policy and strategy for public education, and provide advice and support of the Water Department's public education programs.

- (2) Public Relations Unit - This unit ensures that the Department's communications with the press are effectively delivered. The Water Department takes a proactive approach to informing the press about its mission. In 2004, there were 48 press releases covering general topics and water main/sewer rehabilitation. Topical press kits are routinely sent to the media to address subjects such as water conservation, drought, and seasonal variations in the frequency of water main breaks.
- (3) Government Affairs Unit - This unit ensures that the Water Department interfaces on a continual basis with City Council, the Mayor's Office, and the State Capital. Legislation, at all levels of government, is monitored and routed to the appropriate Department staff for their review.
- (4) Customer Information Unit – The Water Department is very customer service oriented. Although billing complaints are currently primarily handled by the Water Revenue Bureau, the Customer Information Unit assists in this important function. All operational complaints are handled by the Water Department Call Center. Operational complaints are tracked using a computer system. In addition to operational complaints, the unit has received an increasing number of calls transferred from the Water Revenue Bureau.

During fiscal year 2004 the unit received 197,053 calls, a decrease of 21 percent compared to fiscal year 2002, with an average wait time of only 10 seconds. During fiscal year 2003 approximately 190,000 calls were successfully addressed. A great deal of emphasis is placed on obtaining input from customers and using their input to continuously improve service. Merging of the Water Revenue and Water Department Call Centers to allow better coordination of customer service efforts has been completed and has improved communications with customers and has increased customer service satisfaction. The Office of Customer Services and the Water Revenue Bureau call centers have been integrated, the representatives at each center cross-trained, and the hours of service extended to reduce the need to transfer customer calls between units, which significantly upgraded customer service.

## **G. Information Science and Technology**

The Information Science & Technology (IS&T) Division centralizes all computer operations and application support and manages the hardware and software computer systems for the Water Department. The IS&T Division is divided into four units:

1. Systems Management Support provides desktop support, installs software on servers and desktops and provides email support.
2. Billing Support provides for the processing of customer water and wastewater bills and overall data processing for Water Revenue Bureau.
3. User Support writes or oversees the writing of applications (server and/or web based).
4. Administrative Support provides contact administration, timekeeping, procurement and other related administrative functions.

The IS&T Division has an authorized staff level of 49 and 6 vacancies.

Several projects in which the IS&T group is currently involved include:

- Upgrading of the capital management program (CAPMAN);
- Creating a database to store and retrieve all sewer assessment video inspection records and linking these records to GIS; and
- Unifying street side work orders into Maximo (Inlet Cleaning, Sewer Maintenance, distribution, Call Center complaints).

The Mayor's Office of Information Systems (MOIS) has been given the responsibility to review and approve all computer hardware and software acquisitions, and may consolidate appropriate City information processing activities. Some examples of consolidation efforts are:

- Centralized firewalls to protect all City systems;
- City-wide Customer Information Work Order Management System;
- An Oracle ERP billing system; and
- Help desk and desk top support.

The Water Department works closely with MOIS and the Managing Director's Office to integrate existing applications, where appropriate, into the consolidation effort. Recent department efforts include:

- Linking the Department's customer information system (Maximo) to the City-wide Customer Information Work Order Management System;
- Sharing GIS files with all users; and
- Moving the Department billing system into the City-wide Oracle system. This will be the City's first billing application. MOIS will run all associated computer systems.

## **H. The Office of Environmental Policy and Planning**

The Office of Environmental Policy and Planning was created in June 2001 and is responsible for proactively managing and addressing the various environmental issues applicable to the operation of the Water and Wastewater System. These responsibilities include:

- Negotiating and challenging, as necessary, all permits including NPDES, Stormwater, Clean Air Act, etc.
- Developing an overall strategy for the Water Department for the handling of new emerging challenges, such as the total maximum daily limits (TMDLs) for Volatile Organic Compounds (VOCs) and PCBs, Combined Sewer Overflow (CSO) implementation, Separated Sewer Overflow (SSO) implementation, etc.
- Review, comment, and challenge, as necessary, any new laws and regulations affecting the Water Department.
- Testify before applicable government agencies and commissions to advance and advocate the Water Department's position.
- Respond effectively to any potential environmental problems or issues should they arise.



- Develop environmental policies that guide decision-making on operating and capital budget issues.
- Actively pursue federal and state environmental grants and low interest revolving fund (Pennvest) loans.
- Ensure that all environmental reporting to governmental agencies is timely and accurate.

## **I. Water Revenue Bureau**

Established under the City Charter, the Water Revenue Bureau (WRB), which is managed by the Office of the Director of Finance, has the responsibility for meter reading, billing, and collection of water and wastewater revenue for services provided by the Water Department. WRB responsibilities also include enforcement of payments and customer relations.

Since 1992, the WRB and the Water Department have increased their level of coordination of activities. In accordance with a 1992 agreement, both the Office of the Director of Finance and the Water Commissioner monitor collection of water and wastewater revenues. The cooperation between these two City agencies has improved reporting on revenue collections, implementation of monthly billing, collection of aged receivables by private collection agencies, and enforcement actions. Weekly meetings with the WRB and the Water Department serve to maintain communications and enable prompt and direct response to issues involving both the WRB and the Water Department.

In September 1997, the Water Department and the Water Revenue Bureau began the implementation of the Automatic Meter Reading Program (the "AMR Program") involving the replacement of all residential water meters with new meters equipped with radio transmitter meter reading devices. The AMR Program is the largest and most significant water automatic meter reading endeavor to be implemented in the country. Installation commenced September 11, 1997, on schedule. By January 2003, more than 466,000 new meters had been installed. This program has greatly improved the accuracy of billing, which has resulted in fewer billing disputes, which has had a positive effect on customer service and collections. In addition to the increased revenue that results from such billing program improvements, the AMR Program significantly reduced the costs of meter reading and related support.

The Department is currently working with the Water Revenue Bureau, the Mayor's Office of Information Services, and others on a project to develop a replacement for its

current billing system. This project is currently referred to as "Project Ocean." Project Ocean is the first application to reside on the City of Philadelphia's Oracle ERP and will replace the twenty-five (25) year old application systems currently supporting WRB with a single consolidated solution. The new system will permit WRB to align its business processes with an application designed around industry "best practices" and will facilitate the streamlining of WRB business processes, resulting in cost savings to the WRB through the elimination of redundant processes. Additionally, the new system will provide expanded collection capabilities to enable the WRB to increase revenues.

Under the current project plan, system hardware and software required for the City to host the new system will be installed and fully tested by the end of July 2005. The application software is being delivered and tested in phases, with full system integration testing scheduled to begin in August 2005. Final acceptance testing and user training will conclude in December 2005 and the new system will go into production in January 2006. The Project Ocean team will remain in place for support for at least six months after implementation.

The Water Department has no immediate plans to dispose of the current billing system hardware and software. It will be available for either parallel processing or as a backup for the new system. The Water Department's current billing system, although aging, should be able to support current operations for at least the next five (5) years, if needed.

## **J. Conclusions**

The Water Department is organized in a manner which provides for efficient system operation and maintenance. The divisional and subdivisinal structure provides for delegation of management authority and responsibility through various levels and work units. A good working internal relationship has developed among divisions to facilitate execution of all phases of the Water Department's responsibilities.

Despite the fact that a number of senior level staff are retiring, senior management positions are staffed with highly qualified and trained personnel. Recent senior staff retirements have been filled with seasoned department professionals and succession planning for future retirements is in place. The Department maintains a seasoned group of management professionals with a current average of 25 years of experience.

### **III. Water System**

#### **A. Introduction**

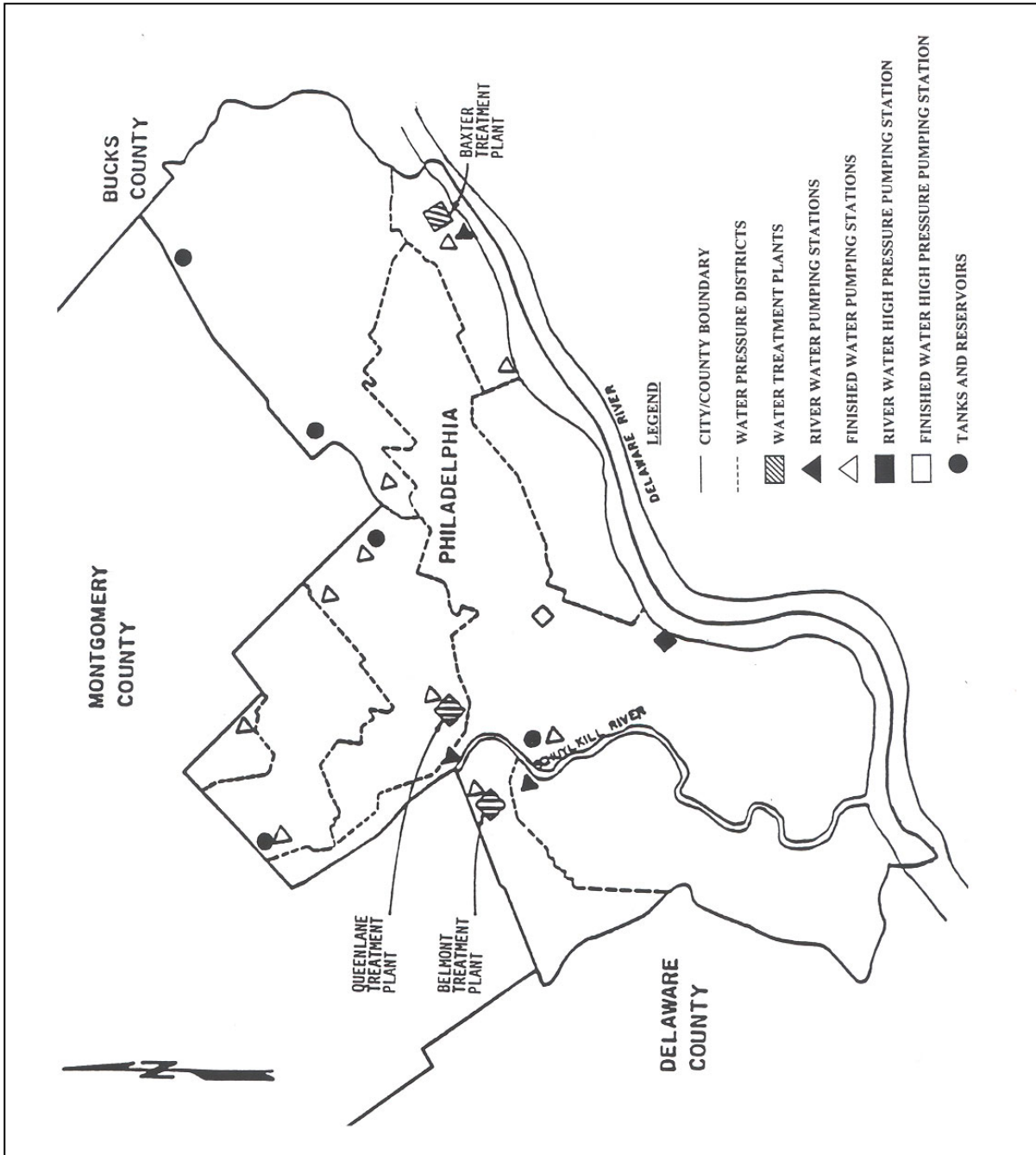
The Philadelphia Water Department began service in 1801 with the dedication of two pumping stations that raised water from the Schuylkill River to two elevated tanks located where City Hall now stands. From there the water flowed to the homes of early Philadelphia through wooden pipes. The Water Department has continued to serve the City's growing needs without interruption since this beginning, through continual adaptation of the latest technological advancements in water service.

Today, the major elements of the water system include three river supply intakes, three treatment plants, storage facilities and a conveyance network. The water system service areas and major facilities are shown in Figure 1 on the following page.

#### **B. Water Supply**

The Water Department presently supplies water to Philadelphia and portions of Bucks County, Montgomery County, and Delaware County. The service to Bucks County is provided under a wholesale contract with the Bucks County Water and Sewer Authority. This contract provides for the sale of treated water to Bucks County at a maximum rate of up to 35 million gallons per day (mgd). The service to Montgomery and Delaware Counties is provided under an agreement signed in fiscal year 2002 with Aqua Pennsylvania, a subsidiary of Aqua America, (formerly known as Philadelphia Suburban Water Company), which provides for the sale of treated water at a rate of up to 11 mgd. Over the past four years, approximately 61 percent of the City's water supply was obtained from the Delaware River and 39 percent was taken from the Schuylkill River. These withdrawals are authorized under water entitlements granted to the City of Philadelphia by the Pennsylvania Department of Environmental Protection (PaDEP) and the Delaware River Basin Commission (DRBC). The DRBC is an interstate agency responsible for regulation of water resources in the Delaware River Basin. It is accountable to the states of Delaware, New Jersey, New York and Pennsylvania, and to the federal government.

The Water Department participates with the DRBC in monitoring the status of the New York City reservoirs controlling releases of water to the Delaware River headwaters and is adequately prepared to address future drought conditions should they occur. The Water Department has never been required to ration water to its customers.



**Figure 2 – Water System Facilities**

In January 2005, both the River Water High Pressure Pumping Station and the Finished Water High Pressure Pumping Station were decommissioned. These facilities are those shown above and remain in place, but have been taken out of service. The standard pressure fire protection system, which has been utilized for the provision of fire protection service to Center City for many years, replaces the decommissioned non potable water high pressure fire system.

A 1984 Agreement among the states dependent on the Delaware River established patterns of division for the Basin's resources during formally declared drought periods. This agreement was in effect during the relatively dry 1980s. Drought emergencies were declared in 1980, 1981, and 1985, but in each case, marginal changes in rainfall deferred the extreme conditions that might have led to rationing of water. The Water Department has participated in drought emergency response programs as a cooperating member of Delaware River dependent communities.

The reservoirs providing water to New York City control the flow of the Delaware River. Releases from these flow into the Delaware headwaters. The Agreement also calls for expansion and improvement of impoundment storage capacities in the upper regions of the Basin, to provide larger reserves for a protracted drought. Expansion of the F.E. Walter Reservoir for flow augmentation has been studied. The Water Department has supported the expansion program in principle, provided that fair and reasonable methods for equitable distribution of related costs among Delaware River users can be developed, and provided that benefits accrue to those parties who will pay for the project. Costs for expanding reservoir storage are not included in the current capital program.

In the event of a drought emergency, the releases from impoundments in the Delaware River Basin are controlled to provide a fresh water flow sufficiently high to keep salinity levels below 180 milligrams per liter at River Mile 98, approximately opposite Wharton Street in south Philadelphia. This salinity limit has been established so that no unacceptable intrusion of salt water into the New Jersey aquifer, from which Camden County water supplies are withdrawn, will occur. These requirements provide adequate protection for the Baxter Plant's water intake, since it is located 12 miles upstream from River Mile 98.

### **1. *System Capacity***

The Water Department delivers water through an integrated system that reflects the PaDEP and DRBC entitlements, and contains raw water intake capability, treated water capacity, and storage capacity commensurate with those entitlements. The total rated capacity of the three water treatment plants is 540 mgd. The capacity of other elements within the water supply system appear in Table III-1. The summary includes the treated water storage capacity with completion of the East Park Reservoir rehabilitation. Compared with these capacities, the average annual daily treated water delivery in fiscal years 2001, 2002, 2003 and 2004 was 270.2 mgd, 263.0 mgd, 270.2 mgd and 263.0 mgd, respectively.

<b>Table III-1 Water System Capacities</b>					
	<b>Average Daily Water Entitlement</b>	<b>Raw Water Intake Capability</b>	<b>Treated</b>		<b>Treated Storage</b>
			<b>Rated</b>	<b>Water Peak</b>	
	mgd	mgd	mgd	mgd	mg
Schuylkill Supply	258	---	---	---	---
Queen Lane Plant	---	207	140	150	85
Belmont Plant	---	140	80	110	42
Delaware Supply	390 <sup>(a)</sup>	---	---	---	---
Baxter Plant	---	480	320	423	207
In-System	---	---	---	---	271
<b>TOTAL</b>	<b>648</b>	<b>827</b>	<b>540</b>	<b>683</b>	<b>605<sup>(b)</sup></b>
<sup>(a)</sup> Average daily water entitlement permitted by DRBC. The average daily water entitlement permitted by PaDEP is 423 mgd. <sup>(b)</sup> Includes East Park Reservoir, Roxborough Storage and Standpipes, Oak Lane Reservoir, Somerton Standpipes and Fox Chase Tank.					

## **2. Population**

The population served by the Water System was approximately 1,672,000 as of the 2000 Census, of which 1,518,000 were located in the City and 154,000 were in Bucks County. Current projections are for the total population in the present service area to stabilize at approximately these levels over the next decade. Per capita rates of water customer usage have been stable since 1970. This means the water delivery requirements at each of the Water Department's facilities from existing customers are generally predictable and not likely to change significantly in the immediate future. In summary, the water treatment, storage, and distribution facilities are of adequate capacity to provide for the present and foreseeable future requirements, even if population growth within the City should occur. The present water system has averaged 63.0 percent of its maximum day capacity during the past four years, and therefore would not be fully committed even if the City were to grow by one per cent per annum over the next 25 years.

## **C. Water Quality**

### **1. Historical Water Quality**

The Philadelphia Water Department has continuously maintained 100 percent compliance with all drinking water regulations in effect at the time. The EPA has proposed several new regulations and the Water Department is in the planning stages of meeting the

requirements of these proposed regulations if they are imposed. This section describes the Water Department's compliance status with present regulations and actions to meet future proposed regulations.

## **2. Partnership for Safe Water**

Since January 1996, when the Water Department signed a voluntary agreement with the EPA to participate in the Partnership for Safe Water Program (the Partnership), the Department has been committed to reduce “turbidity,” an industry standard measure of water purity. The purpose of the Partnership is to provide a format for drinking water utilities around the country to survey their facilities, treatment systems, operations, maintenance, and management procedures in order to identify opportunities that will enhance the water system's potential to prevent the entry of *Cryptosporidium*, *Giardia*, and other parasitic organisms into the treated water, and to voluntarily implement those actions that are appropriate for the system. The Water Department joined approximately 300 water utilities to evaluate and assess its water treatment procedures against extremely stringent performance goals. The self-assessments and other reviews have focused on improvements that can be made without incurring substantial capital or operating expenditures. Through these efforts, the turbidity of Philadelphia’s drinking water in 2004 was about ten times cleaner than required by state and federal requirements.

During 1996, the Water Department performed an initial self-assessment of its three water treatment plants. This process addressed: system design, administration/management, maintenance, and operation. The Department has collected water treatment data, submitted reports to the Partnership, and consistently improved its treatment practices in order to meet the stringent standards set as a goal by the Partnership. The water quality goal established by the Partnership states that finished water turbidity should not exceed 0.1 Nephelometric Turbidity Units (NTU) and that filter effluent should not exceed a turbidity level of 0.3 NTU for more than 15 minutes following the backwash cycles.

In order to meet the Partnership's water quality goals, the Water Department has increased the level of instrumentation at its three water treatment plants. These instruments include on-line filter turbidimeters and particle counters, rapid mix pH analyzer alarms, filter chlorine analyzer alarms, and a critical alarm panel monitored on a 24-hour basis. Chemical coagulant dosages have also increased. This has resulted in significant increases in water treatment plant residuals, which are processed at the Department’s wastewater treatment plants.

In fiscal year 1999, Philadelphia became the first major city in the U.S. with multiple drinking water plants to receive an EPA Director's Award for meeting certain additional requirements of the Partnership for Safe Water (Phase III of the program), including completion of a self-assessment and peer review. The Water Department was recently awarded the prestigious 5 Year Director's Award for meeting the stringent criteria of the Director's Award for five consecutive years. While the Water Department's association with the Partnership has resulted in overall lower turbidity of its finished drinking water, this program has also enabled the Water Department to meet the requirements of the Interim Enhanced Surface Water Treatment Rule and has positioned the Department for compliance with the proposed Long Term 2 Enhanced Surface Water Treatment Rule in terms of finished water turbidity.

### **3. *Regulatory Requirements***

The water operations of the Water Department are subject to the requirements of the Safe Drinking Water Act (the "SDWA") of 1974, as amended in 1986 and 1996. The 1986 Amendments extended the regulatory agenda of EPA to include, among other things, the development of drinking water standards for 83 contaminants, criteria by which surface water supplies would be required to utilize filtration performance standards for disinfection, and the banning of lead-containing materials from distribution and home plumbing systems. The 1996 Amendments changed the emphasis of developing rules only slightly, but these latest Amendments did stress some new issues such as the protection of source waters, annual reports to consumers on the quality of their drinking water, regulation of filter backwash water within treatment facilities, and the establishment of a state revolving loan fund. Since 1998, several new rules have been implemented.

The Interim Enhanced Surface Water Treatment Rule (ESWTR) and the Stage 1 Disinfectants and Disinfection Byproducts Rule (Stage 1 D/DBPR) were both promulgated in December 1999 and became effective in January 2002. The Filter Backwash Recycling Rule was promulgated in May 2001 and became effective in December 2003. The Radionuclides Rule was promulgated in December 2000 and also became effective in December 2003. The Arsenic Rule was promulgated in March 2001 and becomes effective in January 2006. The Groundwater Disinfection Rule (GWR), the Long Term 2 Enhanced Surface Water Treatment Rule and the Stage 2 Disinfectants/Disinfection Byproducts Rule are still under development. Several of these key regulations are discussed below.

The Water Department has conducted an extensive water quality monitoring program to assess the potential impacts of the SDWA regulations. The Water Department's Bureau of Laboratory Services (BLS) analyzes approximately 1000 drinking water samples each month



collected from the water treatment plants, reservoirs and distribution system. The Water Department's Planning and Engineering Division staff tracks the development of regulations, and provides input into the formulation of the regulations.

Philadelphia treated water quality meets all existing drinking water regulations. It also anticipates meeting all currently promulgated and proposed regulations for microbial and turbidity parameters, disinfection byproducts, synthetic organic compounds, volatile organic compounds, inorganic compounds, radionuclides, and aesthetic parameters such as taste and odor.

**a. *Lead and Copper Rule***

The Lead and Copper Rule was promulgated in June 1991. It addresses the control of copper and lead that may leach from home plumbing systems. Compliance with the rule is based upon treatment technique requirements that are triggered by exceedances of the lead action level of 0.015 mg/l or the copper action level of 1.3 mg/l measured at 90 percent of the consumers' taps sampled.

*Compliance Status:* The Water Department is in full compliance with the regulation. The Water Department has taken steps to further optimize its treatment process including an aggressive public outreach effort to inform customers how they can minimize leaching of lead from home plumbing. The Water Department has a uniform treatment approach at all three water treatment plants, using optimized pH and a zinc orthophosphate corrosion inhibitor. The Water Department has optimized the ratio of zinc to phosphate in the chemical compound that they use and have reduced the 90th percentile lead level to 0.013 mg/L and the 90th percentile copper level to 0.3 mg/L.

The Philadelphia Water Department is planning to make a minor change in the finished water concentration of zinc orthophosphate, increasing it to 1.5 parts per million from the current dosage of 1.2 parts per million, in the water supplied to our customers. We add phosphate to water to control the rate of metal loss by corrosion in the water supply network, which includes the internal piping in your facility. We plan to begin the increased dosage change within the next few weeks and expect to reach a stable concentration of phosphate before the end of June 2005. At this time, we are not planning any other water treatment changes that would affect water quality. The water that we supply currently meets all federal and state regulations, and it will still meet these regulations when we make the change to the finished water zinc orthophosphate concentration.

**b. Total Coliform Rule (TCR)**

The TCR requires water systems to monitor for total and fecal coliform at specific locations throughout the distribution system. The rule allows up to 5 percent total coliform positive samples.

*Compliance Status:* The Water Department is in full compliance with the TCR and its performance has been exceptional. During the past four fiscal years, the Water Department has not had any total coliform violations from its 80 monitoring locations.

**c. Disinfectants/Disinfection By-products Rule (D/DBPR)**

This rule controls levels of disinfectants and disinfection by-products. Stage 1 of the rule was promulgated in December 1998 and became effective on January 1, 2002. Stage 2 of this Rule is being developed by USEPA. These rules contain maximum residual disinfectants levels (MRDLs), maximum contaminant levels (MCLs) for disinfection by-products and a treatment technique for total organic carbon (TOC) removal. The Stage 1 Rule reduced the MCL for total trihalomethanes (TTHM) from 100 µg/L to 80 µg/L and established an MCL of 60 µg/L for the sum of five haloacetic acids (HAA5), another group of disinfectant by-products. In addition, MRDLs were established for chlorine (4 mg/L), chloramines (4 mg/L), chlorine dioxide (0.8 mg/L), chlorite (1.0 mg/L), and bromate (0.010 mg/L).

*Compliance Status with Stage 1:* The Water Department is in full compliance with the Stage 1 MCLs and treatment technique. The annual average level of TTHMs in 2004 for the Department's three water treatment plants was 39 - 42 µg/L, and for HAA5s was 29 - 37 µg/L. All three water treatment plants are being operated in an enhanced coagulation mode and, as a result, are not only achieving the required monthly removals of TOC, but typically exceed the required removal by 27 to 49 percent. The Department is in compliance with the 4.0 mg/L MRDL for chloramines.

*Compliance Status with Stage 2:* The Stage 2 phase of the D/DBPR was proposed in May 2004 and the final rule is expected to be promulgated in late 2005. Based on extensive distribution system sampling, the projected worst-case TTHM locational running annual averages for the three treatment plants are in the range of 52 to 55 µg/L, well below the MCL of 80 µg/L. Similarly, for HAA5, the worst-case running annual averages are in the range of 33 to 42 µg/L measured against an MCL of 60 µg/L. As such, the Water Department is expected to be in full compliance with the Stage 2 D/DBPR.

**d. Interim Enhanced Surface Water Treatment Rule (ESWTR)**

This rule was promulgated in December 1998 and became effective on January 1, 2002. This Rule lowered the turbidity treatment technique level to 0.3 NTU in 95 percent of the samples from the previous level of 0.5 NTU. It also set a maximum turbidity of 1.0 NTU

in the finished water and required installation of continuous turbidity monitors on each filter. The Rule requires that operating procedures be revised and follow-up investigations be conducted if individual filters are found to exceed specific monitoring criteria.

*Compliance Status:* The Water Department is in full compliance with all requirements of this Rule. Through its participation in the Partnership program, the Water Department maintained filtered effluent turbidity at levels less than or equal to 0.1 NTU more than 99.9 percent of the time during the most recent year.

**e. *Long-Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR)***

The LT2ESWTR, as proposed, will require microbial monitoring (2 years of monthly *Cryptosporidium* and *E. coli* monitoring) that will be used to place treatment plants in different "bins" based on their average source water *Cryptosporidium* level. Treatment plants in the different "bins" will have a "toolbox" of options that they can chose to implement in order to obtain the additional removal and/or inactivation credits required to meet the treatment technique of this Rule.

The Department, utilizing the analytical services of the Bureau of Laboratory Services (BLS), has completed the microbial monitoring and has determined that the Belmont and Baxter Treatment Plants will qualify for Bin 1, meaning that no additional treatment will be required. The Queen Lane Plant will likely be placed into Bin 2, thus requiring additional removal/inactivation credits. This requirement is expected to be satisfied by credits obtained from the Source Water Protection Program and the very low levels of turbidity in the effluent of individual filters at the plant.

Because the BLS has been certified by EPA to perform the microbial analyses required by LT2ESWTR, it is expected that the above-referenced monitoring data will meet the "grandfathering" requirements of the rule, thus meeting the rule's monitoring requirements.

**f. *Consumer Confidence Reports Rule***

The 1996 SDWA Amendments require the Water Department to issue an annual report on treated water quality to its consumers, called the, Consumer Confidence Report (CCR). The Department has done this annually in the format required by the Rule. In fact an effort to increase public awareness, the CCR is now published in the local newspaper, the Philadelphia Inquirer and Daily News.

*g. Filter Backwash Recycling Rule (FBRR)*

The FBRR became effective in December 2003. The recycle streams regulated by the FBRR are filter backwash water, sludge thickener supernatant and liquids from dewatering processes. The rule requires recycle flows to pass through all processes of the treatment plant in order to maintain removal credit for *Cryptosporidium*. In the case of conventional treatment facilities like those of the Water Department, this requires the return of recycle streams prior to or concurrent with the point of primary coagulant addition. The rule also requires the Department to maintain records related to the wastewater streams generated at each treatment plant.

*Compliance Status:* The Water Department currently discharges all of its filter backwash and settling basin waste streams to the sewer system for treatment at the wastewater treatment plants, with the exception of the spent backwash water at the Baxter water treatment plant. The Baxter filter backwash water is recycled to the raw water basin, ahead of the point of coagulant addition, for reprocessing through the complete treatment process. Therefore, the Department is in compliance with the requirements of the FBRR.

*h. Source Water Assessment Program*

The 1996 SDWA Amendments require each state to develop a Source Water Assessment Program, which is designed to stress protection of the source water prior to treatment. The Water Department was selected by PaDEP to lead a joint effort with Aqua Pennsylvania and Pennsylvania-American Water Company to perform a source water assessment of water intakes along the Schuylkill River and its tributaries during fiscal years 2001 and 2002. A similar effort was undertaken with utilities that utilize the Delaware River as a source of supply. In all, the program involves 50 surface water intakes on the Schuylkill and Delaware Rivers.

The current focus of effort is to move beyond the assessment stage and develop and implement protection plans and programs. Utilizing a partnership approach involving regulatory agencies, utilities and community-based action groups, the Water Department has developed an innovative and broad-based program that will yield far-reaching environmental and source water protection benefits. The program has earned a number of national recognitions awards and stands as a model for other communities to emulate.

*i. Arsenic Rule*

The Arsenic Rule became effective on March 3, 2001 and established an MCL of 0.01 mg/L for total arsenic. The compliance date for systems with arsenic levels that exceed the MCL is January 23, 2006.

*Compliance Status:* The Water Department is in compliance with the Arsenic Rule. Arsenic levels in the finished water supply are below method detection limits.

*j. Radionuclides Rule*

The Radionuclides Rule became effective on December 8, 2003. It retained the MCLs for combined radium-226 and 228 (5 pCi/L), gross alpha (15 pCi/L), gross beta (50 pCi/L) and established a new MCL for uranium of 30 µg/L.

*Compliance Status:* The Water Department is in compliance with the Radionuclides Rule. Radium-226, radium-228, gross-alpha and uranium levels in the finished water supply are below method detection limits. Gross beta has been detected at a level of 5.78 pCi/L, a level well below the MCL of 50pCi/L.

## **D. Water Treatment Plants**

The water system is served by the Baxter, Queen Lane, and Belmont Water Treatment Plants. The Baxter plant treats water from the Delaware River; the Queen Lane and Belmont plants are supplied by the Schuylkill River. All three plants provide similar treatment, consisting of raw water sedimentation, coagulation, flocculation, clarification, rapid sand or dual media filtration, disinfection and fluoridation. Finished water can be stored at the treatment site for later distribution, or discharged directly to the distribution system. Portions of each treatment facility date from the early 1900s. Major improvements and additions were completed at the Belmont plant in 1965 and at the Queen Lane plant in 1960. The Baxter plant went on line as a new rapid sand filtration plant in 1959. Other major improvements including automation and new chemical feed systems were made in the past decade.

A centralized preventive maintenance program serves common components of the three water treatment plants. Components that require either periodic repair or rehabilitation are placed on a master schedule that includes both preventive and corrective maintenance activities. Priorities for actions are defined using this schedule and reviewed at periodic intervals. Each plant maintains a preventive maintenance program for equipment components that require inspection and lubrication on a more frequent basis than the components covered by the centralized program's master schedule.

A program at all three plants to convert the single media rapid sand filters to sand and anthracite dual media filters is well underway. A number of filters are converted each year. The Baxter plant is more than 70 percent complete. All single media rapid sand filters have been converted to sand and anthracite dual media filters at Belmont and Queen Lane. A filter

is converted when it requires rehabilitation or if other problems are noted during annual inspections. Conversion to dual media increases filter capacity and provides attendant benefits by reducing the required backwash frequencies. Reduced backwash frequencies, in turn, yield energy savings. In most instances, as a part of the conversions, existing clay underdrains are being replaced with new plastic underdrains.

The Water Department continues to conduct pilot scale investigations to respond to upcoming regulations and to investigate effects of proposed process changes. The initial phase of one of the pilot plant studies was conducted to investigate the impact of changing coagulant dosages, the pH of coagulation, and the point of chlorination. In 2004, this work was completed and integrated into the current water treatment process.

Another project, the pilot plant investigated the practicality of using ozone to inactivate *Cryptosporidium oocysts*. The conclusions from this extensive study indicates that ozonation for inactivation is very expensive. Data collected through AwwaRF sponsored research, Water Operations, and source water assessment indicates that the Water Department will be able to meet regulations relative to *Cryptosporidium* without ozone or ultraviolet light inactivation.

In Fiscal Years 2006 and 2007 pilot plant studies will focus on the effectiveness of coagulants other than ferric chloride. The Water Department has predominantly used ferric chloride; however, with changes in the coagulant market place and changing ownership of their primary supplier, it is imperative that the Water Department evaluate alternative coagulants in comparison to ferric chloride on the basis of performance and cost.

Additional studies are being undertaken, namely, the international multi-utility study to further the understanding of the occurrence of manganese (Mn) in drinking water. Although Mn is currently undetectable in Philadelphia's drinking water, other proposed changes in the treatment process may produce a level of Mn that could be of aesthetic concern, producing what is called, "black water." The pilot plant study will help the Water Department avoid manganese problems that may result from treatment modifications that are under consideration. Specifically, the delay of chlorination until after filtration in order to reduce disinfection by-product formation for future regulation.

Future studies will include protocols to ascertain the effect of lower chloramine residuals in the distribution system in order to reduce disinfection by-products, and investigating the boosting of chloramine residuals in the distribution system to maintain lower disinfection by-product target levels.

**1. Baxter Water Treatment Plant**

The Baxter Water Treatment Plant became operational as a new rapid sand filtration plant in 1959. The Baxter plant draws water from the Delaware River and after treatment, it flows to the Torresdale Treated Water Pumping Station for distribution to the northern and central parts of the City and to Bucks County. The Baxter plant is the largest of the three water plants, with a design capacity of 320 mgd and a peak hydraulic rate of 420 mgd. Recent water demands are shown on Table III-2.

<b>Table III-2 Baxter Plant Daily Demands</b>		
<b><u>Year</u></b>	<b><u>Average Daily Output</u></b>	<b><u>Maximum Daily Output</u></b>
	mgd	mgd
2001	149	191
2002	154	186
2003	155	185
2004	151	197

Sixty-six of the original 94 rapid sand filters have rebuilt underdrains and have been converted to a dual media configuration. This program will continue until all 94 filters have been converted. The plant staff has evaluated various operational techniques to reduce the magnitude of the post-backwash turbidity spike. It has been determined that a combination of holding the filter out of service for a period of 2 hours following the backwash, combined with a stepped backwash sequence will greatly reduce this spike.

The new SCADA system installed as part of the Partnership program to monitor the turbidity of each filter effluent has enabled the plant staff to identify problems with individual filters that could not be noticed without this higher level of monitoring. The impacts of process changes and improvements can also be observed much easier and quicker. Also, the backwash system capital improvements project, completed in 2003, provides variable flow capability for washwater pumps. The new system allows for greater flexibility in selecting various pump/tower combinations and in settings wash water flows to optimize and customize filter backwashes resulting in cleaner filters and reductions in post backwash turbidity peaks.

Other projects either planned or ongoing at the Baxter plant include:

- The flow pattern in the flocculators has been modified to improve mixing and floc settling characteristics. Improved settled water turbidity has resulted from this modification.
- A major construction project associated with rehabilitation of the roof drainage system and other structural repairs to the finished water underground storage basins has been underway for the past several years and should be completed by 2006.
- A two-phase project to convert from liquid chlorine to sodium hypochlorite is well underway. The first phase, which will convert one half of the plant to the new disinfectant, is estimated to be complete by May 2005 with the second phase projected for completion 8 to 12 months after Phase I.
- The switchgear for the pretreatment/intake buildings is undergoing replacement with completion expected by April 2005.
- The design for replacement of the switchgear in the filter building has been completed and is expected to go out for competitive bids in fiscal year 2006.
- A project to dredge solids from the raw water basin is expected to go to competitive bidding in early 2007.

Staffing at Baxter treatment plant recently increased from 52 to 54 budgeted positions with the addition of two municipal guards to increase plant security as recommended in the Vulnerability Assessment conducted by the Department.

## ***2. Queen Lane Treatment Plant***

The Queen Lane Water Treatment Plant began service in 1912 as a 70 mgd slow sand filter plant. The plant was improved several times, including a complete renovation in 1960. The Queen Lane plant draws water from the Schuylkill River and serves as the main distribution point for service to center city and northwest Philadelphia, west of Broad Street and east of the Schuylkill River. The plant is rated at 140 mgd. Recent water demands are shown on Table III-3.



<b>Table III-3 Queen Lane Plant Daily Demands</b>		
<b><u>Year</u></b>	<b><u>Average Daily Output</u></b>	<b><u>Maximum Daily Output</u></b>
	mgd	mgd
2001	71	96
2002	71.9	97.0
2003	68.8	98.1
2004	71.4	91.5

Projects either planned or ongoing at the Queen Lane plant include:

- All chemical dosing and sampling lines throughout the plant are being replaced. This project is expected to be completed in June 2005.
- Replacement and upgrade of the Distributed Control System to a Windows-based system is expected to be complete in June 2005.
- Sulfuric acid and sodium hydroxide storage and feed systems, to support an enhanced coagulation mode of operation, have been installed and are expected to be fully operational by June 2005.
- A project to replace and upgrade the Backwash Pump switchgear is expected to be complete by the fall of 2005.
- Projects to be undertaken in fiscal years 2006 – 2008 include repairs to the washwater tank, infrastructure repairs, switchgear upgrades, replacement of filter drain valves and backwash valves, concrete repairs to a number of facilities, rehabilitation of floc/sedimentation basins 1 and 4, relining of the ferric chloride storage tanks, construction of an equipment storage building, elimination of the raw water basin bypass to the filters and renovation of the chemical-maintenance building shop area.

Staffing at the Queen Lane Plant recently increased from 52 to 54 budgeted positions with the addition of two municipal guards to increase plant security as recommended in the Vulnerability Assessment conducted by the Department.

### **3. *Belmont Treatment Plant***

The Belmont Water Treatment Plant draws water from the Schuylkill River and serves as the source of supply for West Philadelphia. The Belmont plant is rated at 80 mgd. Recent water demands are shown on Table III-4.

<b>Table III-4 Belmont Plant Daily Demands</b>		
<b><u>Year</u></b>	<b><u>Average Daily Output</u></b>	<b><u>Maximum Daily Output</u></b>
	mgd	mgd
2001	44	49
2002	42.7	57.9
2003	51.6	59.3
2004	45.9	53.7

Residuals from the flocculation and sedimentation basins are sent to the Southwest Water Pollution Control Plant (WPCP), as is the filter backwash. An internal discharge permit for the Belmont plant residuals flow was issued by the department's Industrial Waste Unit in July 1994. The permit required that routine discharges to the sewer be monitored weekly. Additional sampling is required during periods of high treatment flow rates and high river turbidity. Although this permit has expired and IWU has not reissued it, the plant continues to operate and monitor under the same conditions as required by the permit

Pilot plant testing to address both EPA's enhanced coagulation rule and other studies to optimize treatment including rapid mix and sedimentation evaluations have been conducted over the past four years. The pilot plant testing will subsequently focus on EPA's Enhanced Surface Water Treatment Rule requirements and will involve study of advanced treatment processes including ozonation and dissolved air flotation (DAF) thickening.

The dissolved air flotation (DAF) clarification project was conducted at Belmont because the algae loading on that river is greater and more variable than the Delaware. The results indicated that DAF was a viable clarification technology that would reduce algae related problems and allows for greater treatment plant capacity if implemented. However, the cross over to a new clarification technology would require significant capital expense and a significant continual expense in the form of greater energy consumption, that could not take advantage of lower off-peak electric rates. This, in addition to no apparent need to increase overall plant capacity, limited the usefulness of DAF technology. Consequently, after a few months of testing that portion of the research was terminated.

The grouting and concrete repair work at the South Filter Basin was completed in June 2003 and concrete repairs to the clearwell were completed in June 2004. Other projects recently completed at the Belmont plant include:

- Replacement of the major valves on the backwash system in the spring of 2004.

- Repairs to the concrete in the rapid mix influent valve chamber, along with replacement of the electrical conduit, were completed in June 2004.
- A new potassium permanganate storage building was completed in October 2002.
- A sodium hydroxide feed system was installed and completed in March 2003.
- Replacement and upgrade of the Distributed Control System to a Windows-based system.

Future projects either planned or ongoing at the Belmont plant include:

- Replacement of electrical switch gear in 2006.
- Solids removal from and concrete repairs to the East and West sedimentation basins is scheduled for the summer of 2006.
- Other planned projects include replacement of the pretreatment control valves in the flocculation basins, power distribution improvements, concrete rehabilitation, redesign of the sulfuric acid feed system and improvements to the ammonia and zinc-phosphate feed systems.

Staffing at Belmont has a budgeted level of 50 positions from 45 including the addition of two municipal guards to increase plant security as recommended in the Vulnerability Assessment conducted by the Department.

## **E. Water Conveyance**

The mission of the Water Conveyance Section is to reliably and efficiently transport and distribute water, on demand, preserving quality and providing service focused on overall customer satisfaction. The section is composed of four units, including: Distribution, Pumping, Load Control, and Headquarters. Authorized positions for the Division are 351. Currently, there are 30 vacancies.

### **1. *Distribution Unit***

The responsibility of this unit is to provide permanent repairs and maintenance to the water distribution infrastructure, construct service connections, supply twenty-four hour emergency response and provide local control of the water distribution systems, rectify system failure and maintain product control, provide reliable water supply cost effectively, while being responsive to our customers' and environmental needs. Major components of the distribution system include: 3,160 total miles of pipeline (417 miles of transmission and

2,743 miles of distribution mains), 28,000 hydrants and 84,700 valves (82,750 valves 12” and smaller and 1,950 valves 16” and larger).

The table below shows the major performance parameters for the unit for the last 3 fiscal years.

<b>Table III-5 Repair Record</b>			
Service Parameter	FY 02	FY 03	FY 04
Breaks Repaired	522	988	794
Discontinuance Orders Completed	1331	1778	2261
Valves Repaired	172	167	162
Leak Survey (miles of pipeline)	1313	1421	1160
Hydrants Repaired	5108	4849	4883

A preventive maintenance program that involves both field investigations as well as systematic scheduling of repairs and replacements is in place for the pipeline infrastructure. The program consists of: leak surveys, utilization of information from the newly developed sewer assessment program, examination of portions of repaired mains to determine extent and depth of corrosion and possible causes of breaks as well as corrosion control studies.

In order to assure proper operation of the network’s 84,700 valves, a valve tracking program is in place. This program records all valve activities (operation, inspection, repair and replace). The table below summarizes the valve program for fiscal 2004.

<b>Table III-6 Valve Maintenance (2004)</b>			
Valves	Total	Small (12” or smaller)	Large (16” or larger)
Operated	12,834	11,526	1308
Found defective	235	203	32
Repair/Replace	162	151	11
Inspected via Water Main Relay Program	1812		

In fiscal year 2004 hydrant availability was 97.5%. The Water Department attributes this high reliability to a proactive program incorporating routine inspections, repairs, and

painting. For fiscal 2004 there were 5014 inspections, 4883 repairs and 2824 hydrants painted. In addition 1206 tamper-proof hydrant locks were installed. Over 54% of the department's hydrants have locking devices. Hydrant abuse has been drastically reduced.

In fiscal 2004 the unit implemented several programs to provide more cost effective service. The maintenance section consolidated field supervision as the leak survey crew size was reduced from 3 to 2. Streamlined procedures reduced D-order job time by 38%. Unit supervisors utilize laptop computers for field access to system information and fire hydrant rehabilitation (reconditioning returned hydrants in lieu of purchasing new hydrants) saved in excess of \$500,000.

In fiscal 2002 the unit took over responsibility for maintenance of the water mains, valves and hydrants at the Philadelphia Navy Yard, now the Philadelphia Naval Business Center. Work continues to properly document this additional asset and develop appropriate maintenance procedures.

In January 2005 the non-potable high pressure fire system (50 pipe miles, 1000 hydrants and 2 pumping stations) was decommissioned. The standard pressure fire system has provided the fire protection service in the Center City area for the past several years and will continue to provide the fire protection service in that area in the future. Planning is underway to determine the disposition of these assets.

Unit maintenance activities are tracked using a variety of computer programs. These programs include: distribution (DMIS), valves (VMIS) and hydrants. Future plans call for migrating all these programs over to the department-wide Maximo system. This will allow all department maintenance activities to be tracked uniformly and also provide a more unified customer information system.

## **2. *Pumping Unit***

The unit's responsibility is to maintain and repair all raw and potable water pumping systems. Additionally, the unit maintains all raw water intakes, finished water reservoirs, system tanks and standpipes. The unit strives to maximize pump availability, pump efficiency and productive use of all maintenance forces. The chart below details the unit's success for these three parameters.

<b>Table III-7 Pumping Unit Activity</b>			
	FY 02	FY 03	FY 04
Pump availability	95.4	95.9	96.0
Station Efficiency (wire to water)	78.4	77.8	77.9
% planned work (a productivity measurement)	95.1	96.4	96.4

Pump availability remains at a consistently high level due to the proactive maintenance approach employed. Despite the age of the majority of the pumps, the unit has been able to hold pump efficiencies steady. This is accomplished through good maintenance practices and using techniques such as impeller modification to better suit actual demand. Future plans call for the downsizing of selected pumps to better match system demand.

All pump maintenance is tracked by a computer program (PUMA). In order to attain uniformity, this computer program will be replaced by Maximo in fiscal year 2005.

### **3. Load Control Unit**

The mission of the Load Control Unit is to operate and maintain the Load Control Center, and direct water transmission system operations to ensure a reliable water supply. The unit also conducts hydraulic investigations, including water loss control programs, and provides asset management support services. Additionally, the unit plays a lead role in the Water Accountability Committee and Reservoir Team. The Reservoir Team was created to better manage the strategic planning, capital program projects, and operations and maintenance functions of the Water Department reservoirs. This multi-functional team has updated all standard operating procedures and is improving as-built documentation of reservoir facilities. The Team sponsored the Reservoir Management Assessment Project in 2004, which was a comprehensive assessment of reservoir practices, conducted by Economic and Engineering Services, Inc. This assessment found that the Water Department provides outstanding upkeep of its reservoirs to meet the quantity and quality needs of the drinking water supply system. Currently the Strategic Planning Group is studying the long-term options for East Park and Oak Lane Reservoirs where the floating covers are into the second half of their useful lives.

The City continues to maintain a successful water loss control program. During 2004, water losses remained stable compared with 2003. While this reflects continued good

control of losses in the city, it suggests that the city may have reached a plateau of water loss reduction with non revenue water at roughly 86 million gallons per day for the past three years. The City has cut its water losses by more than one third over the past ten years and these efforts have gained national recognition for Philadelphia as an industry leader in water loss control.

The Load Control Center and water transmission system operate continuously. All pumps are controlled centrally using a Supervisory Control and Data Acquisition (SCADA) system. The SCADA system is maintained by the unit. The Load Control SCADA System provides a reliable supply of water in a cost effective manner. The table below illustrates the unit's ability to control electrical demand (a major cost component of the operation).

<b>Table III-8 Load Control Unit</b>				
	FY01	FY02	FY03	FY04
Average Daily Delivered Water, mgd	270.2	263.0	270.2	263.0
Total Power Consumption, million kilowatt-hours	131.1	126.7	129.3	125.0
Total Peak Billing Demand, Kilowatts	179,754	162,178	163,773	150,124
Total Expenditures for Power	\$6,601,500	\$6,233,000	\$6,620,000	\$6,149,000
Cost per million gallon pumped (raw & treated water)	\$65.62	\$64.94	\$66.07	\$62.12

The unit provides a variety of water distribution system testing and investigative functions. These functions include fire flow testing, fire system troubleshooting, water quality investigations and investigation of new leak management initiatives.

Asset management support services provided by the unit include: planning and scheduling of capital program water system work, review of all capital program design documents, oversight for the Valve Maintenance Information System, coordination of the Large Valve Management Program and reestablishment of the Department's hydraulic modeling capabilities.

The Load Control Unit is moving to enhance the security capabilities of the SCADA System to meet the department's long-term security objectives.

## **F. System Storage Pumping and Flexibility**

The Water Department provides finished water storage at each treatment plant. In addition, there are seven other treated water storage reservoirs, standpipes, or basins in the system. All finished water storage is covered.

The principal covered storage reservoirs and their approximate capacities are:

East Park (Northeast)	147.2 million gallons
Oak Lane	72.8 million gallons
Roxborough (Upper & Lower)	28.5 million gallons

In addition, the Fox Chase and Somerton tanks and the Roxborough standpipe provide 22.5 million gallons of in-system storage.

Pumping stations are located at each treatment plant with seven other stations located off-site providing water service pressure in the distribution system. The major pumping stations, divided into Delaware and Schuylkill Divisions, are:

### Delaware Division

East Oak Lane  
Fox Chase Booster  
Lardners Point  
Torresdale Low Service  
Torresdale High Service  
Torresdale Raw Water  
West Oak Lane

### Schuylkill Division

Belmont High Service  
Belmont Raw Water  
Chestnut Hill  
East Park Booster  
Queen Lane High Service  
Queen Lane to Roxborough  
Queen Lane Raw Water  
Roxborough High Service

By utilizing reservoir storage capacity and pumping capabilities, through the Load Control Center, the Water Department is able to provide water during periods of water shortage in a given service area. A great deal of flexibility is built into the system. With few exceptions water can be provided city wide from any of the three treatment plants.

## **G. Demand Management Programs**

The Water Department maintains programs to reduce uncaptured revenue and the loss of finished water from the distribution system. It has been very active in promoting new methods through the American Water Works Association, and has attained the recognition as an industry leader in this regard. Programs include the annual publication of a detailed



system water audit, ongoing leak detection and repair, a Meter Management Program featuring the nations largest Automatic Meter Reading (AMR) system, participation in important research projects on leakage management.

**1. Annual Water Audit**

The Water Department was the first water utility in the United States to adopt the new best management water audit approach published by the International Water Association and the American Water Works Association in 2000. The method accounts for all water as either consumption or losses. Apparent Losses are the paper losses due to customer meter inaccuracies, billing error and unauthorized consumption. These losses (unmetered quantities) cause water utilities to lose a portion of the revenue to which they are entitled. Real Losses are physical losses, largely leakage. These losses inflate the marginal water production costs for water utilities. The Infrastructure Leakage Index (ILI) gives a measure of leakage control standing and is the ratio of the current level of leakage to the technically low limit believed achievable (unavoidable level) if leakage must be completely minimized due to scarce resource availability, shortages, etc. For systems not confronting such pressures, AWWA recommends targeting an ILI of no more than 8.0. Achieving this level would mean targeting an additional real loss reduction of 24.7 mgd for the Water Department.

<b>Table III-9 Water Consumption or Losses</b>					
<b>Component</b>	<b>FY2000</b>	<b>FY2001</b>	<b>FY2002</b>	<b>FY2003</b>	<b>FY2004</b>
Water Delivered, mgd	280.5	270.2	263.0	270.2	263.0
Billed Consumption, mgd (may include some unmetered consumption)	185.8	181.7	178.2	183.4	176.9
Non-revenue Water, mgd	91.9	85.8	84.8	86.7	86.1
Unbilled Consumption, mgd	3.0	2.4	2.5	3.0	2.4
Apparent Losses, mgd	18.6	14.5	13.1	13.3	11.1
Real Losses, mgd	70.1	68.9	69.2	70.5	72.6
Infrastructure Leakage Index, dimensionless	12.3	12.7	13.1	11.9	12.1

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## **2. Leak Detection**

The Leak Detection Survey program operates within the Water Conveyance Section. Summary results of this proactive program are tabulated below.

<b>Table III-10 Leak Survey</b>				
Service Parameter	FY 01	FY 02	FY 03	FY 04
Leak Survey (miles of pipeline)	1690	1313	1421	1160
Leakages Abated (mgd)	27.1	27.7	38.4	35.9

## **3. Meter Management Program**

The Water Department's water meter management program includes two major initiatives: an Automatic Meter Reading (AMR) program and a large meter replacement program, which involves larger meters serving commercial and industrial customers. These two programs are discussed below.

### **a. Automatic Meter Reading Program.**

The Automatic Meter Reading (AMR) project, involving the replacement of all residential water meters, which are generally either 5/8-inch or 3/4-inch meters, with new meters equipped with radio transmitter meter reading devices (ERT/meters) is the largest and most significant water automatic meter reading endeavors to be implemented in the country. This program is substantially complete with 96 percent (about 471,000) residential and commercial customers having AMR capability. The program to replace large meter commercial and industrial customers with AMR is underway and is 78% (13,700) complete. Significant improvements in customer service have already become apparent as a result of this program. The project also provides benefits in the areas of leak detection and theft reduction. Additional benefits of the program include:

- Reduced intrusion into individual homes, resulting in greater customer convenience and security
- Accurate and reliable meter readings
- Fewer customer complaints due to estimated billing
- Improved ability to detect apparent losses, particularly unauthorized consumption
- Long-term savings and revenue improvements

*b. Large Meter Program*

Another successful effort implemented by the Water Department involves the large meter replacement program. Generally, the large meters are defined as those greater than one-inch in size. Approximately 3 percent of all meters fall in this category. Highlights of this program are presented below.

- Meters ranging from one to two-inches in diameter are generally replaced every 10 years in order to maintain accurate registration. Those meters from three to six-inches have a 4-year replacement interval, and those from eight to ten-inches are replaced on a 2-year frequency. This increasing frequency for the large meters assures that they will provide a high accuracy and level of performance.
- A concerted effort of downsizing the over 14,000 large meters in the system has also been undertaken. Approximately 250 meters per year have been downsized on average during the past four years. The large meter replacement program has resulted in benefits to both the customer and the Water Department. Meter downsizing results in a decrease to the customer's monthly water service charge, while replacing misapplied turbine meters with compound meters results in increased registration and related volumetric billings.

**4. Loss Control**

The Water Department has a comprehensive loss control program, overseen by the Water Accountability Committee, a multi-functional team including personnel from the Water Department and the Water Revenue Bureau. Oversight for this program is shared between Water Conveyance managers and members of the Water Accountability Committee. The Water Accountability Committee of the City of Philadelphia exists to promote a high level of efficiency in the water delivery and billing processes and perform the strategic planning necessary to implement lasting improvements in water and revenue loss reduction. The Loss control program strives to reduce the volume of non-revenue water.

Major elements of this program are: compilation of the annual water audit, leak detection and repair crews, disconnecting unused service piping via Discontinuance (D-orders), Revenue Protection Program, reduction of unauthorized fire hydrant use, piloting the use of District Metered Areas, piloting other innovative technology and benchmarking.

Leak detection crews use state-of-the-art technology (leak correlator and correlating leak loggers) to proactively survey water mains. In fiscal 2004, 1160 miles of mains were

surveyed. Survey results pinpointed 216 leaks. An important activity in leak prevention is the disconnection of a vacated water service from the main. In fiscal 2004 the unit performed 2261 disconnects (D-orders).

The Revenue Protection Program focuses on correcting accounts where there is a potential to increase revenues. Each year the program pursues targeted groups of accounts perceived as areas of missed water consumption and billings. For the past three years program focus has been on “zero usage (consumption)” accounts. The chart below summarizes the program results.

<b>Table III-11 Water Recovered</b>		
Fiscal Year	Water Recovered mgd	Revenue Recovered
2000	1.39	\$2,100,000
2001	5.81	\$2,900,000
2002	0.69	\$1,037,000
2003	1.114	\$1,782,000
2004	1.67	\$2,003,000

Reduction of unauthorized fire hydrant use is another Department loss control initiative. The Department’s recent efforts have focused on installing tamper-proof locks (center compression locks CCL) in those areas most susceptible to fire hydrant abuse. Over 54% of the department’ hydrants have locking devices. Hydrant abuse has been drastically reduced. It is the department’s intent to have tamper-proof locks installed on all hydrants in the near future. Program results are summarized below.

<b>Table III-12 Unauthorized Hydrant Use</b>	
Fiscal Year	Unauthorized Hydrant Usage Expressed as mgd
2001	1.873
2002	3.227
2003	3.421
2004	1.022

Benchmarking activities provide beneficial information regarding realistic goals for water losses. In order to assure proper comparisons, the Water Department formats all loss

control information to conform with IWA/AWWA water audit format. This provides the ability to compare department progress with national and international water providers.

Loss control programs are never complete. Future activities will build on successful efforts of the past. Future program initiatives include:

- Participation in American Water Works Association Research Foundation “Leakage Management Technologies” project.
- Utilize the full potential of the proposed Oracle billing system to enhance the management of customer account data.
- Increase staff levels to enhance revenue collections.
- Continue searching for opportunities to establish a warranty program to rapidly repair leaks on customer services connection piping.
- Restructure work order management systems to better track leak categories and repair times.

Further reduce time between leak identification and repair.

- Investigate programs to reduce leakage losses through pressure control.

## **IV. Wastewater System**

### **A. Introduction**

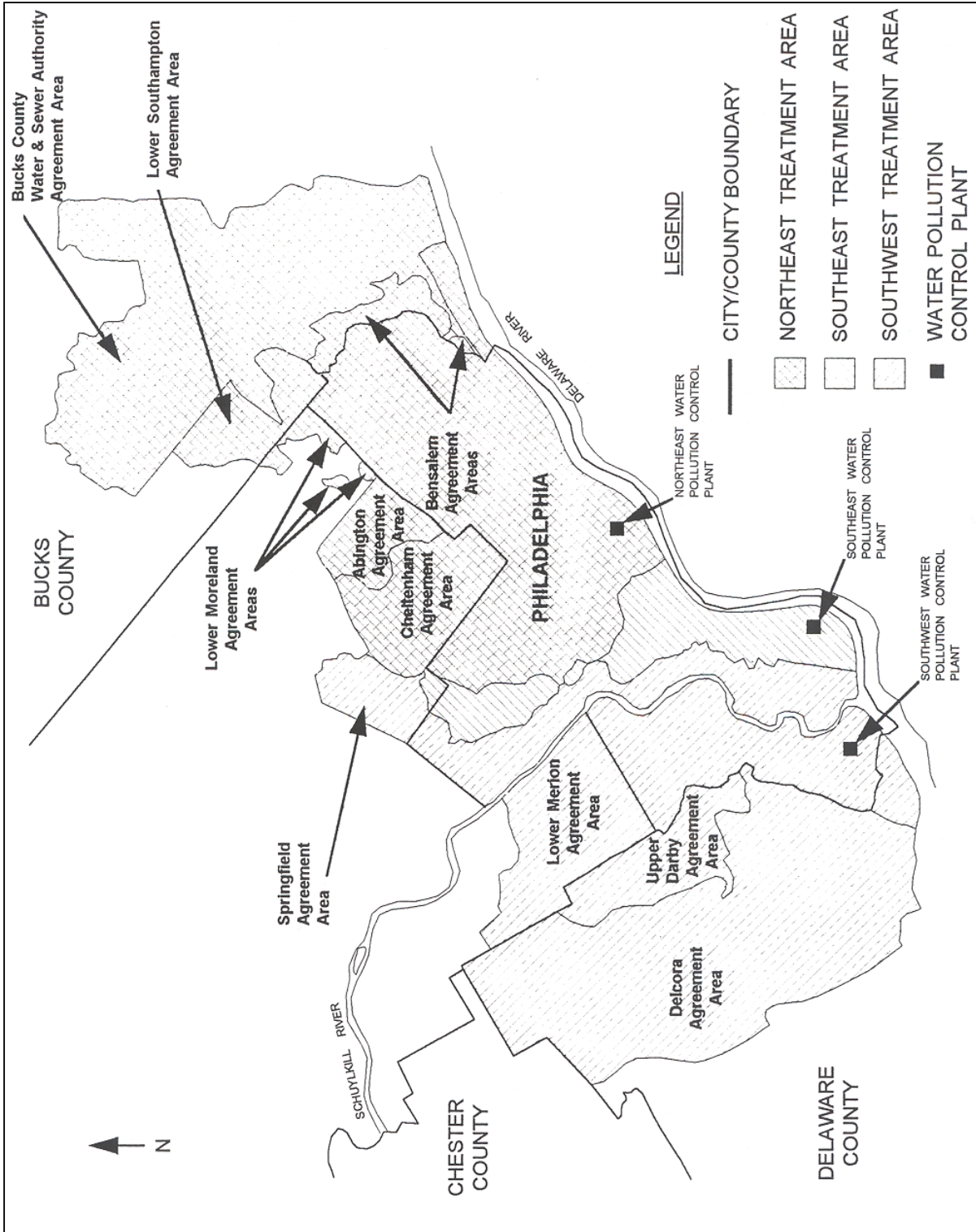
By the end of the Nineteenth Century, Philadelphia had established a Department of Sewerage and had constructed approximately 800 miles of sanitary and storm sewers. In 1923, the Northeast Water Pollution Control Plant (WPCP) went into service with a capacity of 60 mgd. From that point until the mid-1940s, most expenditures were for collection and transmission facilities rather than for treatment works. It was not until 1946 that wastewater service charges in the City provided the means of financing the modernization of the original Northeast plant and the eventual construction of the original Southeast and Southwest plants as primary treatment facilities in the 1950s. The three wastewater treatment plants were upgraded in the 1970s and 1980s to provide secondary treatment. Construction of the Biosolids Recycling Center (BRC), formerly the Sludge Processing and Distribution Center (SPDC), which manages sludge produced from all three treatment plants, was subsequently completed in 1989.

### **B. Wastewater System Overview**

The Philadelphia Water Department's wastewater system currently serves the City of Philadelphia, and parts of Bucks, Montgomery, and Delaware Counties. According to the 2000 federal census, the total service area population is approximately 2,218,000, including approximately 1,518,000 people within the City and 700,000 in the outlying municipalities. The service area population is distributed over 360 square miles, with 230 square miles in suburban communities and 130 square miles in the City.

The wastewater collection system consists of approximately 3,000 miles of sewers, 16 pumping stations, 85,000 manholes, 175 combined sewer regulating chambers, 89 tide gates, 25 storm relief structures, 75,000 stormwater inlets, and 23 metering chambers to monitor flows from surrounding townships. There are 585 miles of sanitary sewer, 620 miles of storm sewer, 1595 miles of combined sanitary and storm sewer, and 135 miles of major interceptor sewer that convey wastewater to the treatment plants. A total of 20 miles of outfalls also exist. The sewers range in size from 8-inch diameter to 21 feet by 24 feet arch-shaped conduits, and are constructed of brick, vitrified clay or reinforced concrete.

The wastewater system is divided into three drainage districts, each served by a treatment plant as indicated in Figure 3 on the following page.



**Figure 3 – Wastewater Service Areas**

Wholesale suburban customer wastewater treatment contractual limits and average daily flows in fiscal year 2004 are as follows:

<b>Table IV-1 Suburban Flows to WWTP's</b>		
	<b>Annual Average Daily Flow Maximum (mgd)</b>	<b>Average Daily Flow in Fiscal Year 2004 (mgd)</b>
Northeast Plant	56.1	39.3
Southeast Plant	1.0	0.6
Southwest Plant	<u>84.7</u>	<u>54.1</u>
Total	141.8	94.0

Parts of Bucks and Montgomery Counties contribute to the Northeast plant; parts of Montgomery and Delaware Counties contribute to the Southwest plant; and Springfield Township of Montgomery County contributes to the Southeast plant.

Since June of 2003, Bucks County Water and Sewer Authority (BCWSA) has been delivering wastewater to the Water Department in excess of its annual daily contractual limit of 20 MGD. The parties filed for arbitration on this issue as provided in the wholesale service agreement. On March 11, 2005 an agreement was executed by the Water Department and Bucks County Water & Sewer Authority to resolve flow exceedance and other issues. The settlement provides for two payments to the Water Department. The first payment will be made on May 30, 2005 in the amount of \$ 9.0 million; a second payment of approximately \$ 9.6 million will be made on August 1, 2005. In return, the Water Department will agree to increase BCWSA's annual daily flow limit from 20 MGD to 24 MGD. Further the Water Department agrees to lengthen the term of the current contract by 15 years, thus extending it to the year 2038.

The Water Department has been serving Delaware County Regional Authority (DELCORA) under a thirty year agreement to provide 50 MGD of wastewater treatment capacity at its Southwest Water Pollution Control Plant. Fiscal year 2004 revenues under this agreement were approximately \$ 6.8 million. The long term agreement recently expired and the Water Department has continued to serve DELCORA under an extension to the agreement. Currently the Water Department and DELCORA have agreed to extend the current agreement to July 31, 2005 while the parties negotiate a revised service agreement.



A small additional flow and load contribution is from septage haulers. Tincum Township may send its sludge to Southwest Plant in the near future. The Water Department is looking for other opportunities to utilize its excess capacity to generate revenue.

## **C. Awards**

### **1. Water Pollution Control Plants (WPCPs)**

The three WPCPs have been operating regularly with an outstanding performance record. In recognition of this performance, all three plants have been granted Gold or Silver Awards by the Association of Metropolitan Sewerage Agencies (AMSA) on an annual basis. To be eligible, a Gold Award requires that no NPDES permit violations be assessed to the treatment facility for an entire year, while a Silver Award requires that no more than five NPDES permit violations be assessed to the treatment facility for the year. The recent record of AMSA awards received by Philadelphia's three WPCPs is summarized below.

- *Southwest WPCP* – Has been awarded consecutive Gold Awards from 1995 through 2001, a Silver Award in 2002 and Gold in 2003 and 2004.
- *Northeast WPCP* – Has been awarded consecutive Gold Awards from 1997 through 2003. The Northeast Plant did not receive an AMSA award for 2004, the first time in 10 years. During December of 2004 the plant received an influent load of an undetermined toxic substance, negatively impacting the plants secondary system and ultimately the plant effluent for nearly two weeks. The resulting permit violations for the month disqualified the plant from receiving an AMSA award despite 11 prior months of perfect compliance.
- *Southeast WPCP* – Will be awarded the AMSA Platinum Award representing zero NPDES permit violations for calendar years 2000-2004.

### **2. Collectors System**

As part of the National Clean Water Act Recognition Awards Program, the Water Department received the Combined Sewer Overflow Control Program Excellence award for 2003.

## **D. Wastewater Treatment Plant Discharge Limits.**

As the owner and operator of three publicly owned treatment works that discharge into the navigable waters of the United States, which are also water bodies of Pennsylvania, the Water Department must assure that the effluent from these treatment works meets federal secondary treatment standards, other DRBC standards, and does not violate the NPDES

permit issued for each of the three plants by the PaDEP in conjunction with US EPA Region III. Additionally, the Water Department must comply with PaDEP regulations which control operation of wastewater plants and DRBC regulations related to discharges to the Delaware River.

NPDES permits for the Northeast, Southeast, and Southwest WPCPs became effective August 2000. Current NPDES permits for the Northeast, Southeast and Southwest WPCPs were issued on July 7, 2000, became effective on August 1, 2000 and will expire July 7, 2005. These permits with PaDEP provide flexibility to treat additional flows resulting from efforts to control combined sewer overflows. Applications for all three plant NPDES permit renewals have been submitted to PaDEP in anticipation of new permits being issued in August 2005.

These permits will remain in effect for a five-year period. The current NPDES permit limitations are included in Table IV-2. The permits are designed to enable PaDEP to utilize them as a single source document in review of the wastewater system status. Key components of the permits and several of the more significant changes that have been negotiated with these permits are summarized below.

- *Industrial Pretreatment Program.* The Water Department will need to re-evaluate its local limits. The schedule calls for the local limits re-evaluation to be completed within one year of the permit issuance date. The new permits also mandate annual reporting as part of the Chapter 94: Municipal Wasteload Management Report.
- *Carbonaceous Biological Oxygen Demand (CBOD).* The permits governing effluent discharges from the Northeast and Southwest WPCPs have replaced monitoring and reporting of the standard biological oxygen demand (BOD) parameter with that of CBOD.
- *Chronic Whole Effluent Toxicity Testing.* Sampling and analysis for Whole Effluent Toxicity (WET) shall be performed quarterly for permit years one and two, and annually for the remaining three years of the permit. Long-term, the data may yield toxicity units from which numerical effluent limits can be developed and incorporated into future updates of the plant NPDES permits..
- *Chlorine Minimization.* All three wastewater treatment plants have now replaced gaseous chlorine with liquid sodium hypochlorite as a primary disinfectant. The focus of this program is to reduce chlorine dosages used

for disinfection, thereby minimizing the chemical's toxic effects on the receiving waters while simultaneously maintaining NPDES discharge limits. The permit calls for total residual chlorine (TRC) effluent concentrations to be at or below 1.0 mg/l for permit years 1 and 2. TRC levels for permit years 3, 4 and 5, shall be reduced to 0.2 mg/l at the Southeast and Southwest WPCPs, and 0.3 mg/l at the Northeast WPCP.

Depending upon the plants' capability to meet these stricter limits, implementation of dechlorination systems may be required in the future. It is noted that while the TRC effluent concentration has been reduced, the new permits have also removed the previously permitted requirement which prohibited TRC effluent concentration levels of 1,000 coliform colonies per 100 milliliter sample in more than 10 percent of samples tested. That requirement would have made it substantially more difficult to comply with the new TRC limits without the addition of dechlorination facilities.

- *Sludge Dewatering Summary Report.* This report is included in the NPDES discharge permit reporting obligation. The report includes statistics on sludge flow to the Biosolids Recycling Center as well as the quantity of sludge processed.
- *Management and Control of Combined Sewer Overflows (CSOs).* The NPDES permits include specific requirements for control of CSOs within the respective watershed areas served by the three WPCFs and also broader City-wide requirements, briefly described as follows:
  - The permits identify the locations of the CSO outfalls and control structures within the plant watershed areas and require reporting of all operations, maintenance, and inspection efforts undertaken at these structures. Increased emphasis has also been placed on reducing the frequency and volume of untreated sewage discharge through the CSOs. This requires the WPCPs to treat more flows during wet weather events. However, the permits recognize the WPCPs' maximum design rated hydraulic capacities and allow for less stringent calculation and reporting of mass loading and effluent concentrations when total daily flows exceed these maximum rated hydraulic values.
- The permits also specify other CSO control requirements that meet both technology and water quality based standards in accordance with the Clean Water Act. To meet this set of requirements, the Water Department, in its annual Chapter 94 Report, must demonstrate: 1)

continued implementation and compliance with both the nine minimum controls (NMC), and 2) implementation of the CSO Program's Long Term Control Plan (LTCP), dated January 24, 1997. The LTCP identifies additional control of CSOs to be implemented in three phases. Phase I is the implementation of the nine minimum controls (NMC), which have been approved by PaDEP and is underway. Phase II addresses capital improvement projects that will further increase the capture of CSOs, thereby decreasing CSO discharges and improving receiving water quality. Phase III is based on watershed based planning and management of CSOs. Watershed planning and management is expected to identify long-term improvements throughout the watersheds, resulting in even greater water quality improvements and ultimately, the attainment of water quality standards. The three steps comprising Phase III are; Step 1 - Preliminary Reconnaissance, Step 2 - Watershed Work Plan and Initiative, and Step 3 -Watershed Plan Implementation. Steps 1 and 2 were completed in 2004. Completion of Step 3 is dependent on the program elements and outcomes of the first two steps.

The DRBC's toxic impact study on the Delaware River is still ongoing. This study will also evaluate wasteload allocations from various discharges, including the three Water Department wastewater treatment plants. Although the results of the study are presently not available, the Water Department could possibly be required to meet stricter limits on several chemical pollutants. Consequently, this could also lead to more stringent pretreatment regulations by the Water Department on its industrial and commercial customers. However, the full impacts on the Water Department's operations will not be known until the DRBC report is finalized. It is the Water Department's understanding that there will be no limits for PCBs in the new wastewater permits, but there will be a direction for best management practices to reduce the pounds of PCBs going to the river.

**Table IV-2 Current NPDES Effluent Limitations**

<u>Effluent Characteristic</u>	<u>Discharge Limitation</u> (Average Monthly)
CBOD <sub>5</sub> (mg/l)	25 <sup>(1) (2)</sup>
CBOD <sub>5</sub> (lbs/d)	36,430 <sup>(1)</sup> , 19,800 <sup>(2)</sup>
CBOD <sub>5</sub> (% removal)	86 <sup>(1)</sup> , 89.25 <sup>(2)</sup>
CBOD <sub>5</sub> (% removal at flows > MDF)	See footnote 5
BOD (mg/l)	30 <sup>(3)</sup>
BOD (lbs/d)	19,650 <sup>(3)</sup>
BOD (% removal)	86 <sup>(3)</sup>
BOD (% removal at flows > MDF)	See footnote 6
TSS (mg/l)	30
TSS (lbs/d)	52,540 <sup>(1)</sup> , 50,040 <sup>(2)</sup> , 23,025 <sup>(3)</sup>
TSS (% removal)	85
TSS (% removal at flows > MDF)	See footnote 7
pH	6-9
Fecal Coliform	200/100 ml <sup>(4)</sup>
Total Residual Chlorine (permit years 1 & 2)	1
Total Residual Chlorine (permit years 2, 3 & 5)	0.3 <sup>(1)</sup> , 0.2 <sup>(2)</sup>
Average Monthly Flow - AMF (mgd)	monitor/report
Maximum Daily Flow – MDF (mgd)	monitor/report
Maximum Daily Flow – MDF recognized for calculating % removals at high flow day events (mgd)	315 <sup>(1)</sup> , 300 <sup>(2)</sup> , 168 <sup>(3)</sup>

<sup>(1)</sup> Northeast WPCP  
<sup>(2)</sup> Southwest WPCP  
<sup>(3)</sup> Southeast WPCP  
<sup>(4)</sup> Geometric mean  
<sup>(5)</sup> If a calendar month includes one or more days where flows exceed the MDF, a value of 86 % and 89.25 % respectively at the Northeast WPCP and the Southwest WPCP may be used for those days for calculating CBOD<sub>5</sub> percent removal.  
<sup>(6)</sup> If a calendar month includes one or more days where flows exceed the MDF, a value of 86 % at the Southeast WPCP may be used for those days for calculating BOD percent removal.  
<sup>(7)</sup> If a calendar month includes one or more days where flows exceed the MDF, a value of 85 % may be used for those days for calculating TSS percent removal.

mg/l    milligrams per liter  
 ppd    pounds per day  
 mgd    million gallons per day  
 CBOD<sub>5</sub>    Carbonaceous Biological Oxygen Demand  
 BOD    Biochemical Oxygen Demand  
 TSS    Total Suspended Solids  
 AMF    Average Monthly Flow  
 MDF    Maximum Daily Flow

## **E. Storm Water Permit**

The Water Department was issued its first NPDES Phase I storm water permit in September 1995, by PaDEP. This permit had a 5-year term that expired in September 2000. The Water Department applied for a new permit in March, 2000 as required. At this time, PaDEP and the department are in the midst of finalizing a new stormwater permit, which is expected to become effective in 2005. Among other requirements, the permit requires the Water Department to reduce storm water based pollution of natural streams, creeks and rivers, from (1) residential and commercial areas, (2) construction sites, (3) industrial sites, and (4) illicit connections.

An application for the renewal of the NPDES Stormwater Permit that expired in 2000 is currently under consideration by the PA DEP. The new application continues the provisions of the original permit. Additional language has been provided in the application to mirror the scope of the completed Consent Order (July 98).

It is envisioned that the new stormwater permit will have two major components; continue elimination of illicit connections and erosion control for developers. In March 2004, an agreement was made with PaDEP for correction of illicit connections. It is noted that the Water Department complies with the permit's quarterly and annual reporting requirements.

## **F. Clean Air Act**

The Federal Clean Air Act, as amended (the "Clean Air Act", CAA) sets forth requirements for the regulation of certain air emissions. In January 1994, the PaDEP published regulations pursuant to the Clean Air Act's mandates for the control of VOC and NOx emissions from major stationary sources. These regulations required, in part, that all sources of VOC and NOx quantify their emissions.

The CAA also required the development of a Risk Management Plan (RMP) for all Water Department facilities where regulated substances (chlorine, ammonia, methane) are stored. The RMPs are designed to minimize the impact of a process accident on the surrounding community. Risk Management Plans were prepared and submitted for each facility. Because of the replacement to sodium hypochlorite, RMPs are no longer required.

In June 2001, Title V major source operating permits were issued to the Northeast WPCP and the combined site of the Southwest WPCP and the Biosolids Recycling Center.

The Title V permits require bi-annual reporting for NOx and VOC emissions. Together with its Title V permits, the Water Department reports on its RMP program activities, including training and evacuation and response drills.

Section C, Facility Wide Requirement of the Title V permits, also contains requirements regarding odor emissions. Any detection of a malodorous air contaminant outside the facility property line must be reported. Permit requirements consist of monitoring and reporting. No limitations are stipulated. There were no odor violations reported with the Water Department's first Title V Operating Permit Monitoring Report submitted in July 2001.

During Calendar Year 2004, one odor violation was issued at the SW/BRC facility and three violations at the Northeast facility. Due to the odor incidents, the Water Department has hired a consultant to assist in the development of a long-term odor control strategy. In the short-term the Water Department has budgeted over \$3.5 million in 2005 for the addition of odor control chemicals. The Water Department believes it has identified a major source of the odors and is working with a discharger to correct this problem. The Water Department has worked closely with AMS in developing their Odor Response Plan (which is part of the permit) and this plan is implemented whenever odors are detected. The Water Department continues to operate its facilities in a manner that maximizes treatment while minimizing odors.

## **G. Northeast WPCP**

### **1. Capacity**

The Northeast plant serves northeast Philadelphia and suburban areas in southeast Bucks and eastern Montgomery counties. The plant is sized for a design average flow of 210 mgd and a peak flow of 420 mgd. Future plans call for the treatment of more flow during storm conditions. In order to accept more flows beyond 420 mgd, two hydraulic bottlenecks will need to be eliminated. Capacity between the preliminary treatment building and the primary tanks and between the final tanks and the chlorine contact tanks will need to be increased.

During fiscal year 2004, the plant treated an average flow of approximately 191 mgd. Plant performance is normally well below permit limits. Effluent concentrations are normally at or below 10 mg/l for CBOD and TSS. Total Residual Chlorine (TRC) levels are also below permit requirements.

## **2. *Liquid Stream Process***

The facility consists of a preliminary treatment building providing screening, influent pumping and grit removal; primary clarifiers; aeration basins; final clarifiers and disinfection. In October 2003, the Northeast was delisted from the Risk Management Plan “RMP” requirements because sodium hypochlorite disinfection was permanently brought on-line eliminating the need for liquid chlorine.

Sludge from the Baxter Water Treatment plant is discharged to the Northeast plant. The characteristics of this sludge reduce available phosphorous for the activated sludge process. Therefore, phosphoric acid is added to assure proper nutrient levels are maintained.

Key activities or improvements that have recently been made or are currently in progress include the following:

(1) Projects recently completed:

- Replacing the existing gaseous chlorine disinfection system with a new sodium hypochlorite system
- Rehabilitating final settling tanks 1-6
- Rehabilitating variable frequency drives (VFDs) for return sludge pumps in final settling tanks

(2) Projects either planned or ongoing include:

- Rehabilitating the secondary treatment aeration system: this will allow for more efficient use of air and better control of the secondary treatment system. The project is under construction.
- Bar screen replacement - Low Level Sewers. Installation of climber screens in five of the six low level channels is complete. The remaining low level bar screen is currently being replaced under contract. The replacement of the two high level bar screens will then follow under the same contract.
- Provide New Conduit from PTB to Set 2 Primary Tanks - planned for FY 2007.

## **3. *Sludge Stream Process***

Sludge treatment is provided by dissolved air flotation (DAF) thickening of waste activated sludge (WAS) and anaerobic digestion of combined primary and thickened waste activated sludge. Digested sludge is delivered by gravity to two transfer tanks. Approximately once daily, the sludge from these tanks is discharged to barges and transported to the Biosolids Recycling Center (BRC) for final processing. Key activities or



improvements that have recently been made or are currently in progress include the following:

- (1) Projects recently completed.
  - Digester gas piping replacement
  - Replace sludge heat exchangers
  - A closure plan for the existing sludge lagoons has been submitted to PaDEP. Other than groundwater sampling, no major capital expenditures are likely.
- (2) Projects planned for FY 2006 include:
  - Replace existing sludge pumps and valves on barges
  - Gas tank inspection and bladder replacement

#### ***4. Facility and Utility Maintenance Projects***

Recently completed and planned facility and utility maintenance projects are reported below.

- (1) Projects recently completed.
  - Masonry repairs and new roof installation for the PTB
  - Replacement of natural gas main
- (2) Projects planned for FY 2006 include:
  - Elimination of street drains to effluent conduit
  - Replace Blower Building switchgear

#### ***5. Operation and Maintenance***

A process computer system is currently used for monitoring certain plant processes and for computing various process trends. This system is currently being upgraded. The first phase of upgrades is completed and the second stage is planned for FY 2006. The following unit processes are automated: influent flow splitting to the primary tanks, return sludge, hypochlorite disinfection, digester feeding, and portions of the dissolved air flotation thickening system. Future plans call for the automation of the aeration tanks and the remainder of the dissolved air flotation thickening system. Operators are assigned responsibility for key plant facilities with dedicated operator stations. The stations are equipped with computer monitors which assist the operator in making process control decisions. Recent work has made process and lab data more available via web based reporting. Trending and analysis of data has been greatly enhanced. An on-site process control laboratory is also used to check and optimize plant operation.

Maintenance management is facilitated by the computer program (MAXIMO). This Computer Maintenance Management system (CMMS) is a Department wide initiative. This program is being used to organize all plant maintenance activities and to help staff emphasize predictive and preventive maintenance. Currently, planned maintenance accounts for approximately 75 percent of all the work orders.

The status of plant tankage, conduits, buildings and structures is tracked through the Capital Facilities Assessment Plan (CFAP). The CFAP identifies critical assets within the plant that need to undergo detailed inspection. Asset identification is now underway.

The Northeast WPCP is operated seven days per week, three operating shifts daily. Approximately 110 (132 authorized) total staff, including administrative, operations, and maintenance personnel are employed at the Northeast plant. There are two certified operators. Currently, there are 22 vacant positions. Vacancies in the electrical and HVAC trades are considered the most critical. Electrical maintenance needs are being met on an interim basis by sharing staff between the plants and the biosolids recycling center.

Other significant Operation and Maintenance programs are detailed below:

- The chlorine minimization program continues. This program has resulted in both cost savings and water quality benefits.
- Newly installed digester gas lines have allowed for more digester utilization for building heat and a reduction in overall gas/fuel oil purchases.
- A newly installed density meter is being used to control primary sludge pumping. Per cent solids for the primary sludge is trending upward (from 4.5% Total Solids (TS) to 4.6% TS). The thicker primary feed to the digesters is resulting in a slightly higher percent solids for digested sludge solids sent to the barge (2.2 %TS to 2.3%TS).
- Plans call for providing additional operator training in wastewater plant operation.
- Subsequent to commissioning sodium hypochlorite disinfection, the plant has de-registered from Risk Management Plan requirements associated with handling gaseous chlorine.

**6. Odor Issues**

The Water Department continues its long standing commitment to managing odor emissions at the Northeast facility. In fiscal 2004 the plant received 4 odor violations. Odor violations by fiscal year are detailed below:

Fiscal Year	1999	2000	2001	2002	2003	2004
Violations	13	7	4	7	12	4

The Department has strengthened its odor minimization program. Some highlights of the Department’s program appear below:

1. Plant staff continues their proactive approach to minimizing odors and to address odor complaints quickly.
2. Plant staff strives to maintain a good rapport with the neighboring community and with AMS staff.
3. Routine Odor Committee meetings are held to review odor data, reports and protocol related to corrective action taken to eliminate off-site odor. Some of the programs resulting from the work of the Odor Committee include:
  - Community outreach.
  - Seasonal adjustments to process control variables to minimize odor.
  - The creation of standard operating procedures focusing further on odor control.
  - Continuous use of an odor reducing chemical(sodium permanganate)
  - Development of an Odor Control Master Plan via an outside consultant.
  - Utilization of university researchers in guiding the odor control strategies.
4. All research to date indicates that the major cause of odor is the breakdown at the plant of dimethylsulfoxide (DMSO) into dimethylsulfide (DMS). A local manufacturer is the source of the DMSO. The Water Department is working with the industry to reduce the spikes and total quantity of DMSO. Sodium permanganate continues to be used to eliminate plant odors. Chemical costs for odor abatement were in excess of 2,000,000 in FY 04.

## **7. Cogeneration System**

As part of its efforts to lower power costs and conserve energy, the Water Department developed a cogeneration facility on the Northeast plant site in 1993. A similar facility is in operation at the Southwest WPCP. Both cogeneration facilities are operated and maintained under a 20-year contract by Calpine Philadelphia, Inc., a subsidiary of Calpine Eastern Corporation.

The Cogeneration facility utilizes excess digester gas and generates electricity. In fiscal year 2004, the facility utilized 145,860 scf/day of digester gas and generated approximately 5600 kwh/day for plant use.

The Northeast and Southwest facilities are subject to Philadelphia Electric Company's (PECo) "Interruptible Rate" tariff. This rate is considerably lower than the "High Tension" tariff and also does not have a demand charge. The cogeneration facility includes a standby electric generating facility comprised of diesel-powered generators with a capacity of 10 megawatts, which is approximately equal to the plant load. Calpine operates these standby facilities whenever utility electrical power service is curtailed to the treatment plants.

## **H. Southeast WPCP**

### **1. Capacity**

The Southeast WPCP service area includes the eastern portion of Center City, the eastern portion of South Philadelphia, a portion of North Philadelphia, the majority of Kensington/Richmond, and the central portion of Germantown/Chestnut Hill. The Philadelphia Naval Base and a small portion of Springfield Township in Montgomery County are also served by the Southeast WPCP, which receives approximately 19 percent of the wastewater flow in the City's total service area.

The Southeast plant was built in 1955 to provide preliminary and primary treatment for domestic and industrial wastes. Modifications and additions since 1983 have upgraded the plant to a full secondary treatment facility. The plant provides treatment for an average annual design flow of 112 mgd and a peak flow of 224 mgd. The average daily flow to the plant in fiscal year 2004 was 91 mgd. Plant performance is excellent. Effluent concentrations of less than 10 mg/1 for BOD and TSS are consistently achieved. Total residual chlorine levels are also below permit requirements. In FY 2004, there were no odor complaints.

## **2. *Liquid Stream Process***

Plant facilities include: influent pumping, bar screens, grit removal, pre-aeration, primary clarifiers, air activated sludge process in covered aeration basins, final clarifiers, chlorination, and effluent pumping.

Since 1996, lower than design secondary system organic loadings have allowed plant staff to operate the secondary system without the existing cryogenic oxygen generation facility. The system is now operated in an air activated sludge mode, using the mechanical aerators and blowers for aeration.

Sludge from the Queen Lane Water Treatment plant is discharged to the Southeast plant. The characteristics of this sludge reduce available phosphorous for the activated sludge process. Therefore, phosphoric acid is added to assure proper nutrient levels are maintained.

A number of process and operations programs have been instituted which have resulted in substantial cost reduction and safer operation. Some of these modifications are presented below:

- A chlorine minimization program has been underway for several years. This program has resulted in both cost savings and environmental benefits.
- In March 2002 liquid chlorination was eliminated. Risk Management Planning and all associated activities have been greatly reduced.
- The operation of the secondary treatment process on atmospheric air rather than cryogenic oxygen continues to save electrical power (approximately \$53,000 per month). The program also reduces the maintenance requirements and the need for specialized technical service contracts.
- Energy Management initiatives such as off-peak operation, load shedding, and energy efficient lighting continue to save energy.
- On line analyzers for phosphorous, return activated sludge and mixed liquor suspended solids allow for more precise process control and reduction of chemicals.

Other projects completed, ongoing or planned at the Southeast plant include the following:

- Primary sludge transfer pump replacement project - complete
- Rehabilitation of Aeration Tank Controls - complete
- Replacement of Influent Pump Controls - complete
- Installation of a new distributed control system - complete

- Modifications to the rotating scum pipes on the final clarifiers - substantially complete
- Replacement of actuators and telescoping valves on the final clarifiers - multi year project 80% complete
- Evaluation of Sludge Force Mains – camera inspection of river crossing found no significant issues. In FY 2005 will inspect for pipe thickness.
- Permanent sodium hypochlorite facilities - scheduled for completion FY 2005
- Primary tank chain and flight replacement-in projects control
- HVAC Rehabilitation Southern Buildings - in projects control
- Rehabilitation of influent pumping station crane-in projects control
- Expansion joint repairs in gallery - in projects control
- Remove cryogenic oxygen generation system - in design
- Modify scum transport from Concentration building - in design
- Repairs to Chlorine Mixing Chamber and New Mixers - under design
- Rehabilitation of Grit and Screening Handling System - under design
- Renew Electrical Gear Access Buildings 5 & 6 – design underway

### **3. *Sludge and Scum Stream Process***

Primary sludge is pumped to a wetwell in the sludge pumping station by pumps located in sumps at the primary clarifiers. Waste activated sludge is pumped to sludge storage tanks. Separate sludge transfer pumping systems are provided for primary and waste activated sludge. Two eight-inch force mains convey the sludge to the Southwest WPCP for processing. Both systems are located in the pump room of the sludge pumping station.

Scum and grease from the primary and secondary clarifiers is pumped to scum concentration tanks. The scum is collected and transported to the Southwest plant for separate processing and ultimate disposal to a landfill.

### **4. *Operation and Maintenance***

The plant administration building contains the general service offices, laboratory, and a Process Control Center (PCC). The PCC houses a digital computer and operator interface equipment. The PCC operator has unit process CRT graphic displays available at the Central Computer Console. The computer can control the influent and effluent pumping stations, primary sludge pumping, final clarifier scum collection, return and waste activated sludge and disinfection systems. The laboratory houses equipment to evaluate plant biological and chemical processes and to generate regulatory reports. A maintenance management system,

known as MAXIMO, is utilized to plan, schedule and track all maintenance activities for process equipment. Planned maintenance work is averaging approximately 84 percent of the total maintenance work orders. The Southeast plant has a predictive maintenance program that includes equipment vibration testing, oil analysis and infrared testing of electrical equipment.

The status of plant tankage, conduits, buildings and structures is tracked through the Capital Facilities Assessment Plan (CFAP). The CFAP identifies critical assets within the plant that need to undergo detailed inspection. Assets are cataloged, and inspections are programmed over a ten year period. The MAXIMO system is used to generate inspection work orders. Results of facility inspections are used in the capital planning process.

The plant operates continuously and has an authorized staffing level of 68. There are 3 certified operators. There are 9 vacancies. Currently there is a need to fill semi skilled laborer and clerical positions. With the advances of technology, future staff needs will revolve around recruiting and retaining electrical and instrumentation staff.

## **I. Southwest WPCP**

### **1. Capacity**

The Southwest WPCP serves the western portions of Philadelphia and areas in eastern Delaware and southeastern Montgomery counties. The Southwest plant was built in 1954. In the 1970's the plant was expanded and improved to handle a 200 mgd average annual design flow and a 400 mgd peak flow. Future plans call for the treatment of more flow during storm conditions. In order to accept more flows beyond 400 mgd, a variety of hydraulic bottlenecks will need to be eliminated. The most limiting bottleneck is between the primary clarifiers and aeration basins. Options to resolve this limitation include the construction of a bypass channel or to provide intermittent pumping. Another key to increasing the plant's hydraulic capacity, is the potential modification of the plant's Influent Pumping Station. The Water Department's Office of Watersheds has identified a storm flow strategy that could deliver a significant amount of flow to the pumping station.

During fiscal year 2004, the plant treated an average of 193 mgd. Plant performance is well below permit limits. Effluent concentrations are consistently below 10 mg/l for CBOD and TSS. Total Residual Chlorine (TRC) levels are also below permit requirements. In fiscal year 2004 the plant had no odor violations.

## **2. *Liquid Stream Process***

The plant processes include: influent pumping, screening, grit removal, pre-aeration/flocculation, primary clarification, secondary treatment using pure oxygen activated sludge, secondary clarification, effluent pumping, and disinfection.

The Southwest plant also receives water plant sludge from the Belmont facility and is the only plant to receive septage. The septage receiving program is monitored by the on-site laboratory and the Industrial Waste unit.

Key improvements that have recently been completed, are currently in progress, or are planned include the following:

### Completed Projects

- Influent pump station screw pumps – replaced all upper and lower bearings
- Installation of hypochlorite day tank for plant water system
- Replacement of scum collection equipment in the final tanks
- East final tanks preventive maintenance - 2004, West side – 2003
- Painting Cryogenic Facilities

### Ongoing Projects

- Replacing hydrogritter assemblies
- Replace return sludge pumps
- Rehabilitation of primary tank collection equipment
- Replacement of waste activated sludge line
- Cryogenic Plant Main Air Compressor - inspect/rehabilitate rotating assemblies

### Planned Projects

- Rehabilitate final tank collection equipment
- Rehabilitate primary tank electrical system
- Rehabilitate plant water electrical system
- Rehabilitate piping and controls - LOX storage facilities
- Motor control center primary tank #1 -install PLC

## **3. *Sludge Stream Process***

Waste activated sludge (WAS) from the Southwest plant is combined with WAS from the Southeast plant in mixing Chamber No. 1 and sent to DAF tanks for thickening. The DAF thickened WAS is combined with primary sludge from both the Southwest and Southeast plants in Mixing Chamber No. 2. From there, the blended sludge is delivered to



the digesters. After digestion, the sludge overflows into a sump where it is pumped to the BRC.

Key improvements that have recently been completed or are ongoing are included below.

#### Projects completed

- Installation of six new digested sludge pumps
- Overhaul DAF tanks #2, #4 and #6
- Installation of new VFDs for sludge gas compressors #1 and #2
- Installation of new VFDs for digested sludge pumps

#### Projects Ongoing

- Digester cleaning
- Sludge lagoon closure plan. Report to PaDEP under development. Other than groundwater monitoring, no major capital expenditures are likely.

### **4. Facility and Utility Maintenance Projects**

Ongoing facility and utility maintenance projects are reported below.

- Rehabilitate plant side HVAC systems
- Update plant phone system

### **5. Operation and Maintenance**

The plant is continuously operated seven days per week. Approximately 113 (129 authorized) total staff, including administrative, operations, and maintenance personnel are employed at the Southwest facility. There are 3 certified operators. Currently, there are 16 vacant positions. Most of the vacancies are for semi-skilled laborers. In the future, the hiring and retaining of computer literate electricians and electronic technicians will become a major challenge.

Main control of the plant is performed by the operating staff. Operators are assigned responsibility for key plant facilities with dedicated operator stations. The stations are equipped with computer monitors to assist the operators make decisions regarding process control. The process control computer system has recently been upgraded. The system monitors all unit processes and currently controls:

- aeration tank oxygen feed
- return sludge pumping
- activated sludge wasting
- secondary scum collection

- effluent hypochlorite dosing
- effluent pumping station
- digester tank feeding
- dissolved air flotation thickening

An on-site process control laboratory is used to check operating parameters. The process engineering staff analyzes data, determines operating set points, and establishes operating procedures.

Plant staff is utilizing a computerized maintenance management system (MAXIMO) to plan and schedule all maintenance activities. For fiscal year 2004, 85% percent of the maintenance work orders were planned. An aggressive predictive maintenance is also practiced by the plant staff. All information obtained from the predictive maintenance activities is loaded into the computer to build upon the equipment history database. Predictive maintenance tasks include oil analysis, vibration analysis and infrared thermography.

The status of major plant infrastructure, including all tanks, conduits and buildings is tracked through the Capital Facilities Assessment Plan (CFAP). The CFAP identifies critical assets within the plant that need to undergo detailed inspection. Assets are cataloged, and inspections are programmed over a ten year period. The MAXIMO system is used to generate inspection work orders. Results of facility inspections are used in the capital planning process.

In December 2003, an uncontrolled discharge from the Philadelphia Airport (deicing operation) caused a single NPDES permit violation. Subsequent department intervention and monitoring has resulted in reducing peak loads. Plant effluent quality has since returned to its award winning level.

Plant staff are evaluating the feasibility of operating the plant without the current oxygen producing facility. If current loads remain constant (no additional organic loading from the deicer operation for example) cryo shut down or oxygen plant downsizing would be possible.

A chlorine minimization program has been underway for several years. This program has resulted in both cost savings and environmental benefits.

Standard operating procedures have been recently updated. Areas of updating included plant water, grit removal and an alternative operating scenario where air would be used in the aerators, when pure oxygen is not available.

Plant staff have provided raw sludge samples to Changing World Technologies. They are reviewing the feasibility of converting sludge into valuable natural resources such as oils, gases and carbon.

## **6. Cogeneration System**

Similar to the cogeneration facility developed at the Northeast plant site, in 1993 the Water Department also contracted the installation and operation of a cogeneration facility at the Southwest plant. Due to the availability of this standby power, the Northeast and Southwest facilities are subject to Philadelphia Electric Company's (PECo) "Interruptible Rate" tariff. This rate is considerably lower than the "High Tension" tariff, as a fixed demand is used in determining the billed charges. The cogeneration facility includes a standby electric generating facility comprised of diesel-powered generators with a capacity of 10 megawatts, which is approximately equal to the plant load. Calpine operates these standby facilities whenever utility electrical power service is curtailed to the treatment plants.

Southwest flares all digester gas not used for plant heating purposes. Currently, none of the excess gas is utilized by the Cogen facility.

## **J. Biosolids Recycling Center**

### **1. Introduction**

Philadelphia terminated the ocean disposal of sludge, now known as biosolids, in 1980. The end of ocean dumping meant that the City had to develop alternative methods of biosolids management. The first step taken was to establish an interim biosolids composting facility next to the Southwest WPCP. After completing detailed investigations, the City constructed a centralized biosolids dewatering and composting facility to handle the biosolids processing requirements associated with all three treatment plants. The BRC, formerly known as the Sludge Processing and Distribution Center, was completed in 1989.

### **2. Biosolids Process Operations**

Digested biosolids pumped from the Southwest plant and digested sludge barged from the Northeast plant is delivered to three, one-million gallon biosolids storage tanks adjacent to the centrifuge dewatering building. The liquid biosolids is pumped to the dewatering facility and centrifuged. The generated cake is used in a variety of programs

(compost, landfill, stripmine reclamation, and farm application). All centrate is returned to the Southwest wastewater facility.

Cake destined for composting is mixed with wood chips, composted, cured, and dried. After drying the woodchips are screened from the mixture and the screened material is placed in temporary storage. Here, the material is sampled and tested to ensure that regulatory parameters for this product are met.

Many of the utilization programs use cake material. After dewatering, the cake material is temporarily stored on-site prior to utilization.

**3. Product Utilization**

Various outlets for the compost material and biosolids cake have been identified and others continue to be developed. Finding markets or means of utilizing biosolids and compost is an ongoing task that is influenced by changing regulatory requirements and market circumstances.

The table below details production utilization quantities for fiscal year 2004.

<b>Table IV-4 BRC Production</b>	
Utilization Program	Wet Tons
Screened – Marketing	9,520
Screened – Give Away	4,543
Mine mix – Landfill Disposal	2,156
Cake – EcoTechnology Demonstration	0
Cake – Stripmine Reclamation	11,081
Cake – Pennsylvania Agricultural	36,983
Cake – Maryland Agricultural	28,082
Cake – Landfill Disposal	82,054

Screened – Marketing

During fiscal year 2004, Philadelphia released a bid for the highest offer to market its biosolids compost as a soil conditioner in the metropolitan region. The firm of Banfe Recycling was awarded the concession, replacing the long-standing marketing company, PRS Materials. PRS Materials replaced Philadelphia’s compost with a competing compost, and took actions to protect its own market, which has the firm presently in a legal dispute with the City of Philadelphia over trademark infringement for continued use of the “Earthmate” product name. The development of a replacement marketing and distribution

system by Banfe Recycling has been slower than anticipated, and the Water Department has placed substantial compost in temporary stockpile.

#### Screened – Give Away

Philadelphia makes its compost available at no charge for public works and community improvement projects.

#### Mine Mix – Landfill Disposal

While Philadelphia has not produced for a decade its biosolids product for reclamation uses known as “mine mix,” the city retained a stockpile of mine mix, which has deteriorated and has now proved surplus and will be disposed through landfilling.

#### Cake – EcoTechnology Demonstration

EcoTechnologies, Inc., has constructed, on land leased from the City, a process evaluation facility that will employ a process consisting of flash drying (using a ring dryer) and gasification. The gas will be utilized as the energy source for the dryer. If it operates as designed, the facility will produce a residual that will be 98 percent dry solids and compliant with Class A biosolids requirements.

#### Cake – Stripmine Reclamation

Reclamation with biosolids of land stripped during coal mining activity is one of Philadelphia’s longest-standing recycling programs. The project is currently operated in Schuylkill County, PA, in the anthracite coal region, and the contractor is Waste Management and Processors, Inc., an affiliate of the Reading Anthracite Company.

#### Cake – Pennsylvania Agricultural

For over two decades, Philadelphia has made its biosolids available to farmers in southeastern Pennsylvania for fertilizing farmlands growing feed for sale to dairy and poultry operations.

#### Cake – Maryland Agricultural

Several years back, Philadelphia enlarged its biosolids recycling program by expanding the agricultural use of biosolids nutrients to farms in the Maryland portion of the Delmarva Peninsula. These farms typically grow food for poultry growers operating close by. Today, the Pennsylvania and Maryland agricultural programs are approximately equivalent in the amount of biosolids recycled.

### Cake – Landfill Disposal

Disposal of biosolids is confined primarily to the winter season and periods of inclement weather or diminished need for nutrients by landowners. Philadelphia uses landfills that are privately-owned facilities accepting municipal solid waste and that commingle the biosolids with the waste during daily disposal activities.

Other utilization approaches are also being pursued. They include:

### Landfill Bioreactor

The landfill bioreactor is a technology that makes use of biosolids for conversion of decomposable trash into methane. Because in this approach biosolids contributes to energy recovery, Philadelphia is exploring a contract with an operator of a bioreactor to take biosolids on a small scale for trial purposes.

### Tree Farm

The use of biosolids in silviculture has been demonstrated for nearly 20 years in Maryland, using a covered trench system, into which special, fast growing poplar trees are planted. Philadelphia is planning to employ this method of silviculture through its mine reclamation contractor, with the view of showing its applicability throughout the year, including winter.

### Winter Storage for Farmland Use

Philadelphia is planning to extend the season of its agricultural program by using scientific principles demonstrated in recent odor and pathogen control research. Philadelphia will employ the beneficial changes that occur to biosolids during medium-term storage (a month or longer) to devise standard operating procedures for environmentally acceptable off-season storage.

### Dredge Material Soil Blending

As part of a long-range plan to deepen the Delaware River for port uses, Philadelphia has granted approval along one edge of its property permitted for biosolids processing the construction of a rail line for transport of dredge material. Philadelphia is studying ways in which its biosolids might be made suitable as an amendment to the dredge material to manufacture topsoil suited to reclamation uses in northeastern Pennsylvania.

#### 4. *Operation and Maintenance*

The BRC operates continuously Monday through Friday utilizing 15 shifts. The BRC has an authorized staffing level of 128 with 112 currently filled. Most of the vacancies are in the materials handling group (equipment operators). The breakdown of the staff is as follows:

	<b><u>No. of Employees</u></b>
Materials Handling	41
Process Control	19
Maintenance	40
Administration	10
Utilization	<u>2</u>
	112

Many of the unit processes are automated. Automated systems include polymer mixing, centrifuges, centrate system, mixing conveyors, and compost screening.

Preventive maintenance is actively practiced at the BRC. The unit has begun to use MAXIMO for preventive maintenance scheduling and tracking work orders. Predictive maintenance is performed by a third party.

In the past few years, odor violations resulting from BRC operations have declined. This is because BRC staff maintains a proactive approach to minimize odors. In the last five years only seven violations have been issued. There was one violation in FY 2004. Key aspects of BRC's odor minimization and control program include the following steps:

- Manage biosolids stockpiles and inventory to minimize odors.
- Ensure that biosolids materials are aerated to avoid septic conditions.
- Remove standing water throughout the site.
- Utilize outside expertise to model and provide guidance.
- Utilize operating staff as the first alert to detect odor generation.

BRC odor monitoring is reported as part of the Title V Air Operations Permit that has been granted to the combined site of BRC/Southwest WPCP.

## **5. Projects**

Key improvements that have recently been completed are ongoing or planned are listed below:

### Completed

- Water heater installation for dewatering building
- Improvements to security and communication systems
- Rehabilitation of perimeter fence
- Replaced existing centrifuges (1-4)
- Replaced sludge feed pumps
- Replacement of polymer solution pumps
- Construction of new boilers in the dewatering and mixing building
- Installation of fire hydrants and backflow preventers

### Ongoing

- Screen control and motor control center upgrades
- Ventilation system modifications for dewatering building
- Replacement of truck scale

### Planned

- Repair structural steel at pier
- Modification and drainage improvements to road serving offsite storage

### Projects on hold pending BRC contracting out program

- Replacement of woodchip feeders and live bottom hopper #1
- Replace exterior wall & panels & windows in dewatering and mixing buildings
- Data acquisition and control for composting temperature monitoring
- Provide added locker room facilities
- Provide office and lab building for screening system site
- Replace blower motor control centers

## **6. Cost Effective Initiatives**

Significant cost reductions have occurred at the BRC by contracting out certain functions, increasing the productivity of other functions, installing more efficient machinery, and increased streamlining of work processes. This has resulted in a reduction of employees from a high of 212 to 112 and a budget reduction from \$31.6 million in fiscal year 1993 to \$18.1 million in fiscal year 2004. Other cost reduction initiatives either underway or planned include:



- Centrifuge upgrade is producing a dryer cake
- Productivity enhancements via instrumentation and automation
- Modified polymer bidding approach resulted in a lower unit cost for polymer and better centrate quality
- Reduced heating costs and emissions by switching to natural gas
- Continual focus on developing recycling alternatives that provide flexibility and lower overall costs
- Develop a rail siding within the BRC site

## **7. Class A versus B**

The Water Department's long-range strategy is to move more of their utilization programs to Class A material. This class of biosolids is more marketable, more acceptable to the general public, more aesthetic, and perceived to have fewer odors.

The Water Department began in summer 2003 a process to move to an entirely Class A biosolids process and one that could operate in Philadelphia without odors. It entered into a contract with an engineering consultant to develop a request for proposal. It was based on procurement of facilities and services for Philadelphia to operate for 20 years the dewatering station and to construct new facilities to produce Class A biosolids products. Alternative processes identified for this procurement process included fully-enclosed composting systems and heat drying technologies. The Request for Qualifications was released in August 2003, and, in response, the City received qualification statements from four teams, of which two were found qualified and invited to receive a Request for Proposals. One team, Philadelphia Biosolids Services, submitted a proposal on November 24, 2004. This team offered to build a pair of sludge dryers. This proposal is under evaluation by a team drawn from several City agencies to determine if it would be in the Department's best interests to pursue a contract with them.

The Water Department continues to look for programs or alternatives that would provide Class A material. A short list of other initiatives follows:

### EcoTechnology, Inc.

A demonstration project with Eco-Technology (EcoTech) is underway. EcoTech will employ a process consisting of flash drying (using a ring dryer) and gasification. The gas will be utilized as the energy source for the dryer. The resulting product will be 98 percent dry solids and compliant with Class A biosolids requirements. The material generated from the process will be a char and can be reintroduced into the

compost as supplemental amendment. EcoTech has constructed its ring dryer facility at the BRC site. The system can process eight to ten wet tons per hour of dewatered biosolids cake. Although the ring dryer has been tested, the gasification system still requires field testing before the system is made operational.

#### Enhancing Digester Operation

Public concerns with biosolids most often involve odor nuisances and risks of pathogen transmission, also known as “vector attraction.” Philadelphia employs conventional anaerobic digesters as accepted technology for pathogen and vector attraction reduction. In its commitment to principles of continual improvement, Philadelphia is studying ways to upgrade digester facilities to accomplish high performance standards. Evidence developed from several fully-operational facilities in North America and Europe, show that upgraded digesters are able to meet “Class A” pathogen standards and greatly reduce odors in final products.

#### Chemical Stabilization of Digested Biosolids

An accepted technology for reducing pathogens and odors in biosolids is the use of lime kiln or cement kiln dust to accomplish stabilization. Philadelphia is examining ways of using these procedures to create a product that can be stored without risk of nuisances during winter and summer seasons, during which demand for biosolids is low.

## **K. Wastewater Collection and Pumping**

### ***1. Organization and Responsibility***

The Wastewater Collection section presides over an extensive urban network. As described previously, the section has the operational and maintenance responsibility for the sanitary, storm, combined sewers and storm water inlets within the City limits. The Wastewater Collection section also operates and maintains storm and sanitary pump stations and township wastewater metering chambers. The Wastewater Collection section is subdivided into four units. The units and their principal areas of responsibility are identified below:

- (1) Sewer Maintenance - responsible for maintenance and repair of sewers (storm, sanitary, and combined)
- (2) Inlet Cleaning - responsible for cleaning all storm water inlets
- (3) Flow Control - operates and maintains all system pumping stations, combined sewer regulators, tide gates, rain gauges and township metering chambers. This unit also conducts all sewer television inspections

- (4) Collector System Support - provides administrative and technical support to the other operating units and includes the Defective Lateral Detection and Abatement group

**2. Sewer Maintenance Unit**

The unit maintains the City’s network of sewers which includes all storm, sanitary and combined sewers. Additionally, the unit is responsible for repairs to storm water inlets, manholes, sewer cleaning, relieving choked sewers and inspecting laterals. In July 2003, the responsibility to maintain Drainage Rights of Way was transferred from the Water Department to Fairmount Park. At the same time, the unit accepted the responsibility of waterways restoration. The Waterways Restoration Team covers all city streams and creeks. Their responsibilities include general inspection, debris removal, culvert cleaning, plunge pool filling, bank stabilization, and outfall repair.

The authorized staff level for the unit is 182. Currently, there are 25 vacancies. Critical vacancies for the unit are Equipment Operators and Heavy Equipment Operators. The table below illustrates some of the unit’s service levels.

<b>Table IV-6 Sewer Maintenance Unit Work Order History</b>			
Maintenance Category	Fiscal Year		
	2002	2003	2004
Sewers and Laterals Examined	8,472	9,337	10,674
Waterway Restoration- tons of debris removed	----	----	276
Inlets Reset and Reconstructed	10,886	9615	9678

To more effectively provide service, the Sewer Maintenance unit was reorganized. Crew sizes have been reduced and the number of crews has increased to 44. The Unit is now more consistently able to manage their work order backlog. The reorganization has also allowed the unit to dedicate two crews full time to planned work. These proactive crews perform inspections to uncover and identify problems prior to CCTV video inspections. The inspection crew has recently further increased their diagnostic capabilities by utilizing quick view cameras. These cameras are lowered in the manhole and provide valuable information without the need for a confined space entry.

CCTV video inspections have preliminary identified 253 locations (53,000 linear feet) where root growth may impact sewer service. A contract is scheduled to be let in

FY2006 that will chemically treat these locations. This proactive approach should prevent a number of choked sewer complaints.

### **3. *Inlet Cleaning Unit***

The unit is primarily responsible for the inspection and cleaning of over 75,000 storm water inlets. The unit is also responsible for the maintenance of inlet covers (retrieving, replacing, and locking) and relieving choked inlet traps and outlet piping. Inlet cleaning has an authorized staff of 108 and a current vacancy level of 12. Critical vacancies include Heavy Equipment Operators. The following is a four year look at the unit’s performance.

<b>Table IV-7 Inlet Cleaning</b>			
<b>Fiscal Year</b>	<b>Inlets Cleaned</b>	<b>% planned work</b>	<b>Response time (days)</b>
2001	95,796	91	3.23
2002	91,853	89	2.68
2003	92,457	90	4.00
2004	86,975	88	3.90

### **4. *Flow Control Unit***

This unit is responsible for the operation and maintenance of the combined sewer overflow system, the remote wastewater and stormwater pumping stations, the remote odor control facilities, the wastewater metering chambers, the rain gauge network. The unit also performs all CCTV sewer inspections. The authorized staffing for the unit is 84. Sixteen (16) positions are currently vacant. Critical vacancies include Instrumentation and Electronic Technicians.

#### Combined Sewer Overflow System

The combined sewer overflow system consists of 177 CSO points, 89 tide gates associated with CSOs, 26 storm relief structures (diversion chambers), 5 siphons, related wastewater control devices and a city-wide remote monitoring system. A key goal in the maintenance of the CSO structures is to eliminate dry weather overflows (DWO). The table below provides a five year history of DWOs.

<b>Table IV-8 DWO Activity</b>					
Fiscal Year	2000	2001	2002	2003	2004
Dry weather overflows	29	22	35	25	8

DWOs have trended downward between FY02 and FY05. Over time, as more status information becomes available about the CSOs (via instrumentation), the opportunity to minimize the number and the duration of DWOs will increase.

Maintenance and operations of the CSO structures includes ongoing inspections, minor maintenance and comprehensive maintenance activities. Comprehensive maintenance provides complete mechanical, instrument and electrical servicing (as required). The unit's goal is to provide this comprehensive maintenance to each structure annually.

Remote monitoring of CSOs has increased over time. Currently over 220 level and flow monitors are in place at 142 sites. At the end of fiscal year 2004 31% of the CSO monitoring sites were operable.

To further enhance the capture of CSO volume, the Water Department is establishing a Real Time Control (RTC) center at its Fox Street facility. Establishment of this RTC center is one of the capital programs detailed in the CSO Program Long Term Control Plan. The RTC will consolidate a variety of existing monitoring/control systems (remote pump stations, CSO structures, rain gauges and inter-district diversions). A new building has been constructed at Fox Street which will house the RTC. Bidding for the instrumentation and control system is scheduled for fiscal year 2005 with commissioning the following year.

#### Sewer Assessment Program

The Flow Control Unit currently has seven crews dedicated to CCTV inspection of sewers. The certified (NAASCO Pipeline Assessment Certification Program) crew technicians create a video record for each sewer segment inspected. This video contains their observations regarding any sewer defects in accordance with consistent defect code standards. All inspections for the day are wirelessly downloaded from the truck onto a server. The information is tied to the GIS system and made available to department staff for design, hydraulic analysis and field troubleshooting purposes.

The unit's goal is to perform these inspections in a production mode and inspect 354 miles of sewer annually. A five year inspection history is provided below.

<b>Table IV-9 Inspection History</b>					
Fiscal Year	2000	2001	2002	2003	2004
Water Dept. Crews	66.4	62.8	51.7	36.9	48.8
Contractor Crews	--	---	16.1	107.7	110.2
Total Miles	66.4	62.8	67.8	144.6	159.0

Wastewater/Storm Pumping Stations

The wastewater system includes 16 sanitary pumping stations and 3 stormwater pumping stations. The wastewater pumping stations range in capacity from 0.2 mgd to 195 mgd, and the stormwater pumping stations range in capacity from 6 mgd to 832 mgd. Maintenance of these facilities is the responsibility of the Flow Control unit. All the pumping stations are automated and remotely monitored. Each station has an emergency standby generator. Preventive and predictive maintenance is routinely practiced, and 85 percent of the maintenance work orders are planned. Main pump equipment availability averaged 98.5 percent in fiscal year 2004. The Pumping Unit is in the process of implementing the Department's computerized maintenance management system software to schedule O&M and capital inspections for its 16 pumping stations. To date Pumping has entered the CFAP assets at four pumping stations. Once each facility is completed, CFAP inspections will be identified and an inspection schedule developed for the remaining pump stations.

Capital projects recently completed or planned for the remote pumping stations include:

42nd Street pumping station - rehabilitation of mechanical, electrical and instrumentation components, completed in fiscal year 2002

Neill Drive pumping station - rehabilitation of mechanical, electrical and instrumentation components, completed in fiscal year 2003

Linden Avenue pumping station - rehabilitation of mechanical, electrical and instrumentation components is under design

Central Schuylkill pumping station - installation of new dry pit submersible pumps and mechanical bar screens is under design.

### Odor Control

The unit operates and maintains two remote odor control facilities. The dosing station located at the Queen Lane Raw Water pumping station injects the solution into the Upper Schuylkill East interceptor. The dosing station at the Totem Road pumping station injects the solution into the Bucks County force main. Both facilities utilize sodium hypochlorite to eliminate the buildup of hydrogen sulfide - thereby reducing odors and protecting the sewer structure. Facilities are remotely monitored and are routinely inspected.

### Wastewater Metering Chambers

The unit maintains 23 chambers for the metering of flows from the surrounding communities. The sites are routinely inspected and flow meter calibration is done annually. One hundred (100) percent of the flow signals are telemetered to Fox Street. Operational availability of all flow metering averaged 82% in fiscal year 2004 versus a unit goal of 95%.

### Rain Gauge Network

The city-wide system is operated and maintained by the unit. There are 24 gauges which are routinely polled by the computer system at Fox Street. Rain gauge information is used to estimate CSO discharge volume for PADEP reports, modeling sewer hydraulics and analyzing storm sewer capacity. The gauges are routinely serviced and calibrated annually.

## **5. *Collector System Support***

This unit's primary function is to provide technical expertise to the operating units through engineering evaluations and studies. The unit investigates complex drainage and flooding problems. It also conducts hydraulic analysis of the collector system through field surveys and computer aided calculations. The unit is also responsible for the management of maintenance contracts for collector system equipment and oversees the defective connection program. The unit has 27 positions and 3 vacancies. Several of the unit's projects are highlighted below.

### Defective Lateral Detection and Abatement Program

The program was initiated in fiscal year 1994 to insure Water Department compliance with NPDES Stormwater regulations which required in-part the elimination of illicit connections. The seventeen employee group performs a variety of tasks with the goal of identifying, tracking and eliminating sanitary flow into the storm system.

The number of cross connections abated since the inception of the program and in Fiscal 2004 was 593 and 135 respectively. It is estimated that the program has eliminated 84 million gallons per year of sanitary flow from the City streams. Through June 2004, the group had tested 21,995 properties, found 619 illicit connections of which 593 have been repaired. Quarterly and annual reports are provided by the Office of Watersheds to the PaDEP.

#### Information and Work Order Management

Within the collector system organization there are a variety of systems used to manage complaints and maintenance activities. Examples include Inlet Cleaning ICOIS, Sewer Maintenance SMOIS, and Remote Pump Stations PUMA. It is the Water Department's intent to unify these and other street maintenance systems with the existing customer information system. The Collector system support unit is part of this initiative.

#### Manhole Identification

The Water Department, with the assistance of a consulting firm, is developing a system to number manholes (85,000) within the city's drainage basins. The numbering system will allow for consistency with all TV inspection work, and facilitate manhole identification for field crews. The numbering system is presently being loaded into the department's Engineering Record Viewer (ERV).

#### EPA Capacity Management Operation and Maintenance (CMOM) Program

Although the CMOM provision of the EPA's proposed sanitary sewer overflow rule isn't expected to be enacted in the immediate future, many state regulatory agencies have begun incorporating CMOM programs into NPDES permit requirements. There are a variety of planning efforts underway in the department to prepare for CMOM. One example is the development of a database that tracks and records sewer cleaning and flushing activities performed by Sewer Maintenance. The database will eventually tie to information developed in the sewer assessment program and provide another collector system management tool. This database, once developed, can be expanded to provide sanitary sewer overflow (SSO) incident tracking. Information developed will also be utilized in the sewer assessment program and provide another collector system management tool.

### **L. Toxics Reductions and Control**

Under the National Pollutant Discharge Elimination System (NPDES) administered by the EPA, the City is required to regulate industrial waste discharged to the wastewater



collection system. The primary function of the Water Department's Industrial Waste Unit (IWU) is to ensure compliance with federal industrial pretreatment standards. The IWU handles a wide variety of additional assignments including: monitoring wastewater characteristics from townships, determining industrial surcharges, investigating spill incidents, managing both the Water Department's hazardous chemical storage tanks compliance program and the asbestos abatement program, providing support for the Title V air permit compliance, hazardous waste removal contracts, and the pretreatment support required for the Department's CSO program effort. The IWU also provides stormwater sampling services related to the department's cross connection (sanitary to storm) program.

The Water Department's pretreatment program dates from 1980 and has grown in scope. A formal permitting system is in place that addresses federal requirements and the impacts of each industrial discharge. Significant industries are subject to local limits which take into effect the industry's potential for adverse impact to treatment plant performance, permit compliance, and sludge disposal options. Significant industries are distinguished from categorical industries, the latter of which are federally-identified industries in specific categories such as metal finishing and electroplating which are subject to published federal categorical pretreatment standards. Local limits were re-evaluated in July 2001, to assure protection of the water pollution control plants. This was a requirement of the NPDES permits. The Department's report submitted to the EPA in July, 2001 has been accepted. The Water Department has issued final discharge permits to all categorical and significant users. Thus far, over 145 permits have been issued. The identification of SIUs is an ongoing process. Permitted industries, through their self monitoring and reporting obligations, provide the bulk of data used by the Industrial Waste group to ascertain compliance with effluent standards. The unit samples and inspects each permitted user at least once annually.

The IWU utilizes the self monitoring and its own monitoring information to assure compliance. In fiscal year 2004, 1281 samples were collected. Most of the categorical and significant users are complying with their limitations. However, during fiscal year 2004, 17 were reported to the EPA as being in significant non-compliance for calendar year 2003. The IWU's pretreatment program is computerized. Computerization includes review of industrial directories to identify candidate SIUs, review of compliance status and generation of compliance letters, public notices and notices of violation.

The industrial waste surcharge program assures that treatment costs associated with higher strength wastes (greater than 250 mg/l BOD or 350 mg/l TSS) are borne by the customer. In fiscal year 2004, over 2,400 samples were collected by the Industrial Waste

Unit for the surcharge billing of 75 industries. Surcharge revenues for the three years are shown below.

<b>Table IV-10 Industrial Waste</b>			
<b>Fiscal Year</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>
<b>Revenue</b>	<b>\$5,166,000</b>	<b>\$5,889,876</b>	<b>\$4,820,227</b>

Private septage haulers are licensed in the City and spot-checked randomly to ascertain compliance with discharge standards. The IWU issues permits to septage haulers. Septage haulers can only dump at the Southwest wastewater plant. All trucks are sampled prior to discharge. Chemical haulers are prohibited from discharging into the sewer collection system.

The industrial waste unit also responds to all spill incidents. In fiscal year 2004, the unit responded to 222 incidents. The Unit has computerized the data base for spill response and clean-up information so that the information is more easily retrievable.

## **M. Bureau of Laboratory Services**

The Water Department's Bureau of Laboratory Services (BLS) is a state-of-the-art facility which is under the Planning and Engineering Division. BLS is comprised of the following five groups: (1) Administrative Branch, (2) Inorganic Branch, (3) Materials Engineering Laboratories Branch, (4) Organic Branch, and (5) Scientific and Regulatory Affairs.

BLS is responsible for the development of standard operating procedures and the quality assurance program at the water and wastewater laboratories. They are directly responsible for wastewater and biosolids analyses and support the water treatment laboratories which are under the direct supervision of each plant's manager. BLS also performs materials and investigative testing in support of construction activities and in response to emergency or problematic conditions. Another important aspect of their work is conducting vendor surveillance prior to installation of materials and equipment on various Water Department projects.

BLS was intimately involved in the preparation of a Cross Connection Control Manual for the City which provides standards for the prevention of water contamination.

They are also responsible for overseeing the licensing of plumbers with respect to cross connection control.

The current staff of 114 includes 99 individuals in support of daily operations testing and 15 individuals aiding capital improvements project testing.

The work performed by BLS is important from a regulatory reporting standpoint and, based on their proactive approach, in minimizing construction related problems, thereby facilitating overall water and wastewater operations.

The BLS is responsible for administering compliance with the water quality monitoring requirements under both the federal Safe Drinking Water Acts (SDWA) and state regulations. Approximately 1000 sets of drinking water samples are collected each month from the water treatment plants, reservoirs and distribution system. These are tested for chemical and bacteriological parameters to assure product quality.

## **V. Capital Improvement Program**

### **A. Overview**

The City of Philadelphia has for many years used a formal capital programming and budgeting process in which the Water Department participates along with all other elements of City government. Under this process, capital programs are projected forward over a six-year period and a detailed budget is adopted for the first year of the period. Both program and budget commitments are reviewed each year and modified as necessary.

The Water Department projects included in the six-year program proposed for fiscal years 2005-2010 involve total expenditures of \$687,312,000 at projected fiscal year 2004 cost levels. These capital expenditures will be used to pay for the Water Department's design, construction and administrative personnel who work on the capital programs, and for improvements related to the renewal or replacement of wastewater treatment and collection facilities, stormwater flood relief programs, water treatment plant and pumping station improvements, water main rehabilitation, and other projects.

Beginning in the mid-1970s, the capital improvement program concentrated heavily on the upgrade and expansion of the City's three wastewater treatment plants, and the Biosolids Recycling Center. Tremendous progress has been made in these areas. All major capital improvements mandated by consent decrees have been completed. Accordingly, in recent years the Water Department has refocused its energies in the areas of potable water treatment, combined sewer overflows and conveyance and wastewater collection system rehabilitation. Emphasis is also being placed on addressing the issues and complying with the requirements of the rules associated with the Safe Drinking Water Act Amendments. The capital improvement program is managed under the Project Controls section, under Planning and Engineering.

### **B. Fiscal Years 2005-2010 Capital Improvement Program**

The Water Department has initiated a comprehensive review and update of its six-year, Capital Improvement Program (CIP) for fiscal years 2005-2010. The goal is to encourage an organized partnership that promotes an open exchange of knowledge and ideas and engenders a "team" approach to coordination of capital projects. Additionally, the existing CIP Information Management System will be modified to provide flexibility, communication, and accountability. Finally, it is anticipated that an improved multi-year capital budgeting process will be developed based on facility inspections, planning, and priority setting.

In Table V-1 key capital programming areas are summarized. In the sections that follow a brief discussion of each is presented.

<b>Table V-1 Capital Improvement Program for Fiscal Years 2005-2010</b>	
Engineering and Administration	\$ 113,922,000
Improvements to Treatment Plants	256,000,000
Improvements to Conveyance System	131,580,000
Improvements to Collector System	137,810,000
Storm Flood Relief/ CSO	24,000,000
Vehicles	<u>24,000,000</u>
	<b>\$687,312,000</b>

**1. *Engineering and Administration***

This program provides for all Engineering and Administrative personnel connected with the Capital Improvement Program. Fringe benefits are included in the cost projection.

**2. *Improvements to Treatment Plants***

Upcoming improvements to water and wastewater treatment facilities are included in this category. The various improvement projects and rehabilitation/replacement projects are identified in the Water Department's planning documents. Several of the projects which are included have been identified in other chapters of this report.

**3. *Improvements to the Conveyance System***

This category encompasses the replacement of existing water mains throughout the City. It is an ongoing project that replaces aged mains and therefore reduces the likelihood of water main breaks. The preventive nature of this program puts the City in a proactive situation; the City is not left simply to react to the normal consequences of age and use. The Water Department has a goal of replacing approximately 26 miles of water mains (0.8% of the total system) each year.

**4. *Improvements to the Collector System***

The Collector System replacement program is an ongoing project, the purpose of which is to replace old and worn out sewers and entails the construction of new sanitary sewers to serve new developments and to relieve existing unsanitary conditions. The benefits of this program include improved hydraulics by eliminating old lines with blockages, and reductions in the likelihood of street collapse. It is also preventive in nature, and brings similar benefits as does its counterpart in water conveyance. Lastly, this category covers the

conversion of old septic tank systems to public sewers, particularly in the northwesterly sections of the City.

**5. Storm Flood Relief/CSO**

This project, which is ongoing, entails the construction of new storm flood relief sewers in flood-prone areas as well as projects related to the Combined Sewer Overflow program. The benefits of this program are to control excessive erosion, manage the water sheds in terms of capturing and conveying stormwater, reduction of sewer maintenance activity, and minimization of citizen complaints related to chronic flooding.

**6. Vehicles**

Included in this line item are expenditures for the purchase of replacement vehicles utilized by the various units throughout the Water Department's operations. This excludes maintenance of vehicles, which is covered under a separate contract with Fleet Management and charged to expenses.

## **VI. Financial Requirements**

### **A. Overview**

An evaluation of the adequacy of revenues to meet projected revenue requirements has been made for the fiscal years ending June 30, 2005, through June 30, 2010. Revenue projections for retail service customers are based on the schedules of rates for water and wastewater service, which became effective July 1, 2003. The Water Department is currently in the middle of rate hearings for retail service rates. Based upon the first phase of the hearings an overall rate increase of approximately 13 percent was placed into effect on February 1, 2005. Projected additional revenues from this recent increase are reflected in Table VI-8. The rate hearings are now focused on proposed increases for fiscal years 2006 through 2008, which are currently projected to amount to slightly over 4 percent for each of the three fiscal years. Beyond fiscal year 2008, additional annual operating revenue increases are projected to be necessary to meet the Water Department's projected expenses and to comply with the rate covenants of the General Ordinance. A projected statement of revenues and expenses for the six-year study period is presented in Table VI-8 which provides an indication of the adequacy of revenues and the feasibility of issuing the Bonds and future indicated revenue bond issues under the stipulations of the General Ordinance.

The financial data used in the analyses presented herein were obtained from the Water Department's historical audited financial statements through fiscal year 2004, the latest available unaudited revenue and expense estimates for fiscal year 2005, and the approved operating and capital budgets for fiscal year 2005.

The Water Department operates on a modified accrual basis of accounting. Revenues are recorded upon a receipt, except revenues from other governments which are accrued as billed, and interest which is accrued as earned. Expenditures are recorded as expenses on an encumbrance basis, except debt service and lease payments which are recorded when paid.

### **B. Existing Rates and Rate Methodology**

Under the Philadelphia Home Rule Charter, in accordance with standards ordained by City Council from time to time, the Water Department is empowered and required to establish rates for water and wastewater service, without further authorization of the City Council, at levels which provide sufficient revenue to meet all operating expenses of the water and wastewater systems, including interdepartmental charges for services provided to the Water Department, and debt service requirements on all obligations issued for the Water Department, as well as other specific bond ordinance covenants.

The Water Department retained Black & Veatch in early fiscal year 2001 to assist in the development of cost of service based rates for the period of fiscal years 2002 through 2004. The initial increase in water and wastewater rates applicable to retail customers, including residential, commercial, industrial, charities and schools, the Philadelphia Housing Authority, and municipal service became effective beginning September 4, 2001, were based in large part on the Black & Veatch studies. Subsequent increases for retail service customers became effective in July 1, 2002 and July 1, 2003. Rates applicable to wholesale water and wastewater customers were also developed by Black & Veatch and became effective July 1, 2001.

One of the most significant aspects of the previous rate hearings, and the rates that were approved as a result of those hearings, was the redistribution of costs associated with the collection, conveyance, and treatment of stormwater from residential customers to non-residential customers. These changes were based upon studies related to a review of alternative stormwater cost allocation methodologies and associated charges were conducted by the Water Department and a team of consultants, which included the involvement of a citizen's advisory group, comprised of a diverse cross-section of business, institutional, and residential interests. The study results indicated that the previously existing methodology for allocating costs associated with stormwater recovered a proportionately greater share of such costs from residential accounts, when compared to a more appropriate method which recognizes both gross and impervious property areas. The redistribution of stormwater costs from residential to non-residential accounts over a three step phase-in was recognized in the rates which were in effect during the period of fiscal years 2002-2004.

As indicated above, the first phase of the ongoing rate hearing process related to rates for fiscal years 2005 through 2008, has resulted in an overall rate increase of approximately 13 percent which became effective February 1, 2005. The increase was comprised of an overall increase of 17 percent in retail water rates and an increase of 10 percent for retail wastewater rates. These rate increases were implemented on an across-the-board basis. The schedule of retail rates shown in Table VI-1 on the left side of the table are those that were in effect as of July 1, 2003, are the basis for the "base" level of revenue projections used in this report, and do not include the impacts of the recent rate adjustment in February 2005. The rates shown on the right side of Table VI-1 are the rates that became effective February 1, 2005.

In addition to the existing General Service rates presented in Table VI-1, special reduced rates are applicable to certain properties or customer groups such as charitable



**TABLE VI-1**  
**GENERAL SERVICE**  
**WATER AND WASTEWATER RATES**

**Monthly Service Charges**

Meter Size inches	Existing Water Rates (Eff. 07/01/03) (b)	Proposed Water Rates (Eff. 02/01/05) (c)	Existing Wastewater Rates (Eff. 07/01/03) (b)	Proposed Wastewater Rates (Eff. 02/01/05) (c)
	\$/month	\$/month	\$/month	\$/month
5/8 (a)	3.43	4.02	13.55	14.89
3/4	3.67	4.30	64.63	71.00
1	4.44	5.20	104.96	115.31
1-1/4	5.34	6.24	157.25	172.75
1-1/2	5.91	6.91	205.09	225.30
2	8.22	9.62	326.13	358.27
3	13.02	15.23	607.57	667.44
4	23.65	27.66	1,015.82	1,115.92
6	44.36	51.89	2,026.82	2,226.54
8	67.43	78.87	3,237.13	3,556.11
10	98.79	115.54	4,656.39	5,115.23
12	160.91	188.20	8,666.66	9,520.67

**Quantity Charges**

Monthly Water Usage	Water Rates		Monthly Water Usage	Wastewater Rates	
	07/01/03 Charge Per Mcf \$/Mcf	02/01/05 Charge Per Mcf \$/Mcf		07/01/03 Charge Per Mcf \$/Mcf	02/01/05 Charge Per Mcf \$/Mcf
First 2 Mcf	16.62	19.44	All Billable Water Usage	14.36	15.78
Next 98 Mcf	13.17	15.40			
Next 1,900 Mcf	11.72	13.70			
Over 2,000 Mcf	8.76	10.25			
			Wastewater Surcharge	07/01/03 Charge Per Pound \$/lb	02/01/05 Charge Per Pound \$/lb
			BOD in excess of 250 mg/l	0.214	0.235
			SS in excess of 350 mg/l	0.214	0.235

Mcf = 1,000 Cubic Feet = 7,480 Gallons

mg/l = milligrams per liter

BOD = Biochemical Oxygen Demand

SS = Suspended Solids

(a) Approximately 96 percent of all retail customers have 5/8-inch meters.

(b) Does not reflect rate increase effective February 1, 2005.

(c) Rates effective February 1, 2005.

institutions, schools, and eligible senior citizens as prescribed by ordinance. Currently, the rates for these customers amount to 75 percent of the General Service rates. A reduced rate is also applicable to the Philadelphia Housing Authority amounting to 95 percent of the General Service rates. Charges are also established for municipal and private fire protection and for dischargers of high strength wastewater.ervice Water and Wastewater Rates

Service to customers located outside the City is on a wholesale basis through contracts with various municipalities, authorities, and townships. The present bases of charges to the wholesale customers are set out in respective contracts for service to each customer. There are currently 10 wholesale wastewater customers and two wholesale water customers. The existing rates for the wholesale customers are based upon the cost of service study which Black & Veatch prepared for the Water Department in conjunction with the development of the retail rates which are presently the subject of the rate hearings. The existing rates for wholesale customers became effective July 1, 2004, with additional increases approved for these customers effective July 1, 2005, July 1, 2006, and July 1, 2007. For purposes of revenue projections from wholesale customers beyond fiscal year 2008, the overall revenue increases shown in Table VI-8 of this report are assumed to equally apply to both wholesale and retail customers.

### **C. Projected Revenues under Existing Rates**

Projected operating and nonoperating revenues of the Water Department are shown in Table VI-2 for fiscal years 2005 through 2010 under rate schedules for water and wastewater service for General Service customers and Contract Service customers that became effective July 1, 2003 and July 1, 2004, respectively. Operating revenues of the Water Department consist of several components, which are projected separately for the water and wastewater utilities.

Operating revenues for the water and wastewater utilities include charges for water and wastewater service to several customer classes. The General Customer group, shown on Lines 1 and 9 of Table VI-2, consists of residential, commercial, industrial, and public utility accounts, senior citizens, charitable institutions, schools, and the Philadelphia Housing Authority. Projected gross billings have been developed by applying the approved schedules of rates to normalized projections of water sales and number of customers for respective classes based upon an analysis of historical trends. Revenues under existing rate levels from General Customers, which are comprised of the above mentioned accounts, reflect an adjustment to the projections of gross billings to anticipated cash receipts based on an analysis of historical annual billings and receipts.

Revenues from Municipal Service, shown on Lines 2 and 10 of Table VI-2, are derived solely from water and wastewater service to various municipal entities within the City of Philadelphia and the provision of system facilities for public fire protection, shown on Line 4 of Table VI-2. The City of Philadelphia is the largest customer of the Water Department. The fiscal year 2005 revenues from the City are expected to amount to

approximately \$24,370,000. This includes \$6,376,000 in public fire protection charges. In

**TABLE VI-2**  
**PROJECTED REVENUE**  
**UNDER RATES EFFECTIVE JULY 1, 2003**  
**(in thousands of dollars)**

Line No.		Fiscal Year Ending June 30,					
		2005	2006	2007	2008	2009	2010
Operating Revenue							
Water Operations							
1	Metered Sales to General Customers	120,463	119,887	119,016	118,142	117,272	116,398
2	Municipal Service	6,226	6,226	6,226	6,226	6,226	6,226
3	Private Fire Meters	1,315	1,315	1,315	1,315	1,315	1,315
4	Public Fire Protection	6,376	6,176	5,976	5,776	5,576	5,576
5	Contract Service	6,412	6,623	7,790	8,055	8,060	8,060
6	Subtotal Water Service Revenue	140,792	140,227	140,323	139,514	138,449	137,575
7	Other Operating Revenue	5,297	5,282	5,289	5,274	5,255	5,235
8	Total Water Operations	146,089	145,509	145,612	144,788	143,704	142,810
Wastewater Operations							
9	Metered Sales to General Customers	216,075	214,903	213,396	211,810	210,379	208,865
10	Municipal Service	11,768	11,768	11,768	11,768	11,768	11,768
11	Contract Service	21,858	22,252	23,188	24,030	24,030	24,030
12	Excess Strength Service Charge	5,090	5,270	5,460	5,640	5,820	6,010
13	Subtotal Wastewater Service Revenue	254,791	254,193	253,812	253,248	251,997	250,673
14	Other Operating Revenue	7,271	7,240	7,208	7,177	7,145	7,114
15	Total Wastewater Operations	262,062	261,433	261,020	260,425	259,142	257,787
16	Total Operating Revenue	408,151	406,942	406,632	405,213	402,846	400,597
Nonoperating Income							
17	Interest Income - Capital Funds (a)	2,045	4,078	2,405	6,891	5,155	3,352
18	Interest Income - Operating Funds (b)	3,582	2,901	2,387	1,787	1,435	1,460
19	Total Nonoperating Income	5,627	6,979	4,792	8,678	6,590	4,812
20	Total Water Department Revenue	413,778	413,921	411,424	413,891	409,436	405,409

(a) Includes interest income on the Construction Fund and on the Debt Service Reserve Account. Excludes up to \$4,994,000 annually in interest income on the Debt Service Reserve Account which is transferred to the City General Fund.

(b) Includes interest income on the Revenue and Rate Stabilization Funds.

January 2005 the Water Department decommissioned the high pressure fire system which provided non-potable fire service to the Center City area. The high pressure system has been fully replaced by the standard pressure fire system, which has been the system actually used for fire protection in the Center City area for the past several years. The decommissioning of the high pressure system results in an overall loss in revenues of approximately \$1,700,000 per year. Existing schedules of charges also include a charge for private fire protection connections to the water system, the revenue from which is shown on Line 3 of Table VI-2.

Contract water service, Line 5 of Table VI-2, consists of water sales to the Bucks County Water and Sewer Authority and to Aqua Pennsylvania (formerly the Philadelphia Suburban Water Company) on a wholesale basis. Current charges for water service provided to Bucks County are assessed on a monthly basis and include an annual fixed charge to recover allocated capital costs, a commodity charge applicable to metered usage, and a demand charge per unit of measured maximum demand. The term of this contract covers a period of 45 years and expires in 2011.

The charges to Aqua Pennsylvania, which commenced taking service from Philadelphia in fiscal year 2002, includes a commodity charge applicable to metered water usage for the recovery of power and chemical costs, and a fixed charge to recover all other allocable operation and maintenance expenses and capital related costs. The recent addition of this new wholesale service customer is a result of the Water Department's continuous efforts to market its available water supply capacity. The contract with Aqua Pennsylvania is for up to 11 mgd of maximum day capacity and covers a term of 25 years, through 2026.

Other operating revenue from the water operations shown on Line 7 of Table VI-2 consists largely of penalties on overdue bills for retail water service customers and miscellaneous other revenue.

Wholesale wastewater service is provided to 10 suburban customers on a contractual basis. In the 1980s, six of the largest contract customers entered into new long-term contracts with the Water Department. These contracts have terms of 30 to 35 years and require that five of the six customers make front-end capital contributions to the Water Department for the allocated share of investment in treatment and collection system facilities used in providing wastewater service to the particular customer. Contract rates for wastewater service generally consist of charges for operation and maintenance expense and certain capital costs associated with the collection and treatment facilities used in providing the service, and are now applied on a monthly basis for all customers except for Delaware County Regional Sewer Authority (DELCORA). Projected revenue from wholesale wastewater customers is shown on Line 11 of Table VI-2.

Since June of 2003 Bucks County has been delivering wastewater to the Water Department in excess of its annual daily contractual limit of 20 MGD. The parties filed for arbitration on this issue as provided in the service agreement. At the same time, both parties continued discussions in an attempt to reach an agreement to resolve this and other related issues. Formal execution of a contract amendment which resolved the issues took place on

March 11, 2005. The settlement provides for two payments to the Water Department. The first payment will be made on May 30, 2005, in the amount of \$ 9.0 million; a second payment of approximately \$ 9.6 million will be made on August 1, 2005. In return, the Water Department has agreed to increase Bucks County's annual daily flow limit from 20 MGD to 24 MGD. Further the Water Department agreed to lengthen the term of the current contract by 15 years, thus extending it to the year 2038.

The payments resulting from the settlement and amended agreement with Bucks County are not currently reflected in Table VI-8, as the potential disposition of these funds will be the subject of discussion during the second phase of the rate hearing process. The potential impact of these payments on Table VI-8 would be one or a combination of the following: (1) a reduction in the revenue increases shown in Table VI-8 for fiscal years 2006 through 2008; (2) an increase in the balance in the Rate Stabilization Fund as of the end of fiscal year 2008; and (3) an increase in the deposits into the Residual Fund, which could be accomplished by providing greater than 1.20 debt service coverage for senior lien debt in one or more of the fiscal years 2006 through 2008.

Retail customers which contribute high strength wastewater are presently assessed an extra strength surcharge based upon monitored strength. Revenue from these customers is shown on Line 12 of Table VI-2.

Other operating revenues for the wastewater utility, shown on Line 14 of Table VI-2, includes penalties on overdue bills and income from permits and licenses, and other miscellaneous sources.

Non-operating revenue of the Water Department consists of interest and other income. Interest income recognizes the requirements set forth in the General Ordinance which provides for the transfer of all interest earnings from investment of the Construction Fund, the Rate Stabilization Fund, and the Debt Service Reserve Account (in excess of \$4,994, 000) to the Revenue Fund. Projections of interest income are based on the projected average balances in these funds and are considered to be available to meet the Water Department's revenue requirements throughout the period. An interest rate of 2.0 percent has been assumed in estimating interest income on the various operating funds and accounts, and 3.0 percent for the Debt Service Reserve Account, and 2.0 percent for the Construction fund. Total non-operating interest income available to the Revenue Fund is shown on Line 19 of Table VI-2.

## **D. Capital Improvements Financing**

Table VI-3 summarizes the Water Department's Capital Improvement Program for fiscal years 2005 through 2010 on an encumbrance basis, that is, the total cost of each project is shown in the year that design of the project is scheduled to commence. Costs shown in Table VI-3 reflect the estimated total costs of the various projects, a portion of which will be financed from Capital Account deposits, transfers from the Residual Fund, and other non-bond sources such as assessments. Projected fiscal year 2005 through 2010 costs for the capital improvement program are stated at estimated fiscal year 2004 cost levels. An annual inflation allowance of 3 percent has been recognized on Line 13 of Table VI-3 beginning with fiscal year 2005.

Table VI-4 shows the total projected capital improvement costs, a net cash flow adjustment, and the annual net cash financing requirements associated with the Capital Improvement Program. The cash flow adjustment indicated in Table VI-4 represents the net result of carrying forward costs which are encumbered in one year, but which do not become a cash expenditure until a subsequent year. Estimated Engineering and Administration costs are anticipated to be incurred fully during the fiscal year in which the costs are budgeted.

**TABLE VI-3**  
**CAPITAL IMPROVEMENT PROGRAM**  
**(in thousands of dollars)**

Line No.	Fiscal Year Ending June 30,						
	2005	2006	2007	2008	2009	2010	
WATERWORKS IMPROVEMENTS							
1	Engineering and Administration	8,734	8,734	8,734	8,734	8,734	8,734
2	Water Treatment and Plant Improvements	20,091	18,480	18,480	18,480	18,480	18,480
3	Main Replacement	21,930	21,930	21,930	21,930	21,930	21,930
4	Vehicles	2,000	2,000	2,000	2,000	2,000	2,000
5	Subtotal	<u>52,755</u>	<u>51,144</u>	<u>51,144</u>	<u>51,144</u>	<u>51,144</u>	<u>51,144</u>
WASTEWATER COLLECTION AND TREATMENT							
6	Engineering and Administration	10,253	10,253	10,253	10,253	10,253	10,253
7	Water Pollution Control Plant Improvements	25,909	23,520	23,520	23,520	23,520	23,520
8	Sewer Replacement	24,510	22,660	22,660	22,660	22,660	22,660
9	Storm Flood Relief	4,000	4,000	4,000	4,000	4,000	4,000
10	Vehicles	2,000	2,000	2,000	2,000	2,000	2,000
11	Subtotal	<u>66,672</u>	<u>62,433</u>	<u>62,433</u>	<u>62,433</u>	<u>62,433</u>	<u>62,433</u>
12	Total Improvements (Line 5 + Line 11)	<u>119,427</u>	<u>113,577</u>	<u>113,577</u>	<u>113,577</u>	<u>113,577</u>	<u>113,577</u>
13	Inflation Adjustment (a)	3,583	6,917	10,531	14,255	18,090	22,040
14	Inflated Total	<u>123,010</u>	<u>120,494</u>	<u>124,108</u>	<u>127,832</u>	<u>131,667</u>	<u>135,617</u>

(a) Cost estimates for fiscal years 2005 through 2010 are in terms of fiscal year 2004 cost levels.  
An allowance is provided for inflation of 3 percent per year beginning with fiscal year 2005.

Net cash financing requirements indicated in Table VI-4 are assumed to be primarily met from future revenue bond issues, Capital Account deposits, and transfers to the Construction Fund from the Residual Fund. Projected revenue bonds are assumed to be issued to finance a major portion of the Water Department's share of costs as the encumbrances mature into actual cash payments to contractors. The annual net cash financing required for capital improvements through fiscal year 2010 is expected to be met by issuance of an additional \$550,000,000 of water and wastewater revenue bonds, including \$250,000,000 from the Series 2005A Bonds. The projected scheduling of the proposed bond issues are anticipated to be May 2005, for the Series 2005A Bonds and July 1, 2007, for a second proposed bond issue of \$300,000,000. Each bond issue is expected to provide financing of the capital program for the ensuing two-year period.

**TABLE VI-4**

**ANNUAL CASH CAPITAL IMPROVEMENT  
FINANCING REQUIREMENTS  
(in thousands of dollars)**

<u>Fiscal Year Ending June 30</u>	<u>Total Capital Improvements</u>	<u>Net Cash Flow Adjustment</u>	<u>Net Financing Required</u>
2002	121,018	(10,602)	110,416
2003	130,828	(9,673)	121,155
2004	134,753	(1,222)	133,531
2005	138,796	(1,259)	137,537
2006	142,959	(1,296)	141,663
2007	147,248	(1,335)	145,913
	815,602	(25,387)	790,215

Table VI-5 presents an estimate of the flow of funds in the Construction Fund of the Water Department for fiscal years 2005 through 2010. Line 1 of the table shows the total amount of the proposed bond issues that are to be used to finance a portion of the Water Department's capital improvement program. Lines 2 through 4 show the disposition of the proceeds of these bond issues. Lines 6 through 15 of Table VI-5 show the estimated receipts and disposition of funds in the Construction Fund and the Debt Service Reserve Account. Line 8 of Table VI-5 shows the annual Capital Account Deposit into the Construction Fund. The amount of this deposit is projected to be equal to 1 percent of the net plant investment in water and wastewater facilities. Line 9 of Table VI-5 shows transfers into the Construction Fund from the Residual Fund. As monies begin to flow into the Residual Fund, it is assumed that the one of the most prudent uses of those balances would be to finance a portion of the Water Department's capital improvement program. Other prudent uses of Residual Fund balances could include prepayment or redemption of a portion of outstanding revenue bonds. For purposes of this report, we have shown the use of Residual Fund balances to be used as an additional source of cash financing of the Water Department's capital improvement program.

Lines 16 and 17 of Table VI-5 show the estimated interest earnings from the investment of the Construction Fund and the Debt Reserve Account based on respective average annual balances. As previously indicated, an interest earnings rate of 3.0 percent has



**TABLE VI-5**

**PROJECTED FLOW OF FUNDS - CONSTRUCTION FUND  
WATER DEPARTMENT  
(in thousands of dollars)**

Line No.		Fiscal Year Ending June 30,					
		<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>
	Disposition of Bond Proceeds						
1	Proceeds from Sale of Bonds	250,000			300,000		
	Transfers:						
2	Debt Reserve Account (a)	17,201			20,642		
3	Cost of Bond Issuance (b)	3,750			4,500		
4	Construction Fund (c)	229,049			274,858		
5	Total Issue	<u>250,000</u>			<u>300,000</u>		
	Construction Fund						
6	Beginning Balance	84,471	239,988	158,479	74,394	265,486	177,442
7	Transfer From Bond Proceeds	229,049			274,858		
8	Capital Account Deposit	16,708	17,068	17,428	17,788	18,148	18,508
9	Transfer From Residual Fund	21,000	16,000	16,500	20,000	19,000	20,000
10	Total Available	<u>351,228</u>	<u>273,056</u>	<u>192,407</u>	<u>387,040</u>	<u>302,634</u>	<u>215,950</u>
11	Net Cash Financing Required	<u>111,240</u>	<u>114,577</u>	<u>118,013</u>	<u>121,554</u>	<u>125,192</u>	<u>129,609</u>
12	Ending Balance	<u>239,988</u>	<u>158,479</u>	<u>74,394</u>	<u>265,486</u>	<u>177,442</u>	<u>86,341</u>
	Debt Reserve Account						
13	Beginning Balance	157,426	174,628	174,628	174,628	195,270	195,270
14	Transfer From Bond Proceeds	17,202			20,642		
15	Ending Balance	<u>174,628</u>	<u>174,628</u>	<u>174,628</u>	<u>195,270</u>	<u>195,270</u>	<u>195,270</u>
	Interest Income						
16	Construction Fund (d)	2,045	3,753	2,080	5,937	4,201	2,398
17	Debt Reserve Account (e)	4,923	5,319	5,319	5,948	5,948	5,948
18	Total Interest Income	<u>6,968</u>	<u>9,072</u>	<u>7,399</u>	<u>11,885</u>	<u>10,149</u>	<u>8,346</u>

(a) Amount of Debt Service Reserve Account deposit estimated to be equal to maximum annual future debt service payment.

(b) Cost of bond issuance assumed at 1.5 percent of issue amount.

(c) Deposits equal proceeds from sale of bonds less transfers to the Debt Reserve Account and Costs of Issuance.

(d) Interest income is transferred to the Residual Fund up to a maximum amount of \$4,994,000, with the balance being transferred to the Revenue Fund.

been assumed for the Debt Service Reserve Account, and 2.0 percent has been assumed for the Construction Fund. These interest earnings are considered as nonoperating income and are transferred to the Revenue Fund except as described below, and are used to meet annual revenue requirements of the Water Department under the General Ordinance. Only the interest earnings in excess of \$4,994,000 in the Debt Service Reserve Account are transferred to the Revenue Fund, with \$4,994,000 being transferred to the Residual Fund in accordance with the General Ordinance.

## **E. Projected Revenue Requirements**

The annual revenue requirements of the Water Department consist of operating expenses for existing and proposed water and wastewater system facilities, including interdepartmental charges for services provided to the Water Department by other departments of the City, debt service on all obligations issued by the Water Department, projected Capital Account Deposits, and a payment to the City General Fund. In addition, revenues must be adequate to meet applicable rate covenants, as set forth in the General Ordinance.

### **1. Operating Expenses**

Operating expenses, including interdepartmental charges, consist of all costs of the Water Department necessary and appropriate for the operation, maintenance, and administration of the water and wastewater systems during each year. Projections of operating expenses for the water and wastewater utilities for the fiscal years 2005 through 2010 are shown in Table VI-6. Projections of operating expenses include expenses such as personal services, purchased services including power, materials and supplies, equipment, fringe benefits, and indemnities.

Direct operating expense projections shown in Table VI-6 include recognition of the potential impact of anticipated escalation in costs due to inflation during the six-year study period. Fiscal year 2005 expense projections are based on the Water Department's budgeted expenditures for that year. An analysis of previous years' budgets and actual expenditures by functional division and by budgetary object class within each division has been used to adjust the proposed fiscal year 2005 budgeted expenditures downward slightly to reflect recent actual expenditure experience. Projection of labor intensive items of expense reflect stipulations of the current labor agreement, in which a bonus of \$750 per employee is applicable for fiscal year 2005, with wage adjustments of 2 percent effective July 1, 2005, 3 percent effective July 1, 2006, and 4 percent effective July 1, 2007. Beyond fiscal year 2008, labor costs are assumed to increase at 3 percent annually. Electric power costs are expected

to increase 2.5 percent annually through the study period. All other purchased services, materials and supplies, and equipment expenditures are projected to increase at 3.5 percent annually from the adjusted 2005 budgeted expenditures level throughout the study period.

**TABLE VI-6**  
**PROJECTED OPERATION AND MAINTENANCE EXPENSE**  
**(in thousands of dollars)**

Line No.		Fiscal Year Ending June 30,					
		<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>
	Water Operations						
1	Personal Services	51,287	51,697	53,509	55,933	57,902	59,939
2	Purchased Services	23,359	25,425	25,383	26,018	26,668	27,335
3	Materials and Supplies	14,647	15,159	15,690	16,239	16,807	17,396
4	Equipment	1,376	1,548	1,602	1,659	1,717	1,777
	Contributions, Indemnities, Refunds						
5	and Taxes	2,409	2,494	2,581	2,671	2,765	2,862
6	Interdepartmental Charges	19,616	19,868	20,261	20,985	21,590	22,212
7	Subtotal Operating Expenses	<u>112,694</u>	<u>116,191</u>	<u>119,026</u>	<u>123,504</u>	<u>127,449</u>	<u>131,520</u>
8	Less: Liquidated Encumbrances	<u>(4,800)</u>	<u>(4,800)</u>	<u>(4,800)</u>	<u>(4,800)</u>	<u>(4,800)</u>	<u>(4,800)</u>
9	Operating Expenses - Water	<u>107,894</u>	<u>111,391</u>	<u>114,226</u>	<u>118,704</u>	<u>122,649</u>	<u>126,720</u>
	Wastewater Operations						
10	Personal Services	80,041	80,705	83,548	87,349	90,372	93,550
11	Purchased Services	38,736	41,829	41,503	42,541	43,604	44,694
12	Materials and Supplies	15,518	16,061	16,623	17,205	17,807	18,431
13	Equipment	2,331	2,599	2,690	2,784	2,881	2,982
	Contributions, Indemnities, Refunds						
14	and Taxes	4,103	4,246	4,395	4,549	4,708	4,873
15	Interdepartmental Charges	35,852	36,305	37,015	38,336	39,441	40,578
16	Subtotal Operating Expenses	<u>176,580</u>	<u>181,746</u>	<u>185,775</u>	<u>192,763</u>	<u>198,814</u>	<u>205,107</u>
17	Less: Liquidated Encumbrances	<u>(7,200)</u>	<u>(7,200)</u>	<u>(7,200)</u>	<u>(7,200)</u>	<u>(7,200)</u>	<u>(7,200)</u>
18	Operating Expenses - Wastewater	<u>169,380</u>	<u>174,546</u>	<u>178,575</u>	<u>185,563</u>	<u>191,614</u>	<u>197,907</u>
19	Total Operating Expenses	<u>277,274</u>	<u>285,937</u>	<u>292,800</u>	<u>304,267</u>	<u>314,263</u>	<u>324,627</u>

Interdepartmental charges for service provided to the Water Department by other City departments and agencies anticipated through the six year period are also included in Table VI-6. These charges represent the Water Department's proportionate charge for services provided directly by other City departments and agencies, including the Water Revenue Bureau, which has responsibility for the collection of revenue for water and wastewater service provided by the Water Department. Accomplishment of this responsibility requires reading of meters, maintenance of customer accounts, billing, collection of payments, enforcements of payments, and customer relations. Projections of interdepartmental expenses are also based on the fiscal year 2005 budget. Cost escalation factors used to project expenditures for the study period are the same as those used to project direct Water Department operating expenditures mentioned above.

## 2. *Debt Service Requirements*

Projected debt service on outstanding revenue bonds is shown on Line 1 of Table VI-7 for the period of fiscal years 2005-2010. The proposed \$250,000,000 Series 2005A Bonds are anticipated to be issued May 2005. Debt service on this issue assumes a 30-year amortization schedule, a 5.50 percent interest rate, and equal annual principal and interest payments. The first debt service payment on the Series 2005A Bonds is projected to occur in fiscal year 2006. A second bond issue during the study period of \$300,000,000 is projected to be issued July 1, 2007. Similar assumptions for debt service payments on this bond issue have been made, as for the Series 2005A Bonds, with the first debt service payment for this second bond issue projected to occur in fiscal year 2008. Table VI-7 summarizes the total revenue bond debt service projected for the study period. As indicated in footnote (b) related to Line 3 of Table VI-7, the projected annual debt service payments on the Series 2005B Bonds are assumed to be equal to the annual debt service payments on the refunded Series 1995 Bonds.

**TABLE VI-7**  
**FUTURE DEBT SERVICE REQUIREMENTS**  
**(in thousands of dollars)**

Line No.		Fiscal Year Ending June 30,					
		<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>
	Revenue Bonds						
1	Outstanding Bonds	156,776	152,846	152,849	152,859	152,852	152,852
2	Series 2005A Bonds (a)		17,201	17,201	17,201	17,201	17,201
3	Series 2005B Bonds (b)		4,491	4,491	4,491	4,491	4,491
4	Projected Future Bonds (c)				20,642	20,642	20,642
5	Total Revenue Bonds	<u>156,776</u>	<u>174,538</u>	<u>174,541</u>	<u>195,193</u>	<u>195,186</u>	<u>195,186</u>
	Pennvest Loan						
6	Pennvest Parity Loans	384	384	384	384	384	384
7	Pennvest Subordinate Loans	1,227	1,227	1,227	1,227	1,227	1,227
8	Total Debt Service	<u>158,387</u>	<u>176,149</u>	<u>176,152</u>	<u>196,804</u>	<u>196,797</u>	<u>196,797</u>

(a) Assume 5.5% interest, term of 30 years, level annual principal and interest payments, May 2005 closing date.

(b) Debt service on the Series 2005B Bonds are assumed to be equal to the debt service on the refunded Series 1995 Bonds.

(c) Assume 5.5% interest and term of 30 years, level annual principal and interest payments, and July 1, 2007 closing date.

Lines 5 and 6 of Table VI-7 show the debt service payments on the outstanding Pennvest loans. Line 5 shows the annual debt service of \$384,000 which is related to a parity revenue bond issued through Pennvest dated April 30, 2000. Line 6 shows the annual debt service of \$1,227,000, which is a subordinate loan issued through Pennvest dated June 15, 1993.

### ***3. Capital Account Deposit***

The General Ordinance establishes a Capital Account as an account within the Construction Fund. The Water Department covenants to make deposits to the Capital Account in each fiscal year, subject to the availability of funds, in an amount not less than one percent of the total net plant investment in water and wastewater facilities. Such deposits will be required June 20 of each fiscal year to fund annual renewals, replacements, and improvements in order to maintain adequate water and wastewater service to the areas served by the system. The projected level of the annual Capital Account Deposit reflects the current level of net plant investment in water and wastewater facilities and the historical rate of growth in net plant investment value. The projected fiscal year 2005 requirement amounts to \$16,708,000 and increases during the period to \$18,508,000 in fiscal year 2010.

### ***4. City General Fund Deposit***

Under the General Ordinance, annual payments to the City General Fund are required from the Residual Fund in an amount not to exceed the lower of \$4,994,000 or annual interest earnings on the Debt Service Reserve Account. Applicable interest earnings are transferred to the Residual Fund to meet this obligation

## **F. Adequacy of Projected Revenues to Meet Projected Revenue Requirements under General Ordinance Requirements**

Table VI-8 presents a statement of projected revenues and revenue and rate covenant requirements for water and wastewater operations for fiscal year 2005 through fiscal year 2010 under the stipulations of the General Ordinance. The table provides an indication of the adequacy of the Water Department's revenues and the feasibility of the issuance of the Bonds and future anticipated revenue bond sales during the study period.

TABLE VI-8

**PROJECTED REVENUE AND REVENUE REQUIREMENTS  
WATER DEPARTMENT OPERATIONS 1989 GENERAL ORDINANCE  
(in thousands of dollars)**

Line No.		Fiscal Year Ending June 30,							
		2005	2006	2007	2008	2009	2010		
<b>OPERATING REVENUE</b>									
1	Water Service - Existing Rates	140,792	140,227	140,323	139,514	138,449	137,575		
2	Wastewater Service - Existing Rates	254,791	254,193	253,812	253,248	251,997	250,673		
3	Total Service Revenue - Existing Rates	395,583	394,420	394,135	392,762	390,446	388,248		
	Additional Service Revenue Required:								
			Percent						
		Year	Increase						
4		FY 2005	8.42%	13,883	33,221	33,197	33,082	32,886	32,701
5		FY 2006	4.13%		17,640	17,627	17,566	17,462	17,364
6		FY 2007	4.13%			18,355	18,291	18,183	18,080
7		FY 2008	4.13%				19,045	18,933	18,826
8		FY 2009	10.90%					52,092	51,799
9		FY 2010	3.00%						15,811
10	Total Additional Service Revenue Required	13,883	50,861	69,179	87,984	139,556	154,581		
11	Total Water and Wastewater Service Revenue	409,466	445,281	463,314	480,746	530,002	542,829		
12	Transfer From (To) Rate Stabilization Fund	38,210	31,070	22,110	37,090	(40)	(650)		
13	Other Income (a)	18,195	19,501	17,289	21,129	18,990	17,161		
14	Revenues	465,871	495,852	502,713	538,965	548,952	559,340		
<b>OPERATING EXPENSE</b>									
15	Water and Wastewater Operations	221,806	229,764	235,524	244,946	253,232	261,838		
16	Direct Interdepartmental Charges	55,468	56,173	57,276	59,321	61,031	62,790		
17	Total Operating Expense	277,274	285,937	292,800	304,267	314,263	324,628		
18	NET REVENUES AFTER OPERATIONS	188,597	209,915	209,913	234,698	234,689	234,712		
<b>DEBT SERVICE</b>									
Senior Debt Service									
Revenue Bonds									
19	Outstanding Bonds	156,776	152,846	152,849	152,859	152,852	152,852		
20	Pennvest Parity Loans	384	384	384	384	384	384		
21	Series 2005A Bonds (b)		17,201	17,201	17,201	17,201	17,201		
22	Series 2005B Bonds (c)		4,491	4,491	4,491	4,491	4,491		
23	Projected Future Bonds (d)				20,642	20,642	20,642		
24	Total Senior Debt Service	157,160	174,922	174,925	195,577	195,570	195,570		
25	Total Senior Debt Service Coverage	1.20 x	1.20 x	1.20 x	1.20 x	1.20 x	1.20 x		
Subordinate Debt Service									
26	Pennvest Subordinate Loans	1,227	1,227	1,227	1,227	1,227	1,227		
27	Total Subordinate Debt Service	1,227	1,227	1,227	1,227	1,227	1,227		
28	Total Debt Service on Bonds	158,387	176,149	176,152	196,804	196,797	196,797		
29	CAPITAL ACCOUNT DEPOSIT	16,708	17,068	17,428	17,788	18,148	18,508		
30	TOTAL COVERAGE (L18/(L28+L29))	1.07 x	1.08 x	1.08 x	1.09 x	1.09 x	1.09 x		
<b>RESIDUAL FUND</b>									
31	Beginning of Year Balance	10,997	3,512	4,211	4,044	4,150	4,895		
32	Interest Income	13	0	0	0	0	0		
Deposits									
33	End of Year Revenue Fund Balance	13,502	16,698	16,333	20,106	19,744	19,407		
34	Deposit for Transfer to City General Fund (e)	4,924	4,994	4,994	4,994	4,994	4,994		
Less									
35	Transfer to Construction Fund	21,000	16,000	16,500	20,000	19,000	20,000		
36	Transfer to City General Fund	4,924	4,994	4,994	4,994	4,994	4,994		
37	End of Year Balance	3,512	4,211	4,044	4,150	4,895	4,302		
<b>RATE STABILIZATION FUND</b>									
38	Beginning of Year Balance	128,596	90,386	59,316	37,206	116	156		
39	Deposit From (To) Revenue Fund	(38,210)	(31,070)	(22,110)	(37,090)	40	650		
40	End of Year Balance	90,386	59,316	37,206	116	156	806		

(a) Includes other operating and nonoperating income, including interest income on funds and accounts transferable to the Revenue Fund.

(b) Based on \$250,000,000 bonds reflecting 5.5% interest, term of 30 years, level annual principal and interest payments, issued May 2005 with the first principal and interest payments due in FY2006.

(c) Debt service on the Series 2005B Bonds is projected to equal the debt service on the refunded Series 1995 Bonds.

(d) Based on \$300,000,000 with 5.5% interest, term of 30 years, level annual principal and interest payments, issued July 2007 with bonds reflecting first principal and interest payments due in FY2008.

(e) Transfer of interest earnings from the Bond Reserve Account must first go to the Residual Fund shown in Line 34 to satisfy the requirements for the Transfer to the City General Fund, with the balance going to the Revenue Fund included in Line 13.

Projections of annual operating revenue for water and wastewater service shown on Lines 1 and 2 of Table VI-8 include revenue from retail customers under the rate levels in effect as of July 1, 2003 and for wholesale customers the rates which have been put in place for fiscal years 2005 through 2008 as previously presented in Table VI-2. Lines 4 through 9 indicate additional service revenue required in each fiscal year to meet revenue requirements and rate covenant compliance during the study period. As mentioned earlier in this section of the report, an overall *rate* increase of approximately 13 percent was placed into effect February 1, 2005. The anticipated additional revenue to be realized as receipts during fiscal year 2005 over the five months from February through June 2005 amounts to \$13,883,000. This translates to an average overall percentage *revenue* increase of 8.42 percent during this period as shown on Line 4. Annual revenue increases of 4.13 percent are proposed for the fiscal years 2006 – 2008 which are presently being reviewed as a part of the ongoing rate hearing process.

As indicated by the positive year-end balances shown on Line 33 of Table VI-8, implementation of these revenue increases will satisfy the basic Charter requirement that the Water Department provide sufficient revenues to meet all operating expenses of the water and wastewater systems, debt service requirements on all obligations issued for the Water Department, and certain payments to the City General Fund, as well as other specific bond ordinance covenants.

In addition to meeting the requirements listed above, the authorizing General Ordinance covenants that during any given fiscal year the Water Department will, at a minimum, impose, charge, and collect in each fiscal year such water and wastewater rents, rates, fees, and charges as shall yield net revenues which shall be equal to at least 1.20 times the debt service requirements for such fiscal year (recalculated to exclude therefrom principal and interest payments in respect of Subordinated Bonds); provided that such water and wastewater rents, rates, fees, and charges shall yield net revenues which shall be at least equal to 1.00 times (i) the debt service requirements for such fiscal year (including debt service requirements in respect of Subordinated Bonds); (ii) amounts required to be deposited into the Debt Reserve Account during such fiscal year; (iii) the principal or redemption price of and interest on General Obligation Bonds payable during such fiscal year; (iv) debt service requirements on interim debt payable during such fiscal year; and (v) the Capital Account deposit amount for such fiscal year (less any amounts transferred from the Residual Fund to the Capital Account during such fiscal year).

In addition to the rate covenant of the General Ordinance described above, for each fiscal year ending on or after June 30, 2000, the City has agreed with Financial Guaranty Insurance Company (Finance Guaranty), for so long as the Series 1993 Bonds insured by Financial Guaranty are outstanding, to establish rates and charges for use by the Water and Wastewater Systems sufficient to yield Net Revenues (excluding amounts transferred from the Rate Stabilization Fund into the Revenue Fund during, or as of the end of, such fiscal year) at least equal to 90 percent of the Debt Service Requirements (excluding debt service due on any Subordinated Bonds) in such fiscal year. Further, any calculation by a consulting engineer of projected rate covenant compliance in connection with the proposed issuance of additional Bonds for each fiscal year ending on or after June 30, 2000, must state that Net Revenues (excluding amounts transferred from the Rate Stabilization Fund into the Revenue Fund during, or as of the end of, such fiscal year) in each fiscal year included in the projection period are projected to be at least 90 percent of the Debt Service Requirements (excluding debt service due on any Subordinated Bonds) in such fiscal year.

With the issuance of the Series 2003 Bonds, Financial Security Assurance, Inc. (FSA) also entered into an agreement with the Water Department to apply this “90 percent” rule so long as the Series 2003 Bonds insured by FSA are outstanding.

In order to comply with the General Ordinance covenants discussed above, as well as the requirements set forth in the City's agreements with Financial Guaranty and FSA, additional water and wastewater service revenue, above the increase in rates which took effect on February 1, 2005, is necessary during the study period, and such requirements are reflected in the revenue projections shown on Lines 5 through 9 of Table VI-8. As shown on Lines 25 and 30, the levels of additional service revenue projected for the study period will provide for the debt service coverage and requirements of the Financial Guaranty and FSA agreements as described above, and as mentioned previously the positive year-end balances shown on Line 33 indicate that Charter requirements are also satisfied. It is important to note that under the General Ordinance, which provides for the various rate covenants discussed above, that the Water Department utilizes the Rate Stabilization Fund, along with necessary increases in revenue, to manage its debt service coverage on its senior lien Bonds to the required 1.20 level each year.

Flow of funds in the Residual Fund (Lines 31-37) and the Rate Stabilization Fund (Lines 38-40) are also presented in Table VI-8 for the period through fiscal year 2010. As indicated on Line 37 of Table VI-8, a balance of between approximately \$3,000,000 and \$5,000,000 is maintained in the Residual Fund at the end of each fiscal year. In accordance



with the General Ordinance, funds in the Residual Fund may be used for the following purposes: (1) to pay operating expenses; (2) to fund transfers to any fund or account other than the Revenue Account and the Rate Stabilization Fund; (3) to pay principal and interest on any revenue bonds and general obligation debt; (4) for the payment of amounts due under capitalized leases or similar obligations; and (5) to fund required transfers to the City's General Fund. One of the most prudent uses of such funds is that they be used for capital program financing in future years. Accordingly, for purposes of this report, we have indicated the annual transfer of available Residual Fund balances to the Construction Fund in the amounts shown on Line 35 of Table VI-8.

As indicated in the previous discussion regarding the settlement of the dispute with Bucks County on March 11, 2005, and the associated contract amendment and scheduled settlement payments by Bucks County to the Water Department, there are three potential uses, or combinations of uses, of the payments resulting from this settlement. In reviewing Line 40 of Table VI-8, the projected end of year balance in the Rate Stabilization Fund, it is noted that the Rate Stabilization Fund is projected to be nearly depleted by the end of fiscal year 2008. Accordingly, it is urged that at least a portion of the payments from the Bucks County settlement be allowed to remain in the Rate Stabilization Fund to provide a working capital balance to enable more flexible day to day financial operations within the Water Department, as well as to mitigate the projected revenue increase indicated for fiscal year 2009.

In conclusion, based upon estimated future annual financial operations of the Water and Wastewater Systems, it is our opinion that the Water and Wastewater Systems will yield pledged Project Revenues (including projected revenue increases indicated in this report resulting from rate increases which may be imposed after an administrative process without further legislation) over the amortization period of the Bonds sufficient to meet the payment or deposit requirements of: all expenses of operation, maintenance, repair and replacement of the Water and Wastewater Systems; all reserve funds required to be established out of such Project Revenues; the principal or redemption price and interest on all Bonds, as the same become due and payable, for which such Project Revenues are pledged; and, the Rate Covenants set forth in Section 5.01 of the General Ordinance. In addition, the Net Revenues are currently sufficient to comply with the Rate Covenant and are projected to be sufficient (including projected revenue increases indicated in the report resulting from rate increases which may be imposed after an administrative process without further legislation) to comply with the Rate Covenant for each of the two Fiscal Years following the Fiscal Year in which the Bonds are issued.

In conducting our analyses and in forming an opinion of the projection of future operations summarized in this report, we have made certain assumptions with respect to conditions, events, and circumstances that may occur in the future. The methodology utilized in performing the analyses follows generally accepted practices for such projections. Such assumption and methodologies are summarized in this report and are reasonable and appropriate for the purpose for which they are used. While we believe the assumptions are reasonable and the projection methodology valid, actual results may differ materially from those projected, as influenced by the conditions, events, and circumstances that actually occur.

**APPENDIX III**

**SUMMARIES OF CERTAIN AUTHORIZATIONS FOR THE BONDS**

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## APPENDIX III

### SUMMARIES OF CERTAIN AUTHORIZATIONS FOR THE BONDS

The following are summaries of certain provisions of The First Class City Revenue Bond Act (the "Act"), the Restated General Water and Wastewater Revenue Bond Ordinance of 1989, as amended and supplemented, (the "General Ordinance") the Ninth Supplemental Ordinance to the General Ordinance (the "Ninth Supplemental Ordinance"), and an agreement (the "Covenant Agreement") between the City and the Fiscal Agent containing covenants for the benefit of the Bond Insurer. The summaries are not, and should not be regarded as, complete statements of the provisions of these documents and legislation. Reference is made to the Act, the General Ordinance, the Ninth Supplemental Ordinance and the Covenant Agreement, copies of which are available from the Office of the Director of Finance, 1300 Municipal Services Building, 1401 J. F. Kennedy Boulevard, Municipal Services Building, Room 1330, Philadelphia, Pennsylvania 19102, for the complete terms and provisions thereof.

#### **THE FIRST CLASS CITY REVENUE BOND ACT (Act 234 of the General Assembly of the Commonwealth, approved October 18, 1972, P.L. 955; 53 P.S. §§ 15901-15924)**

*The 2005 Bonds are being issued under the terms of The First Class City Revenue Bond Act and the General Ordinance and pursuant to the Ninth Supplemental Ordinance. The following summarizes the terms of The First Class City Revenue Bond Act. All capitalized terms used in the following summary of The First Class City Revenue Bond Act are defined as in The First Class City Revenue Bond Act and may be differently referenced in other portions of this Official Statement.*

#### **General Authorization; Definition of Project; Bonds to be Special Obligations**

The Act is intended to provide a comprehensive authorization to the City of Philadelphia (the "City") and any other Pennsylvania cities of the first class to issue revenue bonds ("Bonds") to finance various types of projects.

The Act defines "Project" to include, among other things, any building, structure, facilities or improvements of a public nature, the related land, rights or leasehold estates in land and the related furnishings, machinery, apparatus or equipment of a capital nature, which the City is authorized to own, construct, acquire, improve, lease, operate, maintain or support; any item of construction, acquisition or extraordinary maintenance or repair thereof, the City's share of the cost of any of the foregoing or any combination thereof undertaken jointly with others; and any combination of any of or all of the foregoing or any undivided portion of the cost of any of the foregoing as may be designated as a "Project" by the City for financing purposes and in respect of which the City may reasonably be expected to receive "Project Revenues" (as defined in the Act).

Bonds issued under the Act are required to be payable solely from Project Revenues and to be secured solely by such revenues and by any reserve funds which may be created or funded in connection with the Bonds. The Bonds are not permitted to pledge the credit or taxing power of the City, to create any debt or charge against the tax or general revenues of the City, or create any lien against any of the City property other than the Project Revenues pledged therefore and reserve funds established in respect of the Bonds. The Bonds do not constitute a debt of the City, and are excluded from the calculation of the City's debt-incurring capacity under the Pennsylvania Constitution.

#### **Estimates of Future Revenues**

To establish that Project Revenues will be sufficient to amortize all Bonds outstanding, the Act requires a finding to be made in the ordinance authorizing the issuance of the Bonds that the pledged Project Revenues will be sufficient to pay any prior parity charges thereon and the principal of and interest on the Bonds. This finding is to be based on a report of the chief fiscal officer of the City filed with the City Council and supported by appropriate schedules and summaries. The report of the chief fiscal officer of the City may be based on a report of consulting engineers employed by the City to evaluate the project.

For the purpose of estimating future Project Revenues, the Act provides that only the following shall be included: (i) those rents, rates, tolls or charges to the general public which, under existing authorizations, will be reasonably collectible in such year under the schedule or rate of rents, rates or charges which are or will be in effect during such year in accordance with such ordinance, resolutions or rate schedule or which may be imposed by administrative action without further legislation; (ii) those bulk payments which may be imposed under subsisting legislation or which are provided under subsisting agreements or which are the subject of an expression of intent by the prospective obligor deemed reliable by the chief fiscal officer of the City; and (iii) those governmental subsidies or payments which, under subsisting legislation, are subject to reasonably precise calculation and, unless stated in such legislation or authorization to be of an annually or more frequently recurring nature, are payable in such year.

### **Detail of Bonds and City Covenants**

The Act provides that the ordinance authorizing the issuance of the Bonds shall fix the aggregate amounts of the Bonds to be issued from time to time and determine, or designate officers of the City to determine, the form and details of the Bonds. The City may include in its Bond ordinance various covenants with Bondholders, including covenants governing the imposition, collection and disbursement of Project Revenues, Project operation and maintenance, the establishment, segregation, maintenance, custody, investment and disbursement of sinking funds and reserves, the issuance of additional priority or parity bonds, the redemption of the Bonds and such other provisions as the City deems necessary or desirable in the interest or for the protection of the City or of such Bondholders. Under the Act the covenants, terms and provisions of the Bond ordinance made for the benefit of Bondholders constitute contractual obligations of the City, but such covenants (within limitations, if any, fixed by the Bond ordinance) may be modified by agreement with a majority in interest of the Bondholders or such larger portion thereof as may be provided in the Bond ordinance.

### **Sinking Fund**

The Act requires that the Bond ordinance shall provide for the establishment of a sinking fund for the payment of the principal of and interest on the Bonds. Payment into such sinking fund shall be made in annual or more frequent installments and shall be sufficient to pay or accumulate for payment all principal of and interest on the Bonds for which the sinking fund is established as and when the same shall become due and payable. The sinking fund shall be managed by the chief fiscal officer of the City and moneys therein to the extent not currently required, shall be invested, subject to limitations established by the Bond ordinance and the Act. Interest and profits from investment of moneys in the sinking fund shall be added to such fund and may be applied in reduction of or to complete required deposits into the sinking fund. Excess moneys in the sinking fund shall be repaid to the City for its general purposes or may be applied as may be provided in the Bond ordinance. All moneys deposited in the sinking fund are subjected to a perfected security interest for the benefit of the holders of the Bonds, for which the fund is established, until property disbursed. This perfected security interest also applies, under the terms of the Act, to moneys in the sinking fund reserve created as part of the sinking fund by the General Ordinance.

### **Refunding**

Any outstanding Bonds issued under the Act or other bonds issued for purposes for which Bonds are issuable under the Act, whether issued before or after the effective date of the Act, may from time to time be refunded by Bonds issued under the Act and are subject to the same protections and provisions required for the issuance of an original issue of Bonds. The last stated maturity date of the refunding Bonds may not be later than ten years after the last stated maturity date of the Bonds to be refunded. If outstanding Bonds are refunded in advance of their maturity or redemption date, the principal thereof and interest thereon to payment or redemption date, and redemption premium payable, if any, will no longer be deemed to be outstanding obligations when the City shall have deposited with a bank, bank and trust company or trust company, funds irrevocably pledged to the purpose, which are represented by demand deposits, interest-bearing time accounts, savings deposits, certificates of deposit (insured or secured as public funds) or specified obligations of the United States or of the Commonwealth of Pennsylvania sufficient to effect such redemption or payment or, if interest on the deposited funds to the time of disbursement is also pledged, sufficient, together with such interest, for such purpose and, in the case of redemption, shall have duly called the Bonds for redemption or given irrevocable instructions to give notice of such call.

### **Validity of Proceedings; Suits and Limitations Thereon**

Prior to the delivery of any Bonds, the City is required to file with the Court of Common Pleas of Philadelphia County (the "Court") a transcript of the proceedings authorizing the issuance of the Bonds. If no action is brought on or before the twentieth day following the date of recording of the transcript, or when the proceedings have been approved finally by the Court, then notwithstanding any defect or error in such proceedings, the validity of the proceedings, the City's right to issue the Bonds, the lawful nature of the purpose for which the Bonds are issued, and the validity and enforceability of the Bonds in accordance with their terms may not thereafter be inquired into judicially, in equity, at law, or by civil or criminal proceedings, or otherwise, either directly or collaterally except where a constitutional question is involved.

### **Negotiable Instruments**

The Act provides that Bonds issued thereunder shall have the qualities and incidents of securities under Article 8 of the Uniform Commercial Code of the Commonwealth and shall be negotiable instruments.

### **Exemption from State Taxation**

The Commonwealth pledges with the holders from time to time of Bonds issued under the Act that such Bonds, and interest thereon, shall at all times be free from taxation within and by the Commonwealth, but this exemption does not extend to underwriting profits or to gift, succession or inheritance taxes or any other taxes not levied directly on the Bonds and the receipt of interest thereon.

### **Defaults and Remedies**

If the City should fail to pay the principal of or interest on any Bond when the same shall be due and payable, the remedy provisions of the Act permit the holder of such Bond, subject to the limitations described below, to recover the amount due in an action in Philadelphia Common Pleas Court; but a judgment rendered in favor of the Bondholder in such an action is collectible only from Pledged Amounts. The holders of 25% or more in aggregate principal amount of the Bonds of such series then outstanding which are in default, whether because of failure of timely payment which is not cured in 30 days, or failure of the City to comply with any other provisions of the Bonds or any Bond ordinance, may appoint a trustee to represent them. On being appointed, the trustee shall be the exclusive representative for the affected Bondholders and the individuals rights of action described above shall no longer be available. The trustee may, and upon written request of the holders of 25% or more in aggregate principal amount of Bonds in default, and on being furnished with indemnity satisfactory to it, shall, take one or more of the following actions, which, if taken, shall preclude similar action, whether previously or subsequently initiated, by individual holders of Bonds; enforce, by proceedings a law or in equity, all rights of the holders of the Bond; bring suit on the Bonds; bring in suit in equity to require the City to make an accounting for all pledged Project Revenues received and to enjoin unlawful action or action in violation of the holders' rights; and, after 30 days' written notice to the City, and subject to any limitations in the Bond ordinance, declare the unpaid principal of the Bonds to be immediately due and payable, together with interest thereon at the rates stated in the Bonds until final payment, and upon the curing of all defaults, to annual such declaration. In any suit, action or proceeding by or on behalf of holders of defaulted Bonds, trustee fees and expenses, including operating costs of a project and reasonable counsel fees, shall constitute taxable costs, and all such costs and expenses allowed by the Court shall be deemed additional principal due on the Bonds and shall be paid in full from any recovery prior to any distribution to the holders of the Bonds. The General Ordinance limits any such recovery to Pledged Amounts. The trustee shall make distribution of any sums so collected in accordance with the Act.

### **Refunding with General Obligation Bonds**

Upon certification by the City's chief fiscal officer that Project Revenues pledged for the payment of Bonds have become insufficient to meet the requirements of the ordinance or ordinances under which the Bonds were issued, the City Council is empowered, but not required, subject to applicable Pennsylvania constitutional debt limitations, to authorize the issuance and sale of general obligation refunding bonds of the City, without limitation as to rate of interest and in such principal amount (subject to the aforesaid limitations on indebtedness) as may be required, together with other available funds, to pay and redeem such Bonds including principal, interest to the date

fixed for redemption or payment and premium, whether or not the principal of or interest on the refunding bonds shall exceed the principal of or interest on the bonds to be refunded.

**THE RESTATED GENERAL WATER AND WASTEWATER  
REVENUE BOND ORDINANCE OF 1989**

**(Ordinance of the City Council approved  
June 24, 1993 - Bill No. 544)**

*The following is a summary of certain terms defined in the Restated General Water and Wastewater Revenue Bond Ordinance of 1989 (the "General Ordinance") and used in this Official Statement. Reference should be made to the General Ordinance for a full and complete statement of its terms and any capitalized terms used herein but not otherwise defined. The 2005 Bonds are being issued under the terms of the General Ordinance and pursuant to the Ninth Supplemental Ordinance. The Ninth Supplemental Ordinance (see below) sets forth the specific terms of the 2005 Bonds. The following summarizes the terms of the General Ordinance, prior to being supplemented pursuant to the Ninth Supplemental Ordinance. All capitalized terms used in the following summary of the General Ordinance are defined as in the General Ordinance, prior to being supplemented pursuant to the Ninth Supplemental Ordinance, and may be differently referenced in other portions of this Official Statement.*

**Certain Definitions**

*Accredited Value* means, with respect to Capital Appreciation Bonds, the amount to which, as of any specified time, the Original Value of any such Bond has been increased by accretion, all as may be provided in an applicable Supplemental Ordinance.

*Act* means The First Class City Revenue Bond Act, approved October 18, 1972 (Act No. 234, 53 P.S. §15901 to 15924), as from time to time amended.

*Bond* or *Bonds* means, upon and after issuance of the first series of bonds under the General Ordinance, if and to the extent Outstanding at any time, (i) the Existing Bonds and (ii) all series of bonds authorized and issued under one or more supplemental ordinances amending and supplementing the General Ordinance.

*Bond Committee* means the Mayor, City Controller and City Solicitor or a majority thereof. *Bond Counsel* means a firm of nationally recognized bond counsel selected by the City.

*Bondholder* or *Holder* means any registered owner of Bonds or holder of Bonds issued in coupon form at the time Outstanding.

*Capital Account* means the Capital Account within the Construction Fund.

*Capital Account Deposit Amount* means an amount equal to one percent (1%) of the depreciated value of property, plant and equipment of the System or such greater amount as shall be annually certified to the City in writing by a Consulting Engineer as sufficient to make renewals, replacements and improvements in order to maintain adequate water and wastewater service to the areas served by the System.

*Capital Appreciation Bonds* means any Bonds issued under the General Ordinance which do not pay interest either until maturity or until a specified date prior to maturity, but whose Original Value increases periodically by accretion to a final Maturity Value.

*Charges Account* means the Charges Account established within the Sinking Fund to provide for the payment of fees under any Credit Facility to the extent payment of such fees are not otherwise provided.

*City Controller* means the head of the City's auditing department as provided by the Philadelphia Home Rule Charter.



*City Solicitor* means the head of the City's law department as provided by the Philadelphia Home Rule Charter.

*Code* means the Internal Revenue Code of 1986, as amended.

*Construction Fund* means the Construction Fund established pursuant to the General Ordinance.

*Consulting Engineer* means a nationally recognized Independent registered consulting engineer or a nationally recognized Independent firm of registered consulting engineers, in either case having experience in the design and analysis of the operation of water and wastewater systems of the magnitude and scope of the System.

*Credit Facility* means any letter of credit, standby bond purchase agreement, line of credit, surety bond, insurance policy or other insurance commitment or similar agreement (other than a Qualified Swap or an Exchange Agreement) that is provided by a commercial bank, insurance company or other institution, with a current long term rating (or whose obligations thereunder are guaranteed by a financial institution with a long term rating) from Moody's and S&P not lower than the credit rating of any Series of Bonds which has no Credit Facility, to provide support for a Series of Bonds or for any issue of Subordinated Bonds, and shall include any Substitute Credit Facility.

*Debt Reserve Account* means the Debt Reserve Account of the Sinking Fund established in the General Ordinance.

*Debt Reserve Requirement* means with respect to all Bonds, an amount equal to the lesser of (i) the greatest amount of Debt Service Requirements payable in any one Fiscal Year (except that such Debt Service Requirement will be computed as if any Qualified Swap did not exist and the Debt Service Requirements attributable to any Variable Rate Bonds may be based upon the fixed rate of interest as set forth in the Supplemental Ordinance or Determination for such Bonds), determined as of any particular date or (ii) the maximum amount to be financed with proceeds of Bonds permitted by Section 148(d) (1) of the Code (or any successor provision).

*Debt Service Account* means the Debt Service Account of the Sinking Fund established in the General Ordinance.

*Debt Service Requirements*, with reference to a specified period, means:

- (a) amounts required to be paid into any mandatory sinking fund established for the benefit of Bonds during the period;
- (b) amounts needed to pay the principal or redemption price of Bonds maturing during the period and not to be redeemed at or prior to maturity through any sinking fund established for the benefit of Bonds;
- (c) interest payable on Bonds during the period, with adjustment for capitalized interest or redemption through any sinking fund established for the benefit of Bonds; and
- (d) all net amounts, if any, due and payable by the City under a Qualified Swap during such period.

For purposes of estimating Debt Service Requirements for any future period, (i) any Option Bond outstanding during such period shall be assumed to mature on the stated maturity date thereof, except that the principal amount of any Option Bond tendered for payment and cancellation before its stated maturity date shall be deemed to accrue on the date required for payment pursuant to such tender; and (ii) Debt Service Requirements on Bonds for which the City has entered into a Qualified Swap shall be calculated assuming that the interest rate on such Bonds shall equal the stated fixed or variable rate on the Qualified Swap or, if applicable and if greater than such stated rate, the applicable rate for any Bonds issued in connection with the Qualified Swap adjusted, in the case of a variable rate obligation, as provided in the General Ordinance.

Calculation of Debt Service Requirements with respect to Variable Rate Bonds shall be subject to adjustment.

*Debt Service Withdrawal* means the aggregate amount withdrawn from the Capital Account during a Fiscal Year and applied toward the payment of principal or redemption price of or interest on Bonds or toward the elimination of a deficiency in any reserve fund established for the benefit of Bonds.

*Determination* means a determination by the Bond Committee regarding certain matters relating to the issuance of a Series of Bonds, made pursuant to the General Ordinance or the Supplemental Ordinance providing for the issuance of such Series of Bonds.

*Director Of Finance* means the chief financial officer of the City as established by the Philadelphia Home Rule Charter.

*Effective Date* means when (but only when) all Prior Bonds issued under the Prior Ordinance have been paid or defeased as set forth in Section 10 of the Act.

*Exchange Agreement* means, to the extent from time to time permitted by applicable law, any interest exchange agreement, interest rate swap agreement, currency swap agreement or other contract or agreement, other than a Qualified Swap, authorized, recognized and approved by a Supplemental Ordinance or Determination as an Exchange Agreement and providing for (i) certain payments by the City from the Residual Fund and (ii) payments by an entity whose senior long term debt obligations, other senior unsecured long term obligations or claims paying ability, or whose obligations under an Exchange Agreement are guaranteed by an entity whose senior long term debt obligations, other senior unsecured long term obligations or claims paying ability are rated not less than A3 by Moody's, A- by S&P or A- by Fitch, or the equivalent thereof by any successor thereto as of the date the Exchange Agreement is entered into; which payments by the City and counterparty are calculated by reference to fixed or variable rates and constituting a financial accommodation between the City and such counterparty.

*Existing Bonds* means the bonds originally issued under the Prior Ordinance other than Prior Bonds, which Existing Bonds shall be specified in a certificate of the Director of Finance on the Effective Date and thereafter shall be secured by the General Ordinance.

*Financial Consultant* means a firm of investment bankers, a financial consulting firm, a firm of certified public accountants or any other firm which is qualified to calculate amounts required to be rebated to the United States pursuant to Section 148(1) of the Code.

*Fiscal Agent* means a bank or other entity designated as such pursuant to the General Ordinance or its successor.

*Fiscal Year* means the fiscal year of the City.

*Fitch* means Fitch Ratings and any successor thereto.

*General Obligation Bonds* means the general obligation bonds of the City issued and outstanding from time to time to finance improvements to the System and adjudged, pursuant to the Constitution and laws of the Commonwealth of Pennsylvania, to be self-sustaining on the basis of expected Project Revenues.

*General Ordinance* means the Restated General Water and Wastewater Revenue Bond Ordinance of 1989.

*Government Obligations* means direct obligations of, or obligations the principal of and interest on which are unconditionally guaranteed by, the United States of America, including but not limited to interest obligations of the Resolution Funding Corporation or any successor thereto.

*Independent* means a person who is not a salaried employee or elected or appointed official of the City; provided, however, that the fact that such person is retained regularly by or transacts business with the City shall not make such person an employee within the meaning of this definition.

*Initial Deposit* means the initial, one time, deposit to be made by the City from any source into the Rate Stabilization Fund upon the establishment of such Rate Stabilization Fund.

*Interdepartmental Charges* means the proportionate charges for services performed for the Water Department by all officers, departments, boards or commissions of the City which are required by the Philadelphia Home Rule Charter to be included in the computation of operating expenses of the Water Department.

*Interim Debt* means any bond anticipation notes or other temporary borrowing which the City anticipates permanently financing with Bonds or other long term indebtedness under the General Ordinance or otherwise.

*Maturity Value* with respect to Capital Appreciation Bonds means the amount due on the maturity date.

*Moody's* means Moody's Investors Service and any successor thereto.

*Net Revenues* for any period means the Project Revenues collected during such period and deposited into the Revenue Fund plus (x) the amounts, if any, transferred from the Rate Stabilization Fund into the Revenue Fund during, or as of the end of, such period and (y) interest earnings during such period on moneys in any of the funds or accounts established under the General Ordinance to the extent such interest earnings are credited to the Revenue Fund pursuant to the General Ordinance minus the sum of (a) Operating Expenses incurred during such period and (b) the amounts, if any, transferred from the Revenue Fund to the Rate Stabilization Fund during, or as of the end of, such period; provided, however that in determining such Net Revenues the Initial Deposit shall not reduce such Net Revenues.

*Operating Expenses* for any period means all costs and expenses of the Water apartment necessary and appropriate to operate and maintain the System in good operating condition, and shall include, without limitation, salaries and wages, purchases of services by contract, costs of materials, supplies and expendable equipment, maintenance costs, costs of any property or the replacement thereof or for any work or project, related to the System, which is not properly chargeable to property, plant and equipment, pension and welfare plan and worker's compensation requirements, provisions for claims, refunds and uncollectible receivables and for Interdepartmental Charges, all in accordance with generally accepted accounting principles consistently applied, but Operating Expenses shall exclude depreciation, amortization, interest and sinking fund charges.

*Operating Expense Withdrawal* means the aggregate amount withdrawn from the Capital Account during a Fiscal Year and applied toward the payment of Operating Expenses.

*Option Bond* means any Bond which by its terms may be tendered by and at the option of the Holder thereof for payment by the City prior to its stated maturity date or the maturity date of which may be extended by and at the option of the Holder thereof.

*Ordinance* means the General Ordinance, as amended from time to time by one or more Supplemental Ordinances in accordance with the provisions of the General Ordinance.

*Original Value* with respect to Capital Appreciation Bonds means the principal amount paid by the initial purchasers on the date of original issuance.

*Outstanding*, when used with reference to Bonds, means, as of any date, all Bonds theretofore or thereupon being authenticated and delivered under the General Ordinance except (i) any Bonds cancelled by the Fiscal Agent at or prior to such date; (ii) Bonds (or portion of Bonds) for the payment or redemption of which moneys, equal to the principal amount, Accredited Value or redemption price thereof, as the case may be, with interest (except to the extent of any Capital Appreciation Bonds) to the date of maturity or redemption date, shall be held in trust under the General Ordinance and set aside for such payment or redemption (whether at or prior to the maturity or redemption date), provided that if such Bonds (or portions of Bonds) are to be redeemed, notice of such redemption shall have been given as provided in the General Ordinance or provision satisfactory to the Fiscal Agent shall have been made for the giving of such notice; (iii) Bonds in lieu of or in substitution for which other Bonds shall have been

authenticated and delivered pursuant to the General Ordinance; and (iv) Bonds deemed to have been paid as provided in the General Ordinance.

*Philadelphia Home Rule Charter* means the Philadelphia Home Rule Charter, as amended or superseded by any new home rule charter, adopted pursuant to authorization of the First Class City Home Rule Act approved April 21, 1949, P.L. 665 §1 et seq. (53 P.S. §13101 et seq.).

*Prior Bonds* means the bonds issued under the Prior Ordinance designated as Water and Sewer Revenue Bonds (i) the First Series through Ninth Series, and the Eleventh Series and Twelfth Series, and (ii) to the extent the following bonds are defeased on the Effective Date, the Tenth Series and the Thirteenth Series through Sixteenth Series.

*Prior Ordinance* means the General Water and Sewer Revenue Bond Ordinance of 1974 approved May 16, 1974, as amended and supplemented from time to time.

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

*Purchase and Remarketing Fund* means, with respect to each Series of Bonds subject to tender for purchase pursuant to an applicable Supplemental Ordinance or Determination, the Fund so designated in such Supplemental Ordinance.

*Qualified Escrow Securities* means funds which are represented by (a) demand deposits, interest-bearing time accounts, savings deposits or certificates of deposit, but only to the extent such deposits or accounts are fully insured by the Federal Deposit Insurance Corporation or any successor United States governmental agency, or to the extent not insured, fully secured and collateralized by Government Obligations having a market value (exclusive of accrued interest) at all times at least equal to the principal amount of such deposits or accounts, (b) if at the time permitted under the Act, obligations of any state or political subdivision thereof or any agency or instrumentality of such state or political subdivision for which cash, Government Obligations or a combination thereof have been irrevocably pledged to or deposited in a segregated escrow account for the payment when due of principal or redemption price of and interest on such obligations, and any such cash or Government Obligations pledged and deposited are payable as to principal or interest in such amounts and on such dates as may be necessary without reinvestment to provide for the payment when due of the principal or redemption price of and interest on such obligations, and such obligations are rated by any Rating Agency in the highest rating category assigned by each such rating service to obligations of the same type, or (c) noncallable Government Obligations. In each case such funds (i) are subject to withdrawal, maturing or payable at the option of the holder, at or prior to the dates needed for disbursement, provided such deposits or accounts, whether deposited by the City or by such depository, are insured or secured as public deposits with securities having at all times a market value exclusive of accrued interest equal to the principal amount thereof, (ii) are irrevocably pledged for the payment of such obligations and (iii) are sufficient, together with the interest to disbursement date payable with respect thereto, if also pledged, to meet such obligations in full.

*Qualified Rebate Fund Securities* means either:

- (a) Government Obligations; or
- (b) rights to receive the principal of or the interest on Government Obligations through (i) direct ownership, as evidenced by physical possession of such Government Obligations or unmatured interest coupons or by registration as to ownership on the books of the issuer or its duly authorized paying agent or transfer agent, or (ii)

purchase of certificates or other instruments evidencing an undivided ownership interest in payments of the principal of or interest on Government Obligations.

*Qualified Swap or Swap Agreement* means, with respect to a Series of Bonds, any financial arrangement that (i) is entered into by the City with an entity that is a Qualified Swap Provider at the time the arrangement is entered into; (ii) provides that (a) the City shall pay to such entity an amount based on the interest accruing at a fixed rate on an amount equal to the principal amount of the Outstanding Bonds of such Series, and that such entity shall pay to the City an amount based on the interest accruing on a principal amount initially equal to the same principal amount as such Bonds, at either a variable rate of interest or a fixed rate of interest computed according to a formula set forth in such arrangement (which need not be the same as the actual rate of interest borne by the Bonds) or that one shall pay to the other any net amount due under such arrangement or (b) the City shall pay to such entity an amount based on the interest accruing on the principal amount of the Outstanding Bonds of such Series at a variable rate of interest as set forth in the arrangement and that such entity shall pay to the City an amount based on interest accruing on a principal amount equal to the Outstanding Bonds of such Series at an agreed fixed rate (which shall not be the same as the rate on the Bonds) or that one shall pay to the other any net amount due under such arrangement; and (iii) which has been designated in writing to the Fiscal Agent by the City as a Qualified Swap with respect to the Bonds.

*Qualified Swap Provider* means, with respect to a Series of Bonds, an entity whose senior long term debt obligations, other senior unsecured long term obligations or claims paying ability, or whose payment obligations under a Qualified Swap are guaranteed by an entity whose senior long term debt obligations, other senior unsecured long term obligations or claims paying ability, are rated (at the time the subject Qualified Swap is entered into) at least as high as Aa by Moody's, and AA by S&P, or the equivalent thereof by any successor thereto.

*Rate Covenant* means the rate covenant contained in the General Ordinance.

*Rate Stabilization Fund* means the Rate Stabilization Fund established pursuant to the General Ordinance.

*Rating Agency* means Moody's, S&P or Fitch, to the extent that any of such rating services have issued a credit rating on the Bonds or, upon discontinuance of any of such rating services, such other nationally recognized rating service or services if any such rating service has issued a credit rating on the Bonds.

*Rebate Bond Year*, for purposes of the General Ordinance and in order to facilitate compliance with the arbitrage rebate requirements of the Code, shall mean the period or periods specified in a Supplemental Ordinance or Determination for a Series of Bonds.

*Rebate Fund* means the Rebate Fund established pursuant to the General Ordinance.

*Remarketing Agent* means a Remarketing Agent appointed in the manner provided in the applicable Supplemental Ordinance or Determination authorizing the issuance of Variable Rate Bonds.

*Remarketing Agreement* means an agreement providing for the remarketing of tendered Variable Rate Bonds by a Remarketing Agent, as more fully set forth and defined in the Supplemental Ordinance authorizing any Series of Variable Rate Bonds.

*Residual Fund* means the Residual Fund established pursuant to the General Ordinance.

*Revenue Fund* means the Revenue Fund established pursuant to the General Ordinance. S&P means Standard & Poor's Ratings Services and any successor thereto.

*Series* when applied to Bonds means, collectively, all of the Bonds of a given issue authorized by Supplemental Ordinance, as provided in the General Ordinance, and may also mean, if appropriate, a subseries of any Series if, for any reason, the City should determine to divide any Series into one or more subséries of Bonds.

*Sinking Fund* means the Sinking Fund established pursuant to the General Ordinance.

*Sinking Fund Installment* means an amount so designated which is established pursuant to the General Ordinance.

*Standby Agreement* with respect to a Series of Bonds, means an irrevocable letter of credit and related reimbursement agreement, line of credit, standby bond purchase agreement or similar agreement providing for the purchase of all or a portion of the Bonds of such Series, as amended, supplemented or extended from time to time.

*Standby Purchaser*, with respect to a Series of Bonds, means the provider of the Standby Agreement for such Series of Bonds.

*Subordinated Bond* means any Bond referred to in, and complying with the provisions of the General Ordinance with respect to Subordinated Bonds.

*Subordinated Bond Fund* means the Subordinated Bond Fund established in the General Ordinance.

*Substitute Credit Facility* means any letter of credit, standby bond purchase agreement, line of credit, surety bond, insurance policy or other insurance commitment or similar agreement (other than a Qualified Swap or an Exchange Agreement) that replaces a Credit Facility and is provided by a commercial bank, insurance company or other financial institution with a current long term credit rating (or whose obligations thereunder are guaranteed by a financial institution with a long term rating) from Moody's and S&P not lower than the credit rating of any Series of Bonds which has no Credit Facility.

*Supplemental Ordinance* means an ordinance supplemental to the General Ordinance enacted pursuant to the Act and the General Ordinance by the Council of the City.

*System* means the entire combined water system and wastewater system of the City, now Outstanding and hereafter acquired by lease, direct control, purchase or otherwise or constructed by the City, including any interest or participation of the City in any facilities in connection with said System, together with all additions, betterments, extensions and improvements to said System or any part thereof hereafter constructed or acquired and together with all lands, easements, licenses and rights of way of the City and all other works, property or structures of the City and contract rights and other tangible and intangible assets of the City now or hereafter owned or used in connection with or related to said System.

*Tender Agent*, with respect to a Series of Bonds, means any commercial bank or trust company organized under the laws of any state of the United States or any national banking association designated as a tender agent for such Series of Bonds, and its successor or successors hereafter appointed in the manner provided in the applicable Supplemental Ordinance or Determination.

*Uncertificated Bond* means any Bond which is fully registered as to principal and interest and which is not represented by an instrument.

*Variable Rate Bond* means any Bond, the rate of interest on which is subject to change prior to maturity and cannot be determined in advance of such change.

*Water and Wastewater Funds* means, collectively, the Revenue Fund, the Sinking Fund, the Subordinated Bond Fund, the Rate Stabilization Fund, the Residual Fund and the Construction Fund.

*Water Commissioner* means the head of the Water Department as provided by the Philadelphia Home Rule Charter.

*Water Department* means the Water Department of the City created pursuant to Section 3-100 of the Philadelphia Home Rule Charter.

## **SUMMARY OF OPERATIVE PROVISIONS OF THE GENERAL ORDINANCE**

*The following is a summary of certain operative provisions of the General Ordinance. Reference should be made to the General Ordinance for a full and complete statement of its provisions and the meaning of any capitalized terms used herein but not otherwise defined.*

### **Form and Terms of Bonds**

All Bonds shall be in substantially such form as may be approved by the City and set forth in the Supplemental Ordinance or Determination providing for the issuance thereof. Bonds shall be generally designated as Water and Wastewater Revenue Bonds of the City and shall be issued in such Series and within such Series in such subseries as the City may from time to time determine. The aggregate principal amount of Bonds which may be issued, authenticated and delivered under the General Ordinance is unlimited, but prior to the issuance of such Series of Bonds, the City shall enact a Supplemental Ordinance authorizing such Series and the maximum aggregate principal amount of such Series.

The Bonds shall be issued in fully registered form, except as provided in the General Ordinance and, such Bonds shall be issued upon and contain such additional terms as may be set forth in the supplemental Ordinance and Determination providing for the issuance of the Bonds in question. As required by Section 5 of the Act, all Bonds shall contain a brief statement of the Project Revenues pledged as security therefore and the priority or priorities, if any, in the application of such pledged Project Revenues and shall contain a covenant of the City to pay from the pledged Project Revenues on the respective due dates the amounts required to pay the interest on and principal or redemption price of the Bonds. Bonds may be designated as of such Series by date, number, letter or otherwise and may also have such individual letters, identifying numbers or other marks, and such descriptive panels, registration panels, legends or endorsements placed thereon as may, consistent with The General Ordinance and the Act, be determined by a Supplemental Ordinance, Determination or the Director of Finance. The Bonds may also have printed thereon or on the reverse thereof the text of an approving legal opinion with respect thereto. Any portion of the text of any Bond may be set forth on the reverse thereof with an appropriate reference on the face of the Bond.

The Bonds of each Series shall be issued in such aggregate principal amount, shall be in such denominations, shall mature or be subject to mandatory redemption in such principal amounts, on such dates and at such places, shall have such Sinking Fund Installments for Bonds of like maturity and interest rate, shall bear interest from such date or dates and at such rate or rates (including variable, adjustable, convertible or other rates), shall be subject to optional redemption at such times and upon such terms, shall (if such Bonds are Option Bonds) be subject to optional or mandatory tender, and shall contain such other terms and conditions not inconsistent with the General Ordinance or the Act, all as shall be determined by the City and set forth in the Supplemental Ordinance or Determination under which such Bonds are issued, or as shall be determined by a designated officer or officers of the City thereunto authorized by the Supplemental Ordinance, or in the absence of such provisions or designation, as shall be determined by the Director of Finance as specified below.

If permitted by applicable law, any Series of Bonds may be issued as Uncertificated Bonds and the foregoing provisions specifying the form of Bonds shall be inapplicable to such Series.

A Series of Bonds may be secured by a Credit Facility meeting the requirements of the General Ordinance and the applicable Supplemental Ordinance. In connection with the issuance of its Bonds or at any time thereafter so long as a Series of Bonds remains Outstanding, the City also may enter into Qualified Swaps or Exchange Agreements if the Bond Committee determines that such Qualified Swap or Exchange Agreement will assist the City in more effectively managing its interest costs. The City's payment obligation under any Qualified Swap shall be made from the Sinking Fund and its payment obligation under any such Exchange Agreement shall be made from the Residual Fund created pursuant to the General Ordinance. Unless otherwise acknowledged by each Rating Agency by virtue of its confirmation of the existing credit ratings on the City's Outstanding Bonds, the City will not enter into any Qualified Swap or Exchange Agreement unless it gives at least fifteen (15) day's advance notice of its intention to do so to each of the Rating Agencies, which notice shall specify the identity of the Qualified Swap Provider or Exchange Agreement counterparty, as the case may be.

### **Sale of Bonds; Taxes Not to be Assumed; Authority of Director of Finance**

Bonds may be sold by the City at public, private, or invited sale upon such terms not inconsistent with the Act and at such prices as the City may determine. To the extent that the Supplemental Ordinance authorizing any Series of Bonds and the Determination relating to such Series shall not otherwise provide:

(a) all Bonds shall be sold at competitive public sale to the purchaser or purchasers submitting the highest and best bid upon such terms and conditions of the bidding as shall be specified in an official notice of sale issued in the name of the City by the Director of Finance;

(b) no covenant to pay or assume any taxes shall be included in such Bonds; and,

(c) subject to the foregoing, the terms upon which are the prices for which the Bonds are to be sold or exchange, and the form, terms or provisions of the Bonds including, without limitation, the matters referred to in Section 5 of the Act, shall be determined by the Director of Finance who is designated in the General Ordinance as the officer of the City authorized to make such determinations based, to the extent applicable, on the prices, interest rates or other terms set forth in the highest and best proposal conforming to the bidding specifications, as ascertained and accepted on behalf of the City by the Director of Finance.

### **Payments of Principal, Redemption Price and Interest; Date of Bonds**

Unless otherwise provided in any Bond or the Supplemental Ordinance or Determination relating thereto:

(a) The principal or redemption price of each Bond shall be payable upon surrender thereof at the principal Philadelphia office of the Fiscal Agent in Philadelphia, Pennsylvania or at the principal office of a paying agent designated in such Bonds.

(b) The interest due on any Bond in fully registered form shall be payable by check or draft mailed to the Holder thereof, or at the request of a Holder of one million (1,000,000) dollars or more in principal amount or maturity value of Bonds by wire transfer to an account at a financial institution in the United States, designated in writing to the Fiscal Agent-or the paying agent, subject to such provisions concerning record dates as may be contained in such Bond and in the Supplemental Ordinance and Determination providing for the issuance and terms thereof.

(c) The principal or redemption price of and the interest on each Bond shall be payable in any coin or currency of the United States of America or Bonds of a Series may be payable in such foreign currency as may be specified in the Supplemental Ordinance authorizing such Series of Bonds, if applicable law permits.

(d) Fully registered Bonds of each Series shall be dated as of the date six months preceding the interest payment date next following the date of execution thereof by the Fiscal Agent, unless such date of execution shall be an interest payment date, in which case they shall be dated as of such date of execution; provided, however, that if, as shown by the records of the Fiscal Agent, interest on the Bonds of any Series shall be in default, fully registered Bonds of such Series issued in lieu of Bonds surrendered for transfer or exchange may be dated as of the date to which interest has been paid in full on the Bonds surrendered. Fully registered Bonds of each Series shall bear interest from their date.

Notwithstanding any other provision in The General Ordinance to the contrary, the foregoing provisions of this Section are subject to the express understanding that the principal of and interest on all Bonds issued hereunder and the premium, if any, payable on redemption thereof, shall be payable only from Project Revenues and other funds provided for the payment of Bonds. The Bonds are not general obligations of the City and do not pledge the general credit or taxing power or create any debt or charge against the general revenues of the City, or create any lien against any property of the City other than pledged Project Revenues.



## **Execution of Bonds**

The Bonds shall be executed on behalf of the City by the Fiscal Agent by the manual signatures of two of its duly authorized officers or signers, under the seal of the City which shall be either affixed or reproduced thereon in facsimile and shall be countersigned and attested by the manual or facsimile signature of the City Controller, or in such other manner as shall be authorized by law and prescribed by Supplemental Ordinance. Any such Bonds may be executed, issued and delivered notwithstanding that one or more of the officers or signers signing such Bonds or whose facsimile signature shall be upon such Bonds shall have ceased to be such officers or signers at the time when such Bonds shall actually be delivered, and although at the nominal date of the Bond any such person shall not have been such officer or signer.

## **Bond Registrar and Bond Register**

The City shall designate one or more persons to act as "Bond Registrar" for the Bonds provided that the Bond Registrar appointed for the Bonds shall be either the Fiscal Agent or a person which would meet the requirements for qualification as a Fiscal Agent imposed by the General Ordinance. Any person other than the Fiscal Agent undertaking to act as Bond Registrar shall first execute a written agreement, in form satisfactory to the City and the Fiscal Agent, to perform the duties of a Bond Registrar under the General Ordinance, which agreement shall be filed with the Fiscal Agent.

The Bond Registrar shall act as registrar and transfer agent for the Bonds. The City shall cause the Bond Registrar to designate, by a written notification to the Fiscal Agent, a specific office location at which the Bond Register is kept. The principal corporate trust office of the Fiscal Agent shall be such office in respect of the Bonds for which the Fiscal Agent is acting as Bond Registrar.

The Bond Registrar shall, in any case where it is not also the Fiscal Agent, forthwith following each regular record date and at any other time as reasonably requested by the Fiscal Agent, certify and furnish to the Fiscal Agent and any paying agent as the Fiscal Agent shall specify, the names, addresses, and holdings of Bondholders and any other relevant information reflected in the Bond Register, and the Fiscal Agent and any such paying agent shall for all purposes be fully entitled to rely upon the information so furnished to it and shall have no liability- or responsibility in connection with the preparation thereof.

## **Interchangeability of Bonds**

Fully registered Bonds, upon surrender thereof at the office of Bond Registrar with a written instrument of transfer satisfactory to the Bond Registrar, duly executed by the registered owner or his duly authorized attorney may at the option of the registered owner thereof, and upon payment by such registered owner of any charges, which the City or Bond Registrar may make, be exchanged for an equal aggregate principal amount of fully registered Bonds of the same Series, maturity and interest rate of any other authorized denominations.

## **Negotiability, Transfer and Registry.**

Fully registered Bonds, shall be transferable only by the registered owner thereof in person or by his attorney duly authorized in writing, upon surrender thereof together with a written instrument of transfer satisfactory to the Bond Registrar duly executed by the registered owner or his duly authorized attorney. Upon the transfer of any such fully registered Bonds the City shall issue and the Bond Registrar shall execute in the name of the transferee a new fully registered Bond or Bonds of the same aggregate principal amount and Series, maturity and interest rate as the surrendered Bonds.

The City, the Fiscal Agent and any paying agent designated in the Bonds may deem and treat the person in whose name any Bond shall be registered in the Bond Register as the absolute owner of such Bond, whether such Bond shall be overdue or not, for the purpose of receiving payment of, or on account of, the principal and redemption price of and interest on such Bond and for all other purposes, and all such payments so made to any such registered owner or upon his order shall be valid and effectual to satisfy and discharge the liability upon such Bond to the extent of the sum or sums so paid, and neither the City, the Fiscal Agent nor any paying agent designated in the Bond shall be affected by any notice to the contrary.

Any consent, waiver or other action taken by the registered owner of any Bond pursuant to the provisions of the General Ordinance shall be conclusive and binding upon such Holder, his heirs, successors or assigns, and upon all transferees of such Bond whether, or not notation of such consent, waiver or other action shall have been made on such Bond or on any Bond issued in exchange therefore.

### **Regulations With Respect to Exchanges and Transfers**

In all cases in which the privilege of exchanging Bonds or transferring registered Bonds is exercised, the City shall execute and deliver Bonds in accordance with the General Ordinance. All Bonds surrendered in any such exchanges or transfers shall forthwith be delivered to the Bond Registrar and cancelled or retained by the Bond Registrar. For every such exchange or transfer of Bonds, whether temporary or definitive, the City or the Bond Registrar may make a charge sufficient to reimburse it for any tax, fee or other governmental charge imposed by a governmental unit other than the City in connection with said exchange, transfer or registration and for any charge of insuring Bonds during the delivery thereof. Neither the City nor the Bond Registrar shall be required to transfer or exchange Bonds of any Series for a period of 20 days next preceding any selection of Bonds to be redeemed or thereafter until after the first mailing of any notice of redemption, or to transfer, exchange or register any Bonds called for redemption.

### **Coupon Bonds**

The Act authorizes the Bonds to be issuable in coupon form. Notwithstanding such authorization pursuant to the Act, any Series of Bonds, the interest on which is excludable from gross income tax purposes, shall not be issued in coupon form unless the Fiscal Agent receives an opinion of Bond Counsel satisfactory to the Fiscal Agent to the effect that execution and delivery of Coupon Bonds will not adversely affect the exclusion of interest on such Series of Bonds from gross income for federal income tax purposes. Taxable Bonds may be issued in coupon form as provided by Supplemental Ordinance.

### **Credit Enhancement; Exchange Agreements; Qualified Swaps**

As provided by Supplemental Ordinance or Determination relating to any Series of Bonds and subject to the requirements of the General Ordinance, the City may provide for a Credit Facility, Exchange Agreement or Qualified Swap with respect to any Series of Bonds.

### **Purpose of Bonds; Combination or Projects for Financing Purposes**

The Bonds issued under the General Ordinance shall be issued for the purpose (i) of paying the costs of Projects (as such term is defined in the Act) relating to the System, (ii) of reimbursing any fund of the City from which such costs shall have been paid or advanced, (iii) of funding any of such costs for which the City shall have outstanding bond anticipation notes or other obligations, (iv) of refunding any Bonds or bonds of the City issued for the foregoing purposes or (v) of financing anything else relating to the System permitted under the Act. The water and wastewater systems of the City (referenced in the definition of "System" above) are combined as a Project for the purpose of capital financing but the separate accounts or subaccounts required by the Philadelphia Home Rule Charter shall be maintained within the funds and accounts established under the General Ordinance in accordance with the Philadelphia Home Rule Charter.

### **Pledge or Revenues; Grant of Security Interest; Limitation on Recourse**

The City pledges, and assigns to the Fiscal Agent, its successors in trust and its assigns, for the security and payment of all Bonds (other than Subordinated Bonds) and grants to said Fiscal Agent, its successors in trust and its assigns, a lien on and security interest in (i) all Project Revenues and (ii) all amounts on deposit in or standing to the credit of the funds and accounts (other than the Rebate Fund) established in the General Ordinance together with interest earnings on amounts in such funds and accounts (other than the Rebate Fund). The Fiscal Agent shall hold and apply the security interest granted in the General Ordinance and the pledged revenues and funds described therein, in trust, for the equal and ratable benefit and security of all present and future Holders of Bonds (other than Subordinated Bonds) issued pursuant to the provisions of the General Ordinance and each Supplemental Ordinance,

without preference, priority or distinction of any one Bond over any other Bond (other than Subordinated Bonds); provided however, that the pledge of the General Ordinance may also be for the benefit of a Credit Facility and Qualified Swap, or any other person who undertakes to provide moneys for the account of the City for the payment of principal or redemption price of and interest on any Series of Bonds (other than Subordinated Bonds), on an equal and ratable basis with Bonds, to the extent provided by any Supplemental Ordinance or Determination.

For the purpose of compliance with the filing requirements of the Uniform Commercial Code in order to perfect the security interest granted by the General Ordinance, the Fiscal Agent shall be deemed to be, and the City recognizes the Fiscal Agent as, the representative of Bondholders to execute financing statements as the secured party.

Neither the Bonds nor the City's reimbursement or other contractual obligations under any Credit Facility, Qualified Swap or Exchange Agreement shall constitute a general indebtedness or a pledge of the full faith and credit of the City within the meaning of any constitutional or statutory provision or limitation of indebtedness. No Bondholder or beneficiary of any of the foregoing agreements shall ever have the right, directly or indirectly, to require or compel the exercise of the ad valorem taxing power of the City for the payment of the principal and redemption price of or interest on the Bonds or the making of any payments under the General Ordinance. The Bonds and the obligations evidenced thereby and by the foregoing agreements, shall not constitute a lien on any property of or in the City, other than the Project Revenues and amounts on deposit in or standing to the credit of the Water and Wastewater Funds and interest earnings on amounts in such funds.

### **Parity Bonds**

All Bonds issued under the General Ordinance (other than Subordinated Bonds) shall be parity Bonds equally and ratably secured by the pledge of and grant of the security interest in the Project Revenues and the amounts on deposit in or standing to the credit of the funds and accounts (other than the Rebate Fund), together with interest earnings on amounts in such funds and accounts (other than the Rebate Fund) without preference, priority or distinction as to lien or otherwise, except as otherwise provided, of any one Bond over any other Bond or as between principal and interest.

The City reserves the right, and nothing in the General Ordinance shall be construed to impair such right, to finance improvements to the System by the issuance of its general obligation bonds or by the issuance, under ordinances other than Supplemental Ordinances, of water and/or wastewater revenue bonds or notes for the payment of which Project Revenues may be used or pledged subject and subordinate to the payment from such Project Revenues of the payments described below under "Transfers From Revenue Fund" and subject to the elimination of any deficiency in any fund or account established under the General Ordinance or under any Supplemental Ordinance.

### **Establishment of Funds and Accounts**

The following funds and accounts are established by the General Ordinance and shall be held by the Fiscal Agent:

- (a) Revenue Fund;
- (b) Sinking Fund and within such Fund a Debt Service Account, a Charges Account and a Debt Reserve Account;
- (c) Subordinated Bond Fund;
- (d) Rate Stabilization Fund;
- (e) Residual Fund;
- (f) Construction Fund, and within the Construction Fund, separate accounts designated as follows:

- (i) the Existing Projects Account, into which existing proceeds, if any, of revenue bonds heretofore issued under the Act in respect of the System shall be deposited,
  - (ii) the Bond Proceeds Account, into which proceeds of Bonds issued under the General Ordinance shall be deposited, and
  - (iii) the Capital Account;
- (g) Rebate Fund.

Nothing in the General Ordinance shall be construed to prevent the City from establishing, in connection with the issuance of one or more Series of Bonds, additional funds or accounts to be held for the benefit of one or more Series of Bonds issued under the General Ordinance, as set forth in Supplemental Ordinances; provided that, no such additional funds or accounts shall be established unless, in the opinion of Bond Counsel, establishment of additional funds or accounts would not adversely affect the exclusion of interest on Bonds, if any, from gross income for federal income tax purposes.

**Segregation of Water and Wastewater Funds; Deposit of Project Revenues into Revenue Fund**

(a) The Water and Wastewater Funds shall be held separate and apart from all other funds and accounts of the City and the Fiscal Agent and the funds and accounts therein shall not be commingled with, loaned or transferred among themselves or to any other City funds or accounts except as expressly permitted by the General Ordinance.

(b) The City shall cause all Project Revenues received by it on any date to be deposited into the Revenue Fund upon receipt thereof by the City and the Fiscal Agent shall, upon receipt of Project Revenues, deposit such Project Revenues into the Revenue Fund. The City and Fiscal Agent also shall cause to be deposited into the Revenue Fund such portion of proceeds of Bonds as designated by Supplemental Ordinance or Determination and any other funds directed to be deposited into the Revenue Fund by the City. The Fiscal Agent shall, at the written direction of the City, disburse from the Revenue Fund the amounts and at the times specified below under "Transfers From Revenue Fund."

(c) If at any time sufficient moneys are not available in the Revenue Fund to pay Operating Expenses and to make transfers required pursuant to the General Ordinance, then amounts on deposit in the Construction Fund, Rate Stabilization Fund and Residual Fund may be loaned temporarily, at the written direction of the City, to the Revenue Fund for the payment of such Operating Expenses to the extent of the deficiency, until such loaned amounts are required by the Water Department for purposes of the Fund making the loan. If a similar deficiency exists in the Construction Fund, amounts on deposit in the Revenue Fund, Rate Stabilization Fund and Residual Fund may be loaned temporarily, at the written direction of the City, to the Construction Fund, to the extent of the deficiency, until required by the Water Department for purposes of the Fund making the loan.

**Transfers from Revenue Fund**

Amounts on deposit in the Revenue Fund shall be applied by the Fiscal Agent, at the written direction of the City, in the following manner and in the following order of priority:

(a) to the City or its designees to pay such sums as are necessary to meet Operating Expenses in a timely manner;

(b) (i) on or before the dates that the principal or redemption price of and interest on Bonds (other than Subordinated Bonds) or payments under a Swap Agreement or Credit Facility are due, to deposit in the Debt Service Account of the Sinking Fund the amount necessary to provide for the timely payment of the principal or redemption price of and interest on such Bonds (other than Subordinated Bonds), any payments under any swap agreement and any amounts under a Credit Facility to repay advances thereunder to pay any of the foregoing, and (ii) on or before the dates that other payments are due under any Credit Facility with respect to Bonds (other than

Subordinated Bonds) to deposit in the Charges Account of the Sinking Fund the amount necessary to make such payments;

(c) if the transfers in paragraphs (a) and (b) above are being made according to schedule, for deposit in the Debt Reserve Account, the amount, if any, required to eliminate any deficiency therein;

(d) if the transfers in paragraphs (a) and (b) above are being made according to schedule, and following any transfer required pursuant to paragraph (c) above, to deposit in any debt reserve account established within the Sinking Fund and not held for the equal and ratable benefit of all Bonds (other than Subordinated Bonds), the amount, if any, required to eliminate any deficiency therein;

(e) if the transfers in paragraphs (a) and (b) above are being made according to schedule, and following any transfer then required to be made pursuant to paragraphs (c) and (d) above, to deposit in the Subordinated Bond Fund the amount necessary to provide for the timely payment of the principal or redemption price of and interest on Subordinated Bonds, and forward to the paying agent in respect of bond anticipation notes (payable by exchange for, or out of the proceeds of the sale of Subordinated Bonds) the amount necessary to provide for the timely payment of interest thereon (to the extent not capitalized);

(f) if the transfers in paragraphs (a) and (b) above are being made according to schedule, and following any transfer required pursuant to paragraph (c), (d) and (e) above, to pay all payments, other than regularly scheduled swap payments, including, without limitation, payments due to Salomon Brothers Holding Company Inc. upon the early termination of the two swap transactions executed by the City on December 5, 2002 and amounts, other than amounts to pay advances under the Standby Bond Purchase Agreement dated as of May 1, 2005 between the City and DEPFA BANK plc, acting through its New York Branch;

(g) if the transfers in paragraphs (a) and (b) above are being made according to schedule, and following any transfer then required to be made pursuant to paragraphs (c), (d), (e) and (f) above to pay to the City the amount necessary to provide for the timely payment of the principal or redemption price of and interest on General Obligation Bonds;

(h) if the transfers in paragraphs (a) and (b) above are being made according to schedule, and following any transfer then required to be made pursuant to paragraphs (c), (d), (e), (f) and (g) above, to transfer to the Rate Stabilization Fund such amount as the Water Commissioner may determine, the first such determination to be made on the Effective Date and to include the balance on that date in the Renewal and Replacement Fund created under the Prior Ordinance and the unencumbered operating balance of the Water Department as of the end of the Fiscal Year immediately preceding the Effective Date;

(i) if the transfers in paragraphs (a) and (b) above are being made according to schedule, and following any transfer then required to be made pursuant to paragraphs (c), (d), (e), (f), (g) and (h) above, to transfer to the Capital Account of the Construction Fund on June 20, of each Fiscal Year (or the first business day following June 20 if June 20 is not a business day) an amount equal to the sum of (i) the Capital Account Deposit Amount, (ii) the Debt Service Withdrawal for the preceding Fiscal Year and (iii) the Operating Expense Withdrawal for the preceding Fiscal Year, less any amounts transferred during the Fiscal Year to such Capital Account from the Residual Fund; and

(j) if the transfers in paragraphs (a) and (b) above are being made according to schedule, and following any transfer then required to be made pursuant to paragraphs (c), (d), (e), (f), (g), (h) and (i) above and after providing for the repayment of any inter-Fund loans, to transfer as of June 30 of each year all remaining amounts to the Residual Fund.

Notwithstanding the foregoing, nothing in the General Ordinance shall prevent the City from directing the transfer of amounts on deposit in any fund or account established under the General Ordinance into the Rebate Fund in the amounts and at the times specified below under "Funds and Accounts — Rebate Fund."

## **Sinking Fund**

The General Ordinance provides that the Sinking Fund is to be a consolidated fund for the equal and proportionate benefit of the Holders of all Bonds (other than Subordinated Bonds) from time to time Outstanding and each account therein may be invested and reinvested on a consolidated basis.

The Fiscal Agent, as directed by the City by Supplemental Ordinance, Determination or other written direction, shall pay out of the Debt Service Account of the Sinking Fund to the designated paying agent or agents (i) on or before each interest payment date for any of the Bonds (other than Subordinated Bonds) the amount required for the interest payable on such date; and (ii) on or before each principal, redemption or prepayment date for any Bonds (other than Subordinated Bonds), the amount required for the principal, redemption or prepayment payable on such date, and (iii) on or before the respective due dates the amounts, if any, due under any Swap Agreements. Such amounts shall be applied by the designated paying agent or agents on the due dates thereof. The Fiscal Agent shall also pay out of the Debt Service Account of the Sinking Fund the accrued interest included in the purchase price of Bonds purchased for retirement and on or before the due dates any amounts owing by the City under any Credit Facility on account of advances to pay principal of or interest or redemption premium on Bonds (other than Subordinated Bonds).

Amounts accumulated in the Debt Service Account with respect to any Sinking Fund Installment (together with amounts accumulated therein with respect to interest on the Bonds for which such Sinking Fund Installment was established) if so directed by the City, shall be applied by the Fiscal Agent, on or prior to the 60th day preceding the due date of such Sinking Fund Installment, to the purchase of Bonds of the Series, maturity and interest rate within each maturity for which such Sinking Fund Installment was established. All purchases of Bonds pursuant to this provision shall be made at prices not exceeding the applicable sinking fund redemption price of such Bonds plus accrued interest, and such purchases shall be made by the Fiscal Agent as directed by the City. As soon as practicable after the 42nd day preceding the due date of any such Sinking Fund Installment, the Fiscal Agent shall proceed to call for redemption, by giving notice as provided in the General Ordinance, on such due date Bonds of the Series, maturity and interest rate within each maturity for which such Sinking Fund Installment was established (except in the case of Bonds maturing on a Sinking Fund Installment date) in such amount as shall be necessary to complete the retirement of the unsatisfied balance of such Sinking Fund Installment after making allowance for any Bonds purchased with moneys held in the Subordinated Bond Fund which the City has directed the Fiscal Agent to apply as a credit against such Sinking Fund Installment. The Fiscal Agent shall pay out of the Sinking Fund to the appropriate paying agent or agents, on or before such redemption date (or maturity date) the amount required for the redemption of the Bonds so called for redemption (or for the payment of such Bonds then maturing) and such amount shall be applied by such paying agent or agents to such redemption (or payment). All expenses in connection with the purchase or redemption of Bonds shall be paid by the City from Project Revenues.

In the event of the refunding of any Bonds, the Fiscal Agent shall, if the City so directs, withdraw from the Sinking Fund all, or any portion of, the amounts accumulated therein with respect to principal or interest on the Bonds being refunded and deposit such amounts with itself or another financial institution serving as escrow agent to be held for the payment of the principal or redemption price, if applicable, and interest on the Bonds being refunded; provided that such withdrawal shall not be made unless immediately thereafter the Bonds being refunded shall be deemed to have been paid as described below under "Deposit of Funds for Payment of Bonds." In the event of a refunding, the City may also direct the Fiscal Agent to withdraw from the Sinking Fund all, or a portion of, the amounts accumulated therein with respect to principal and interest on the Bonds being refunded and deposit such amounts in any fund or account established under the General Ordinance.

If any Bond shall not be presented for payment when the principal thereof becomes due, either at maturity or otherwise or at the date fixed for redemption thereof, if moneys sufficient to pay such Bond shall have been deposited with the Fiscal Agent, it shall be the duty of the Fiscal Agent to hold such moneys, without liability to the City, any Bondholder or any other person for interest thereon, for the benefit of the owner of such Bond. Notwithstanding the foregoing, any moneys in the Sinking Fund for the payment of the interest, principal or redemption premium of Bonds unclaimed for two (2) years after the due date shall be repaid to the City but such repayment shall not discharge the obligation, if any, for which such moneys were previously held in the Sinking Fund; provided, however, that such repayment shall not be made unless, at the time of such repayment, there shall exist no deficiency in any fund or account established under the General Ordinance or any Supplemental Ordinance.

The Fiscal Agent shall pay out of the Charges Account to the appropriate payees any fees, expenses and other amounts due under any Credit Facility with respect to Bonds (other than Subordinated Bonds), to the extent such amounts are not paid from the Debt Service Account.

### **Credits Against Sinking Fund Installments**

If at any time Bonds of any Series or maturity for which Sinking Fund Installments shall have been established are purchased or redeemed other than (i) from amounts accumulated in the Debt Service Account or (ii) Bonds deemed to have been paid as described under "Deposit of Funds for Payment of Bonds" below, and, with respect to such Bonds which have been deemed paid, irrevocable instructions have been given to the Fiscal Agent to redeem or purchase the same on or prior to the due date of the Sinking Fund Installment to be credited under this paragraph, the City may from time to time and at any time by written notice to the Fiscal Agent specify the portion, if any, of such Bonds so purchased, redeemed or deemed to have been paid and not previously applied as a credit against any Sinking Fund Installment which are to be credited against future Sinking Fund Installments. Such notice shall specify the amounts of such Bonds to be applied as a credit against such Sinking Fund Installment or Installments and the particular Sinking Fund Installment or Installments against which such Bonds are to be applied as a credit; provided, however that none of such Bonds may be applied as a credit against a Sinking Fund Installment to become due less than 42 days after such notice is delivered to the Fiscal Agent. All such Bonds to be applied as a credit shall be surrendered to the Fiscal Agent for cancellation on or prior to the due date of the Sinking Fund Installment against which they are being applied as a credit. The portion of any such Sinking Fund Installment remaining after the deduction of any such amounts credited toward the same (or the original amount of any such Sinking Fund Installment if no such amounts shall have been credited toward the same) shall constitute the unsatisfied balance of such Sinking Fund Installment for the purpose of calculation of Sinking Fund Installments due on a future date.

### **Debt Reserve Account**

The General Ordinance provides that, unless otherwise provided in the applicable Supplemental Ordinance, the City is required, under direction of the Director of Finance, to deposit in the Debt Reserve Account from the proceeds of sale of each Series of Bonds issued under the General Ordinance, an amount which, when added to the Outstanding balance in the Debt Reserve Account, will be equal to the Debt Reserve Requirement immediately after the issuance of such Series of Bonds. The money and investments in the Debt Reserve Account shall be held and maintained in an amount equal at all times to the Debt Reserve Requirement provided that if the Supplemental Ordinance authorizing a Series of Bonds shall authorize the accumulation from Project Revenues of a reserve of such amount in respect of such Bonds over a period of not more than three Fiscal Years after the issuance and delivery of such Bonds, then the full payment of the annual deposits required under such Supplemental Ordinance will meet the Debt Reserve Requirements of the General Ordinance in respect of such Bonds.

The General Ordinance provides that, if at any time and for any reason, the moneys in the Debt Service Account of the Sinking Fund are insufficient to pay as and when due, the principal of (and premium, if any) or interest on any Bond or Bonds or other obligations payable from the Debt Service Account then due (including under Swap Agreements and Credit Facilities), the Fiscal Agent is authorized and directed to withdraw from the Debt Reserve Account and pay over the amount of such deficiency for deposit in the Debt Service Account. If by reason of such withdrawal or for any other reason there shall be a deficiency in the Debt Reserve Account, the City covenants to restore such deficiency promptly from Net Revenues.

The General Ordinance provides that any moneys in the Debt Reserve Account in excess of the Debt Reserve Requirement is required to be transferred to the Revenue Fund at the written direction of the City.

Notwithstanding the foregoing provisions, in lieu of the required deposits into the Debt Reserve Account, the City may cause to be deposited into the Debt Reserve Account a surety bond or an insurance policy payable to the Fiscal Agent for the account of the Bondholders and any Qualified Swap or an irrevocable letter of credit in an amount equal to the difference between the Debt Reserve Requirement and the remaining sums, if any, then on deposit in the Debt Reserve Account. The surety bond, insurance policy or letter of credit shall be payable (upon the giving of notice as required thereunder) on any interest payment date on which moneys will be required to be

withdrawn from the Debt Reserve Account and applied to the payment of debt service on the Bonds and such withdrawal cannot be met by amounts on deposit in the Debt Reserve Account or provided from any other Fund under the General Ordinance. The insurer providing such surety bond or insurance policy shall be an insurer whose municipal bond insurance policies insuring the payment, when due, of the principal of and interest on municipal bond issues results in such issues being rated in not lower than the second highest rating category (without regard to rating subcategories) by either Moody's or S&P. The letter of credit issuer shall be a bank or trust company which is rated not lower than the second highest rating category (without regard to ratings sub-categories) by either Moody's or S&P. If a disbursement is made pursuant to a surety bond, an insurance policy or a letter of credit provided pursuant to this paragraph, the City shall be obligated either (i) to reinstate the maximum limits of such surety bond, insurance policy or letter of credit or (ii) to deposit into the Debt Reserve Account, funds in the amount of the disbursement made under such surety bond, insurance policy or letter of credit, or a combination of such alternatives, as shall provide that the amount in the Debt Reserve Account equals the Debt Reserve Requirement within a time period not longer than would be required to restore the Debt Reserve Account by operation of this provision and from the same source of funds as provided in the General Ordinance. Upon the occurrence of any reduction or suspension or any credit rating with respect to such surety bond, insurance policy or letter of credit (or the provider thereof) required by the General Ordinance, the City shall so notify the provider of the surety bond, insurance policy or letter of credit and prior to the effective date of such cancellation shall either provide a substitute surety bond, insurance policy or letter of credit meeting the above-described requirements or shall deposit cash in the Debt Reserve Account so that the amount in such Account shall equal the Debt Reserve Requirement.

### **Subordinated Bond Fund**

Subject to the third paragraph under this heading, the Fiscal Agent shall apply amounts in the Subordinated Bond Fund to the payment of the principal of, redemption premium, if any, and interest on Subordinated Bonds of a Series and to payments due under any Credit Facilities and Exchange Agreements with respect to Subordinated Bonds in accordance with the provisions of, and subject to the priorities and limitations and restrictions provided in, the Supplemental Ordinance and Determination authorizing such Series of Subordinated Bonds.

At any time and from time to time the City may deposit in the Subordinated Bond Fund for the payment of the principal of, redemption premium, if any, and interest on Subordinated Bonds amounts received from any source other than Project Revenues which is not inconsistent with the General Ordinance or any Supplemental Ordinance or Determination.

If at any time the amounts in the Sinking Fund shall be less than the current requirement of such fund pursuant to paragraphs (b) and (c) under "Transfers from Revenue Fund" above and there shall not be on deposit in the Debt Reserve Account, the Capital Account or the Residual Fund available moneys sufficient to cure such deficiency, then the Fiscal Agent shall withdraw from the Subordinated Bond Fund and deposit in the Sinking Fund the amount necessary (or all the moneys in said fund, if less than the amount necessary) to eliminate such deficiency.

Any moneys in the Subordinated Bond Fund for the payment of the interest, principal or redemption premium of Subordinated Bonds unclaimed for two years after the due date are to be repaid to the City but such repayment shall not discharge the obligation, if any, for which such moneys were previously held in the Subordinated Bond Fund; provided, however, that such repayment shall not be made unless, at the time of such repayment, there shall exist no deficiency in any fund or account established under the General Ordinance or any Supplemental Ordinance.

### **Funds and Accounts**

*Construction Fund:* Pursuant to the General Ordinance, proceeds of Bonds issued for capital purposes are to be deposited into the Bond Proceeds Account of the Construction Fund and disbursed according to established procedures of the City.

The Fiscal Agent shall on the Effective Date deposit in the Existing Projects Account proceeds of Prior Bonds as directed by a Supplemental Ordinance or Determination; deposit in the Bond Proceeds Account the proceeds of Bonds as directed by a Supplemental Ordinance or Determination; and deposit in the Capital Account



any amounts transferred pursuant to paragraph (h) under "Transfers from Revenue Fund" above. Amounts in the Existing Projects Account and Bond Proceeds Account shall be applied as directed in writing by the City for purposes permitted by the Act and the Bonds and such other purposes as are permitted under the General Ordinance.

Amounts deposited in the Capital Account may be applied at the written direction of the City to (i) payments for the cost of renewals, replacements and improvements to the System; (ii) payments into the Sinking Fund or into the Subordinated Bond Fund to cure a deficiency in one of the foregoing; or (iii) the purchase of Bonds if a Consulting Engineer shall first have certified to the City that amounts remaining on deposit in the Capital Account following the proposed purchase of Bonds will be sufficient to pay the cost of renewals, replacement and improvements to the System projected to be payable during such Fiscal Year; provided, however, that no Bond shall be purchased at a price in excess of the principal amount and redemption price which would be applicable if the Bond were redeemed at the time such Bond was first subject to redemption.

As described in paragraph (c) under "Segregation of Water and Wastewater Funds; Deposit of Project Revenues into Revenue Fund" above, the General Ordinance requires that, if at any time sufficient moneys are not available for the payment of Operating Expenses, then amounts on deposit in the Capital Account may be used for the payment of Operating Expenses to the extent of the deficiencies.

*Residual Fund:* The General Ordinance provides that amounts on deposit in the Residual Fund may be used at the written direction of the City (i) to pay Operating Expenses; (ii) to fund transfers to any fund or account established under the General Ordinance or under a Supplemental Ordinance (other than the Revenue Fund and the Rate Stabilization Fund) ; (iii) to make payments required under any Exchange Agreement; (iv) for the payment of principal, redemption premium, if any, and interest on any revenue bonds or notes (the proceeds of which were applied in respect of the System) issued under the Act but not under the General Ordinance; (v) for the payment of principal, redemption premium, if any, and interest on any General Obligation Bonds; (vi) for the payment of principal, redemption premium, if any, and interest on other general obligation debt issued in respect of the System; (vii) for the payment of amounts due under capitalized leases or similar obligations relating to the System; and (viii) to fund a transfer to the City's "General Fund" in an amount not to exceed the lower of (A) all "Net Reserve Earnings" as defined below or (B) \$4,994,000. "Net Reserve Earnings" shall mean the amount of interest earnings during the Fiscal Year on amounts in the Debt Reserve Account and the Subordinated Bond Fund less the amount of interest earnings during the Fiscal Year on amounts in any such reserve funds and accounts giving rise to a rebate obligation pursuant to Section 148(f) of the Code.

The General Ordinance provides that the City establish expenditure authority from the Residual Fund to enable it to pay Operating Expenses and the other items permitted by the General Ordinance.

*Rate Stabilization Fund:* Pursuant to the General Ordinance, as of the effective date of the General Ordinance and as of June 30 of each Fiscal Year, the City may transfer (i) from the Rate Stabilization Fund to the Revenue Fund or (ii) from the Revenue Fund to the Rate Stabilization Fund, the amount determined by the Water Commissioner to be transferred for such Fiscal Year.

*Rebate Fund:* (a) The General Ordinance provides that the Rebate Fund shall be maintained for so long as any Series of Bonds is Outstanding, and for 60 days thereafter (or such other period as may be specified by the Code and applicable regulations), for the purpose of paying to the United States Treasury the amount required to be rebated pursuant to Section 148(f) of the Code. All amounts in the Rebate Fund, including income earned from investment d amounts in the Rebate Fund, shall be held by the City free and clear of the lien created by the General Ordinance.

(b) Any moneys in the Rebate Fund are to be invested exclusively in Qualified Rebate Fund Securities and investment earnings are to be credited to the Rebate Fund. The City is required to maintain records of the date and amount of each deposit made into the Rebate Fund and of the investments made of such amounts, so that the investment earnings allocable to each deposit made into the Rebate Fund can be identified as if such deposits were made in segregated accounts; provided that the City may direct the Fiscal Agent in writing to commingle the amounts deposited into the Rebate Fund and shall not be required to segregate such deposits.

(c) The City is required to determine, or is required to retain a Financial Consultant to determine, within 30 days of the end of each Rebate Bond Year, the amount required to be rebated to the United States as described in Section 148(0 of the Code, as calculated from the date of original delivery of the related Series of Bonds. Such amount, less any amounts previously rebated to the United States as described in paragraph (e) below, is referred to as the "Required Rebate Fund Balance." To the extent that the amount on deposit in the Rebate Fund at the end of any Rebate Bond Year is in excess of the Required Rebate Fund Balance, such excess shall, at the direction of the Director of Finance, be transferred to the Sinking Fund. To the extent that the amount on deposit in the Rebate Fund at the end of any Rebate Bond Year is less than the Required Rebate Fund Balance, the City shall deposit an amount equal to such deficiency into the Rebate Fund. Notwithstanding the foregoing, under the General Ordinance the City is not required to determine the Required Rebate Fund Balance, except as required in connection with making the payments to the United States Treasury as described in paragraph (e) below, if during the preceding Rebate Bond Year there have been no investments made of amounts on deposit in any fund or account established under the General Ordinance or of Bond proceeds on deposit in other funds or accounts in "non-purpose investments" (as defined in Section 148(0(6) of the Code) having a yield higher than the yield on the related Series of Bonds.

(d) The City is required to direct the Fiscal Agent in writing to withdraw from the Rebate Fund and pay over to the United States Treasury (1) not less frequently than once each five years after the date of issuance of a Series of Bonds, an amount, as determined by the City or a Financial Consultant, equal to 90% of the Required Rebate Fund Balance and (2) not later than 60 days after the retirement of the last Bond of a Series, 100% of the Required Rebate Fund Balance with respect to such Series.

(e) The City or the Fiscal Agent, as the case may be, is required to retain records of the determinations of the amounts required to be deposited in the Rebate Fund, of the proceeds of any investments of moneys in the Rebate Fund, and of the amounts paid to the United States, until the date six years after the retirement of the last of the Bonds Outstanding.

(f) The provisions regarding the Rebate Fund may be amended or deleted from the General Ordinance without any further action of the City Council, upon receipt by the City of an opinion of Bond Counsel that such amendment or deletion will not adversely affect the exemption of interest on a Series of Bonds from Federal income tax. Any moneys on deposit in the Rebate Fund shall be transferred to the Sinking Fund to the extent permitted by any such opinion.

### **Management of Funds and Accounts**

The General Ordinance provides that the moneys on deposit in the funds and accounts established under the General Ordinance, to the extent not currently required, shall be invested and secured as required by Section 9 of the Act, all at the direction and under the management of the Director of Finance or such other chief fiscal officer of the City as may hereinafter be established.

### **Investment of Funds and Accounts**

All moneys deposited in any fund or account established under the General Ordinance or under any Supplemental Ordinance may be invested by the City or by the Fiscal Agent, at the oral or written direction of the City, in any investments permitted by law (except as otherwise provided in the General Ordinance with respect to the Debt Reserve Account and Rebate Fund); provided that any investments with respect to amounts on deposit in the funds (other than the Debt Reserve Account) and accounts established under the General Ordinance shall mature or shall be subject to redemption by the holder thereof upon demand at par no later than the date when such amounts are needed for the purposes of such funds or accounts. Interest earnings on amounts on deposit (i) in the Revenue Fund are to be credited to the Revenue Fund; (ii) in the Sinking Fund (except as provided in (iii) below) are to be credited to the Sinking Fund to the extent needed to meet Debt Service Requirements in respect of Bonds (other than Subordinated Bonds) and additional interest earnings shall be credited to the Revenue Fund; (iii) in the Debt Reserve Account shall be credited to the Debt Reserve Account until such account is fully funded and shall then be credited to the Residual Fund up to the maximum amount to be transferred to the City's General Fund and any excess is to then be transferred to the Revenue Fund; (iv) in the Subordinated Bond Fund are to be credited to the Subordinated Bond Fund to the extent needed to meet Debt Service Requirements in respect of Subordinated Bonds and additional

interest earnings shall be credited to the Revenue Fund or to such other fund or account established under the General Ordinance as the City may direct pursuant to a Supplemental Ordinance; (v) in the Residual Fund, shall be credited to the Residual Fund; (vi) in the Rate Stabilization Fund shall be credited to the Revenue Fund; (vii) in the Construction Fund shall be credited to the appropriate account of the Construction Fund or to the Revenue Fund, as the City shall direct; and (viii) in the Rebate Fund shall be credited to the Rebate Fund.

### **Valuation of Funds and Accounts**

In computing the assets of any fund or account established under the General Ordinance, investments and accrued interest thereon are to be deemed a part thereof. Such investments shall be valued on June 30 of each Fiscal Year at the lower of the cost or current market value thereof if the applicable maturity is more than one year and at par if the applicable maturity is equal to or less than one year plus accrued interest, or at the redemption price thereof, if then redeemable at the option of the holder; provided that investments in any reserve fund or reserve account of the Sinking Fund established pursuant to a Supplemental Ordinance may be valued as provided in the Supplemental Ordinance establishing it. The annual valuation is to apply for all purposes of the General Ordinance except if Bonds are issued or a fund deficit occurs based on the annual valuation, in which cases a valuation is to be made on the date Bonds are issued or the deficit is eliminated, as the case may be.

### **Covenants of the City**

*Rate Covenant:* Pursuant to the General Ordinance, the City covenants with the Bondholders that it will, at a minimum, impose, charge and collect in each Fiscal Year such water and wastewater rents, rates, fees and charges as shall yield Net Revenues which shall be equal to at least 1.20 times the Debt Service Requirements for such Fiscal Year (recalculated to exclude therefrom principal and interest payments in respect of Subordinated Bonds); provided that such water and wastewater rents, rates, fees and charges shall yield Net Revenues which shall be at least equal to 1.00 times (i) the Debt Service Requirements for such Fiscal Year (including Debt Service Requirements in respect of Subordinated Bonds); (ii) amounts required to be deposited into the Debt Reserve Account during such Fiscal Year; (iii) the principal or redemption price of and interest on General Obligation Bonds payable during such Fiscal Year; (iv) debt service requirements on Interim Debt payable during such Fiscal Year; and (v) the Capital Account Deposit Amount for such Fiscal Year (less any amounts transferred from the Residual Fund to the Capital Account during such Fiscal Year). In estimating debt service requirements on any Interim Debt for the purposes of projecting compliance with this covenant, the City is entitled to assume that (i) such Interim Debt will be amortized over a period of up to the maximum term permitted by the Act, provided however, such period shall not be in excess of the useful life of the assets to be financed, on an approximately level debt service basis and bear interest at the average interest rate on bonds of a similar maturity and credit rating (without any credit enhancement) as the Bonds outstanding under the General Ordinance. Promptly upon any material change in the circumstances which were contemplated at the time such rents, rates, fees and charges were most recently reviewed, but not less frequently than once in each Fiscal Year, the City is required to review the rents, rates, fees and charges as necessary to enable the City to comply with the foregoing requirements; provided that such rents, rates, fees and charges shall in any event produce moneys sufficient to enable the City to comply with its covenants in the General Ordinance.

In estimating Debt Service Requirements on any Variable Rate Bonds for purposes of projecting compliance with this covenant or funding the Debt Reserve Account, the City is entitled to assume that such Variable Rate Bonds will bear interest at a rate equal to (i) the average interest rate on the Variable Rate Bonds during the period of 24 consecutive calendar months preceding the date of calculation or (ii) if the Variable Rate Bonds were not Outstanding during the entire 24-month period, the average interest rate on the Variable Rate Bonds since their date of issue or (iii) such other rate as may be specified in a Supplemental Ordinance or Determination.

Pursuant to the General Ordinance, the City represents that it has, by its Code of General Ordinances, as amended, authorized the imposition of rents, rates, fees and charges by the Water Department sufficient from time to time to comply with the Rate Covenant and covenants with the Holders of Bonds that it will not repeal or materially adversely dilute or impair such authorization.

*Timely Payment of Principal, Redemption Premium and Interest:* Pursuant to the General Ordinance, the City covenants with the Holders of all Bonds Outstanding under the General Ordinance that so long as such Bonds

shall remain Outstanding it will pay or cause the Fiscal Agent or a paying agent to pay from the Project Revenues deposited in the Sinking Fund and the Subordinated Bond Fund the principal of, redemption premium, if any, and interest on all Bonds as the same shall become due and payable and as more particularly set forth in the Bonds and to pay the amounts due with respect to any and all Credit Facilities (including the reimbursement agreement or similar related agreement) and Qualified Swaps.

*Operation of System:* Pursuant to the General Ordinance, the City covenants with the Holders of all Bonds Outstanding under the General Ordinance that so long as such Bonds shall remain Outstanding it will continuously maintain the System or cause the System to be maintained in good condition and will continuously operate the System or cause the System to be operated.

*Conditions of and Provisions Relating to Issuing Bonds:* The City covenants with the Holders of all Bonds Outstanding under the General Ordinance that so long as any such Bonds shall remain Outstanding it will not issue any Series of Bonds under the General Ordinance without first complying with certain conditions stated in the General Ordinance including, without limitation, (a) the enactment of a Supplemental Ordinance, (b) the filing with the Fiscal Agent of a transcript of the proceedings relating to the issuance of such Series of Bonds, (c) the delivery to the City Council of a Consulting Engineer's Report, (d) the filing with the Fiscal Agent of certain opinions of counsel and (e) the execution of appropriate documents.

The Consulting Engineer's Report referred to in the preceding paragraph shall state that the Net Revenues are currently sufficient to comply with the Rate Covenant and are projected to be sufficient to comply with the Rate Covenant for each of the two Fiscal Years following the Fiscal Year in which the Bonds are to be issued; provided that if interest on such Bonds or a portion thereof has been capitalized, the projection shall extend to the two Fiscal Years following the Fiscal Year up to which interest has been capitalized on the Bonds or a portion thereof.

The General Ordinance provides that upon compliance with the conditions enumerated in the preceding paragraph and unless otherwise provided in the applicable Supplemental Ordinance or Determination, accrued interest on Bonds (other than Subordinated Bonds) shall be deposited in the Sinking Fund, accrued interest on Subordinated Bonds shall be deposited in the Subordinated Bond Fund, an amount sufficient to satisfy the requirements concerning the Debt Reserve Account shall be deposited in the Debt Reserve Account and the balance of the proceeds of the Bonds shall be deposited in the Bond Proceeds Account of the Construction Fund and shall be disbursed therefrom, in accordance with established procedures of the City; provided, however, that if such Bonds shall be issued for the purpose of funding or refunding Bonds previously issued by the City such proceeds shall, unless otherwise directed by the Supplemental Ordinance, be deposited in a special fund or account to be established with and held by the Fiscal Agent or another entity acting as an escrow agent and invested (if appropriate) and disbursed under the direction of the Director of Finance for the purpose of retiring the Bonds being funded or refunded.

### **Refunding Bonds**

If the City shall, by Supplemental Ordinance, authorize the issuance of refunding Bonds pursuant to Section 10 of the Act, in the absence of specific direction or inconsistent authorization in the Supplemental Ordinance, the Director of Finance is authorized in the name and on behalf of the City to take all such action, including the irrevocable pledge of proceeds and the income and profit from the investment thereof for the payment and redemption of the funded or refunded Bonds, bonds or notes and, if there shall have been provided a Qualified Swap with respect to the Bonds to be refunded, provision for the payment, if any, of all amounts due and payable by the City under such Qualified Swap, and including the publication of all required redemption notices or the giving of irrevocable instructions therefore, as may be necessary or appropriate to accomplish the funding or refunding and to comply with the requirements of Section 10 of the Act.

### **Subordinated Bonds**

The City may, at any time, or from time to time, issue Subordinated Bonds for any purpose permitted under the General Ordinance and under the Act. Subordinated Bonds shall be payable out of, and may be secured by a security interest in and a pledge and assignment of, Project Revenues and amounts on deposit in the Subordinated Bond Fund; provided, however, that any such security interest in and pledge and assignment of Project Revenues

and amounts on deposit in the Subordinated Bond Fund shall be, and shall be expressed to be, subordinate in all respects to the security interest in, and pledge and assignment of, the Project Revenues and the amounts on deposit in the funds and accounts (other than the Rebate Fund but including the Subordinated Bond Fund) established under the General Ordinance for the security of the Bonds (other than Subordinated Bonds).

### **Annual Reports**

The City covenants with the Holders of all Bonds Outstanding under the General Ordinance that so long as such Bonds shall remain Outstanding it will, within 120 days following the close of each Fiscal Year of the City or as soon thereafter as is practicable (not exceeding 150 days following the close of each Fiscal Year), file with the Fiscal Agent a report of the operation of the System, setting forth, among other things, in reasonable detail financial data concerning, and consolidated for, the water and wastewater components of the System for such Fiscal Year, including a balance sheet and a statement of income, expenses, and surplus (in each case not inconsistent with the statement of income, expenses, and other accounts of the City audited by the City Controller) prepared by the Water Department in accordance with generally accepted accounting principles consistently applied, showing compliance with the Rate Covenant, accompanied by a certificate of the Water Commissioner that the water and wastewater components of the System are in good operating condition and by a certificate of the Director of Finance that as of the date of such report the City has complied with all of the covenants in the General Ordinance and in all Supplemental Ordinances on its part to be performed. Such report shall be furnished to the Fiscal Agent in such reasonable number of copies as shall be required to meet the written requests of Bondholders therefore on a first come first served basis.

### **Disposition of Insurance Proceeds and Proceeds from the Sale of Assets**

In the event that any assets of the System are destroyed or the City shall sell any assets of the System (except in the event of the sale or transfer of all or substantially all of the assets of the System to a municipal authority), the City shall, if the insurance proceeds or the proceeds from the sale of assets exceed 1.5% of the depreciated value of property, plant and equipment of the System, as shown on the financial statements of the City for the preceding Fiscal Year, apply such amounts, at the direction of the Director of Finance or such other chief fiscal officer of the City as may hereinafter be established (i) to the retirement of the principal amount of debt incurred in respect to the System; (ii) to the reconstruction, repair or replacement of assets of the System; or (iii) to the making of capital additions or improvements to the System.

### **Bonds Not to Become Arbitrage Bonds**

The General Ordinance provides that the City covenants for the benefit of the Bondholders that, notwithstanding any other provision of the General Ordinance or any other instrument, it will neither make nor instruct the Fiscal Agent to make any investment or other use of amounts on deposit in the funds and accounts established by the General Ordinance or other proceeds of the Bonds which would cause any Series of Bonds issued under the General Ordinance as tax-exempt to be arbitrage bonds under Section 148 of the Code and the regulations thereunder to the extent that the same are applicable at the time of such investment; it will file any reports required to be filed pursuant to the Code; and it will not take or fail to take any action so as to render any Series of Bonds issued under the General Ordinance as tax-exempt to be arbitrage bonds under Section 148 of the Code.

### **Prohibition Against Certain Uses of Funds; Enforcement**

(a) The City covenants that while any Bonds are Outstanding under the General Ordinance, it will not direct the Fiscal Agent to transfer, loan or advance proceeds of the Bonds or Project Revenues from the Water and Wastewater Funds to any City account for application other than for Water Department purposes.

(b) If, on any date when a deposit is required to be made of the Project Revenues, the City fails to comply with any provision of the General Ordinance, the Fiscal Agent is authorized to and shall seek, by mandamus or other suit, action or proceeding at law or in equity, the specific enforcement or performance of the obligation of the City to cause the Project Revenues to be transferred to the Revenue Fund, and shall have any and all other rights and remedies of a fiscal agent under the General Ordinance, any Supplemental Ordinance, the Act or otherwise at law or in equity.

## **Credit Facilities and Qualified Swaps**

All or any of the foregoing covenants of the City for the benefit of the Bondholders may also be for the benefit of the providers of any Credit Facility and any Qualified Swap to the extent provided in a Supplemental Ordinance or Determination.

## **Bonds May Be Subject to Redemption**

Bonds of any Series may be subject to either optional or mandatory redemption at the times, in the order, in the amounts, at the redemption prices, and under such terms, conditions and restrictions, all as may be set forth in the Supplemental Ordinance authorizing the issuance of such Series of Bonds or in the Determination relating to such Series of Bonds or, in the absence of such provisions, as may be set forth in the Bonds of such Series, at the direction of the Director of Finance. Notwithstanding or in limitation of the foregoing, a Supplemental Ordinance or Determination for a Series of Bonds may contain provisions for optional redemption of a Series of Bonds which may be retained by the City as a call option or may be held by the City or sold simultaneously with such Series of Bonds or at future dates as determined by such Supplemental Ordinance or Determination.

## **Effect of Redemption, Payment**

Upon compliance with certain notice requirements stated in the General Ordinance, or upon irrevocable instructions to give such notice having been delivered to the Fiscal Agent, irrevocable instruction having been delivered to the Fiscal Agent to pay said Bonds or portions thereof and to pay the amount, if any, due and payable under any Qualified Swap related to said Bonds, and funds having been deposited in the Sinking Fund or the Subordinated Bond Fund (as the case may be) prior to the date fixed for redemption, the Bonds or portions thereof so called for redemption shall become due and payable on the redemption date so designated, and interest on such Bonds or portions thereof shall cease from such redemption date, whether such Bonds be presented for redemption or not. The principal amount of all Bonds or portions thereof so called for redemption, together with the premium, if any, and accrued interest thereon, shall be paid by the Fiscal Agent or any other paying agent designated in the Bonds, upon presentation and surrender thereof in negotiable form.

## **Partial Redemption**

Upon presentation of any Bond which is to be redeemed in part only, the City and the Fiscal Agent shall execute and deliver to the Holder thereof, at the expense of the City, a new Bond or Bonds of authorized denominations in a principal amount equal to and of the same Series and maturity as the unredeemed portion of the Bond or Bonds so presented.

## **Fiscal Agent**

The Fiscal Agent under the Prior Ordinance or its successor, shall be Fiscal Agent as of the Effective Date for the General Ordinance. The City may appoint a successor Fiscal Agent by Supplemental Ordinance to act as Fiscal Agent under the General Ordinance, and in connection with the Bonds issued under the General Ordinance. The Fiscal Agent shall also act as depository of the Sinking Fund and the Subordinated Bond Fund, and may act as paying agent and bonds registrar.

Nothing in the General Ordinance is to be construed to prevent the City, in accordance with law, from engaging other Fiscal Agents from time to time or to engage other paying agents of the Bonds or any Series thereof in addition to, or as a successor to the Fiscal Agent. Any entity appointed by the City as Fiscal Agent under the General Ordinance shall be a trust company or national or state bank having trust powers and combined capital and surplus of at least million \$50,000,000 and be qualified to serve pursuant to the Act. Any entity appointed by the City as Fiscal Agent under the General Ordinance as a successor to the Fiscal Agent shall assume all rights and obligations of the Fiscal Agent under the General Ordinance.

Subject to the foregoing, the General Ordinance provides that the proper officers of the City are authorized to enter into contracts or to confirm existing agreements governing the maintenance of funds and accounts and

records, the disposal of cancelled Bonds, the rights, duties, privileges and immunities of the Fiscal Agent, and such other matters as are authorized by the Act and as are customary and appropriate and to confirm the agreement of the Fiscal Agent, in its several capacities, to comply with the provisions of the Act and of the General Ordinance.

The Fiscal Agent shall keep on file a copy of each report and its accompanying certificates delivered to it pursuant to the General Ordinance for a period of ten years and shall exhibit the same to, and permit the copying thereof by, any Bondholder or his authorized representative at all reasonable times.

### **Resignation of Fiscal Agent**

The Fiscal Agent may resign and be discharged of the duties created by the General Ordinance by written resignation filed with the Director of Finance not less than 60 days before the date when such resignation is to take effect. Such resignation shall take effect on the day specified in such notice provided that a successor Fiscal Agent is appointed. If a successor Fiscal Agent is appointed prior to the date specified in the notice, the resignation shall take effect immediately on the appointment of such successor, and the City shall give the required notices described under "Appointment of Successor Fiscal Agent" below.

### **Appointment of Successor Fiscal Agent**

If the Fiscal Agent or any successor Fiscal Agent resigns, is replaced, or is dissolved or if its property or business is taken under the control of any state or federal court or administrative body, a vacancy shall exist in the office of the Fiscal Agent, and the City shall appoint a successor within 30 days of such vacancy and shall mail notice of such appointment to the Bondholders and to the registered depositories at their registered addresses by first class mail, postage prepaid, within 30 days of such appointment.

### **Defaults and Statutory Remedies; Notice to Bondholders**

If the City shall fail or neglect to pay or to cause to be paid the principal of, redemption premium, if any, or interest on any Bond or any Series of Bonds issued under the General Ordinance, whether at stated maturity or upon call for prior redemption, or if the City, after written notice to it, shall fail or neglect to make any payment owed by it as a result of a Credit Facility or Qualified Swap entered into with respect to Bonds and the provider of the Credit Facility or the Qualified Swap Provider provides written notification to the Fiscal Agent of such failure or neglect, or if the City shall fail to comply with any provision of any Bonds or with any covenant of the City contained in the General Ordinance, then, under and subject to the terms and conditions stated in the Act, the Holder or Holders of any Bond or Bonds shall be entitled to all of the rights and remedies, including the appointment of a trustee, provided in the Act; provided, however, that the remedy provided in Section 20(b)(4) of the Act may be exercised only upon the failure of the City to pay, when due, principal and redemption price (including principal due as a result of a scheduled mandatory redemption) and interest on a Series of Bonds.

Upon the occurrence of the event of default described above, or if an event occurs which could lead to a default with the passage of time and of which the Fiscal Agent has notice, the Fiscal Agent is required to, within 30 days, give written notice thereof by first-class mail to all Bondholders.

### **Remedies Not Exclusive; Effect of Delay in Exercise of Remedies**

No remedy contained in the General Ordinance or in the Act conferred upon or reserved to the trustee, if any, or to the Holder of any Bond is intended to be exclusive (except as specifically provided in the Act) of any other remedy or remedies, and each and every such remedy shall be cumulative, and shall be in addition to every other remedy given under the General Ordinance or now or hereafter existing at law or in equity or by statute.

No delay or omission of a trustee, if one be appointed pursuant to Section 20 of the Act, or of any Holder of the Bonds to exercise any right or power accruing upon any default shall impair any such right or power or shall be construed to be a waiver of any such default, or an acquiescence therein; and every power and remedy provided with respect to an event of default under the General Ordinance, by the Act or otherwise may be exercised from time to time, and as often as may be deemed expedient.

### **Remedies to be Enforced Only Against Project Revenues**

Any decree or judgment for the payment of money against the City by reason of default under the General Ordinance shall be enforceable only against the Project Revenues and the investments thereof and amounts on deposit in the funds and accounts (other than the Rebate Fund) established under the General Ordinance, and no decree or judgment against the City upon an action brought under the General Ordinance shall order or be construed to permit the occupation, attachment, seizure, or sale upon execution of any other property of the City.

### **Conveyance of System and Assignment, Assumption and Release**

The General Ordinance provides that nothing in the General Ordinance is to prevent the City from conveying and assigning to a municipal authority created pursuant to the Municipality Authorities Act of 1945, as amended, or an authority created pursuant to any other applicable statute or to another entity (the "Authority") all or substantially all (or less than substantially all, as provided below) of its right, title and interest in the System and thereupon becoming released from all of its obligations under the General Ordinance, under any Supplemental Ordinance and under the Bonds and related obligations, including, but not limited to, Credit Facilities, Qualified Swaps and Exchange Agreements, (i) if the Authority assumes in writing the City's obligations (1) to operate or cause the System to be operated and to maintain or cause the System to be maintained in good condition; and (2) to pay the principal, redemption premium, if any, and interest on all Bonds issued, and all payments due under Credit Facilities, Qualified Swaps and Exchange Agreements entered into, pursuant to the General Ordinance and then outstanding according to the terms thereof; and (ii) if the instrument of assumption provides the Bondholders or the trustee or entity serving in a similar capacity and acting on behalf of the Bondholders with the substantial equivalent of all of the rights and remedies provided in the General Ordinance and the Act; provided, however, that before the City may consummate such a conveyance and assignment and obtain a release of its obligations under the General Ordinance, under any Supplemental Ordinance and under the Bonds, certain conditions are required to have been satisfied, including, without limitation, (a) the receipt by the City and the Fiscal Agent of certain opinions of counsel, (b) the granting of a security interest by the Authority to the trustee or entity serving in a similar capacity on behalf of the Bondholders, (c) a report of a Consulting Engineer detailing, among other things, continued compliance with covenants relating to Debt Service Requirements and (d) the conveyance and assignment to the Authority of amounts in the funds and accounts established under the General Ordinance. Upon a conveyance of all or substantially all of the assets of the System to the Authority, the General Ordinance provides that the provisions of the General Ordinance are to cease being enforceable against the City.

### **Amendments and Modifications**

In addition to the enactment of Supplemental Ordinances supplementing or amending the General Ordinance in connection with the issuance of successive Series of Bonds, the General Ordinance provides that the General Ordinance and any Supplemental Ordinance may be further supplemented, modified or amended: (a) to cure any ambiguity, formal defect or omission therein or to make such provisions in regard to matters or questions arising thereunder which shall not be inconsistent with the provisions thereof and which shall not adversely affect the interests of Bondholders; (b) to grant to or confer upon Bondholders, or a trustee, if any, for the benefit of Bondholders any additional rights, remedies, powers, authority, or security that may be lawfully granted or conferred; (c) to incorporate modifications requested by any Rating Agency to obtain or maintain a credit rating on any Series of Bonds; (d) to comply with any mandatory provision of state or federal law or with any permissive provision of such law or regulation which does not substantially impair the security or right to payment of the Bonds but no amendment or modification shall be made with respect to any Outstanding Bonds to alter the amount, rate or time of payment, respectively, of the principal thereof or the interest thereon or to alter the redemption provisions thereof without the written consent of the Holders of all affected Outstanding Bonds; and (e) except as aforesaid, in such other respect as may be authorized in writing by the Holders of 67% in principal amount or Original Value in the case of Capital Appreciation Bonds of the Bonds Outstanding and affected. In the case of a Credit Facility or Qualified Swap, if and to the extent provided in the Supplemental Ordinance and Determination of Bonds related thereto, the provider thereof may be the representative of the Bondholders of such Series or portion of such Series for purposes of Bondholder consent, approval or authorization. The written authorization of Bondholders of any supplement to or modification or amendment of the General Ordinance or any Supplemental Ordinance need not approve the particular form of any proposed supplement, modification or amendment but only the substance thereof.



Bonds, the payment for which has been provided for upon the redemption thereof, are to be deemed to be not Outstanding.

### **Deposit of Funds for Payment of Bonds**

When interest on, and principal or redemption price (as the case may be) of, all Bonds issued under the General Ordinance, and all amounts owed under any Credit Facility, Qualified Swap and Exchange Agreement entered into under the General Ordinance, have been paid, or there shall have been deposited with the Fiscal Agent or an entity which would qualify as a Fiscal Agent under the General Ordinance an amount, evidenced by moneys or Qualified Escrow Securities the principal of and interest on which, when due, will provide sufficient moneys to fully pay the Bonds at the maturity date or date fixed for redemption thereof, and all amounts owed under any Credit Facility, Qualified Swap and Exchange Agreement entered into under the General Ordinance, the pledge and grant of a security interest in the Project Revenues made under the General Ordinance shall cease and terminate, and the Fiscal Agent and any other depository of funds and accounts established under the General Ordinance shall turn over to the City or to such person, body or authority as may be entitled to receive the same all balances remaining in any such funds and accounts established under the General Ordinance.

If the City deposits with the Fiscal Agent or such other qualified entity moneys or Qualified Escrow Securities sufficient to pay the principal or redemption price of any particular Bond or Bonds becoming due, either at maturity or by call for redemption or otherwise, together with all interest accruing thereon to the due date, interest on the Bond or Bonds shall cease to accrue on the due date and all liability of the City with respect to such Bond or Bonds shall likewise cease, except as provided in the following paragraph. Thereafter such Bond or Bonds shall be deemed not to be outstanding under the General Ordinance and shall have recourse solely and exclusively to the funds so deposited for any claims of whatsoever nature with respect to such Bond or Bonds, and the Fiscal Agent or such other qualified entity shall hold such funds in trust for such Holder or Holders.

Moneys deposited with the Fiscal Agent or such other qualified entity pursuant to the preceding paragraphs which remain unclaimed two years after the date payment thereof becomes due shall, upon written request of the City, if the City is not at the time to the knowledge of the Fiscal Agent or such other qualified entity (the Fiscal Agent having no responsibility to independently investigate), in default with respect to any covenant in the General Ordinance or the Bonds contained, be paid to the City; and the Holders of the Bonds for which the deposit was made shall thereafter be limited to a claim against the City; provided, however, that before making any such payment to the City, the Fiscal Agent or such other qualified entity shall, at the expense of the City, publish in a newspaper of general circulation published in Philadelphia, Pennsylvania, a notice that said moneys remain unclaimed and that, after a date named in said notice, which date shall be not less than 30 days after the date of publication of such notice, the balance of such moneys then unclaimed will be paid to the City.

The provisions regarding the deposit of funds for the payment of Bonds stated above are not be construed to limit the procedure set forth in Section 10 of the Act for calculating the principal or redemption price of and interest on any Bonds for the purpose of ascertaining the sufficiency of revenues for the purpose of Sections 7(a)(5) and 8(a) (iii) of the Act and for the purpose of determining the outstanding net debt of the City if General Obligation Bonds of the City are refunded pursuant to the Act.

### **Maintenance of Tax Exempt Status of Bonds**

No deposit of funds for the payment of bonds shall be made if, in the opinion of Bond Counsel, such action shall cause the interest on any Series of Bonds initially issued as tax exempt Bonds, to become subject to Federal income tax.

Nothing contained in the General Ordinance shall require any Series of Bonds to be structured so that interest on such Bonds will be excluded from income of the Holders thereof for the purpose of calculating Federal income tax; provided that the provisions contained in the General Ordinance are satisfied.

## **Interested Parties**

The General Ordinance provides that nothing in the General Ordinance expressed or implied is intended or is to be construed to confer upon, or to give to, any person or corporation, other than the City, the Owners of the Bonds, the Fiscal Agent, each provider of a Credit Facility, and Qualified Swap, Standby Agreement and Remarketing Agreement, any right, remedy or claim under or by reason of the General Ordinance or any covenants, condition or stipulation thereof; and all the covenants, stipulations, promises and agreements in the General Ordinance contained by and on behalf of the City shall be for the sole and exclusive benefit of the City, the Fiscal Agent, the Owners of the Bonds, each provider of a Credit Facility, Qualified Swap, Standby Agreement and Remarketing Agreement.

## **Ordinances are Contracts With Bondholders**

The General Ordinance and Supplemental Ordinances adopted pursuant to the General Ordinance are contracts with the Holders of all Bonds from time to time Outstanding thereunder and are enforceable in accordance with the provisions of the General Ordinance and the laws of Pennsylvania.

## **Effectiveness**

The General Ordinance provides that it is to become effective as to the holders of Bonds only upon consent in writing of the owners of not less than 67% in principal amount of all Bonds outstanding at the time of such consent.

## **THE NINTH SUPPLEMENTAL ORDINANCE**

*The 2005 Bonds will be issued under and are subject to the Ninth Supplemental Ordinance which supplements the provisions of the General Ordinance. Reference is made to the Ninth Supplemental Ordinance and the General Ordinance, which provide more complete details of the terms of the 2005 Bonds. All capitalized and defined terms used in the following summary of the Ninth Supplemental Ordinance which are not otherwise defined in this Official Statement are defined as in the General Ordinance.*

*NOTE: The Ninth Supplemental Ordinance authorizes an aggregate principal amount of \$480,000,000, a portion of which was issued to finance the City's Water and Wastewater Revenue Refunding Bonds Series of 2003 which refunded the City's Water and Wastewater Revenue Bonds Series of 1993 Bonds as authorized by the Ninth Supplemental Ordinance. Proceeds of the City's Water and Wastewater Revenue Refunding Bonds Series of 2005 in the aggregate principal amount of \$86,105,000 will be used to refund the City's Water and Wastewater Revenue Bonds Series of 1995, as authorized by the Ninth Supplemental Ordinance.*

The Ninth Supplemental Ordinance was enacted pursuant to The First Class City Revenue Bond Act of October 18, 1972, Act No. 234, as amended (the "Act") and constitutes a Supplemental Ordinance enacted for the purpose of authorizing one or more Series of Bonds within the meaning of the General Ordinance as supplemented and further authorizing an agreement relating to certain Qualified Swap payments to be made in connection with the outstanding City of Philadelphia, Water and Wastewater Revenue Bonds, Series of 1993 and Series of 1995 (the "Outstanding Bonds") or the refunding bonds used to refund such Outstanding Bonds.

The Ninth Supplemental Ordinance authorizes the Bond Committee, or a majority of them, on behalf of the City of Philadelphia (the "City"), to borrow, from time to time, by the issuance and sale of one or more series or subseries of Water and Wastewater Revenue Bonds of the City (the "Bonds"), a sum or sums which in aggregate shall not exceed the principal amount authorized in the Ninth Supplemental Ordinance to be expended as specified therein and summarized below. The Ninth Supplemental Ordinance further authorizes the Bond Committee, or a majority of them, on behalf of the City to enter into an agreement relating to Qualified Swap payments to be made on a parity basis with the payment of the interest on the Outstanding Bonds or the Bonds. In accordance with the General Ordinance, the Bond Committee, or a majority of them, shall approve final terms of the Bonds (including the Qualified Swap payments) in its Determination prior to, and as a condition of issuance of the Bonds. Such Determination shall be deemed a supplement to the Ninth Supplemental Ordinance.

The aggregate principal amount of the Bonds shall not exceed four hundred eighty million dollars (\$480,000,000) exclusive of original issue discount, and in the event the Bonds are issued with original issue discount, the Bond Committee, or a majority of them, is authorized to increase the aggregate principal amount of the Bonds so issued, by the amount of such original issue discount.

The Bond Committee, or a majority of them, is authorized on behalf of the City to enter into agreements specified in the Determination (the "Enhancement Agreements") with any bank, insurance company or other appropriate entity providing credit enhancement or payment or liquidity sources (collectively a "Provider") for the account of the City for the Bonds, including, without limitation, letters of credit, standby bond purchase agreements or other liquidity facilities and bond insurance. Such Enhancement Agreements may provide for payment of the principal or purchase price of, or interest on, the Bonds if the City does not pay the Bonds when due and may provide for repayment with interest to the Provider from the date of such payment.

The Ninth Supplemental Ordinance authorizes the Bond Committee, or a majority of them, or the Director of Finance, as appropriate, to make all such covenants and to take any and all such other actions on behalf of the City as may be necessary or appropriate in connection with the consummation of the transactions contemplated in the Ninth Supplemental Ordinance.

The Ninth Supplemental Ordinance provides that the Bonds shall be sold either at public competitive sale to the highest bidder or bidders or at a private negotiated sale, as the Bond Committee, or a majority of them, shall determine to be in the best interest of the city. The Bonds may be sold in a single Series or in one or more subseries, as authorized by the General Ordinance and as specified by the Determination, each of which shall be deemed a Series for purposes of the General Ordinance and shall be designated by letter as Series 2003 Bonds and 2005 Bonds, as appropriate and may include serial bonds, terms bonds, Capital Appreciation Bonds, as specified in the Determination.

The Bonds issued pursuant to the Ninth Supplemental Ordinance shall bear Interest from the dated date thereof, or the date of delivery, to maturity or prior redemption, if any, at prescribed fixed rates or variable rates. The interest on the Bonds at variable rates, if any, may accrue on a daily, weekly, monthly, quarterly, semi-annual or annual basis, on the basis of auction rates or on the basis of commercial paper periods or on such other basis as may be provided and may be payable daily, weekly, monthly, quarterly, semi-annually, annually or at the end of each auction period, at the end of each commercial paper period or on such basis as may be further provided, or may accrue to a specific date (including, but not limited to, the maturity date) and may thereafter accrue and be payable on such basis as shall be specified in the Determination. The interest on fixed rate Bonds, if any, shall be payable as provided in the Determination. The Bonds shall contain series or subseries, designations, terms and provisions as the Bond Committee, or a majority of them, shall determine to be in the best interest of the City and which are not inconsistent with the provisions of the Ninth Supplemental Ordinance, or with the Act or the General Ordinance.

The Bond Committee, or a majority of them, or the Director of Finance is further authorized, on behalf of the City, as permitted by law, to enter into Qualified Swap(s) (and an option to enter into such Qualified Swap(s)) with respect to all or a portion or portions of the Outstanding Bonds and the Bonds if it determines and certifies that such Qualified Swap(s) will assist the City in more effectively managing its interest costs and that the implementation of such Qualified Swap(s) will not impair the financial viability of the System.

The Ninth Supplemental Ordinance provides that the Bonds shall not pledge the credit or taxing power of the City, or create any debt, charge or lien against the tax, general revenues or property of the City other than the revenues pledged by the General Ordinance.

The Ninth Supplemental Ordinance provides that proceeds of the bonds shall be used only to refund and redeem all or any portion of the outstanding City Water and Wastewater Revenue Bonds Series of 1993 and Series of 1995; if applicable, pay costs related to a Qualified Swap; pay any other "project costs," as defined in the Act; and pay the issuance costs of the Bonds.

Accrued interest on Bonds issued under the Ninth Supplemental Ordinance shall be deposited in the Sinking Fund. Remaining Bond proceeds shall be deposited first in the Debt Reserve Account in an amount equal to the Debt Reserve Requirement to the extent that such requirement is not satisfied in whole or in part by available

funds of the City or by a surety bond, insurance policy or letter of credit in accordance with the General Ordinance; all other Bond proceeds and other moneys currently on deposit under the General Ordinance, including current reserves and construction funds, shall be deposited or transferred as provided in a certificate of the Director of Finance. The proceeds of the Bonds required for the defeasance of obligations to be refunded or otherwise defeased, as specified in the Ninth Supplemental Ordinance, may be deposited in an escrow fund or account.

The City covenants in the Ninth Supplemental Ordinance that, so long as any Bonds shall remain outstanding, it will make payments or cause payments to be made out of the Sinking Fund established pursuant to the General Ordinance or any of the other Water and Wastewater funds available therefore, at such times and in such amounts as shall be sufficient for the payment of the interest (including the Qualified Swap payments) on the Bonds and the principal thereof when due. Prior to enactment of the Ninth Supplemental Ordinance by City Council, an opinion of the City Solicitor shall be filed with the City Council pursuant to the Act.

The Ninth Supplemental Ordinance authorizes the Director of Finance and any other applicable City officer to make such additional covenants and to take such other action with respect to the use and investment of the proceeds of the Bonds as may be necessary or advisable in order that the Bonds shall not be "arbitrage bonds" as defined in Section 148 of the Internal Revenue Code of 1986, as amended (the "Code"), that the City will comply with the requirements of Section 148 throughout the term of the Bonds and in order to maintain the exclusion of interest on the Bonds from gross income for federal income tax purposes, and further to establish such sub-accounts within the Sinking Fund and terms or restrictions to permit issuance of the Bonds.

The Ninth Supplemental Ordinance authorizes the Director of Finance to execute and deliver a Continuing Disclosure Agreement (the "Continuing Disclosure Agreement") meeting the requirements of Rule 15c2-12 promulgated under Securities Exchange Act of 1934. The City covenants and agrees that it will comply with and carry out all of the provisions of the Continuing Disclosure Agreement.

#### **AGREEMENT REGARDING COVENANTS FOR THE BENEFIT OF THE BOND INSURER**

As noted on the front cover page of this Official Statement, the City's Water and Wastewater Revenue Refunding Bonds, Series 2005B (the "Bonds") are insured by the Bond Insurer (as defined below). The Covenant Agreement (the "Covenant Agreement") dated as of May 1, 2005 between the City and Wachovia Bank, National Association, as fiscal agent (the "Fiscal Agent") is for the benefit of the Bond Insurer and not for the benefit of the holders of the Bonds, and the City, with the consent of the Bond Insurer, may amend the Covenant Agreement at any time without the consent of the holders of the Bonds.

The following is a summary of certain terms defined in the Covenant Agreement and used in this Official Statement. Reference should be made to the Covenant Agreement for a full and complete statement of its terms and any capitalized term used herein but not defined are used as defined in the Covenant Agreement.

#### **Definitions**

"Bond Insurer" means Financial Security Assurance Inc., a New York domiciled financial guaranty insurance company, or any successor thereto or assignee thereof.

"Policy" means the municipal bond insurance policy issued by the Bond Insurer that guarantees payment of principal of and interest on the Bonds.

#### **Subrogation; Bondholder Voting Rights**

The Bond Insurer shall be deemed to be the sole holder of the Insured Bonds for the purpose of exercising any voting right or privilege or giving any consent or direction or taking any other action that the holders of the Bonds are entitled to take pursuant to Article VIII (pertaining to defaults and remedies) and Article X (pertaining to amendments and supplements) of the General Ordinance.

The Bond Insurer shall, to the extent it makes any payment of principal of or interest on the Insured Bonds, become subrogated to the rights of the recipients of such payments in accordance with the terms of the Policy.

### **Defeasance of Insured Bonds**

In addition to the limitations imposed by the Act and the General Ordinance, the Bond Insurer has imposed restrictions on the types of investments used to defease the Bonds. Upon a defeasance of the Bonds, the City is required to deliver, among other documents, a verification that sufficient funds are available to accomplish the defeasance.

### **Information Reporting Requirements**

The City has covenanted with the Bond Insurer to provide periodic financial and operational reports and notices in addition to the requirements of the General Ordinance.

### **Deposits to Debt Reserve Account**

The City must obtain the prior written consent of the Bond Insurer before depositing into the Debt Reserve Account any credit instrument instead of cash.

### **Covenant Defaults**

The Bond Insurer has imposed restrictions on the permissible grace and cure periods for defaults by the City of its obligations under the General Ordinance.

### **Additional Bonds**

The City may not issue additional Bonds under the General Ordinance if there is an uncured event of default under the Policy or if the Debt Reserve Account for the Bonds is not fully funded.

### **Additional Rate Covenant**

The City has agreed with the Bond Insurer that, in addition to the rate covenant set forth in the General Ordinance, it will establish rates and charges for the City's water and wastewater systems to yield Net Revenues (as defined in the General Ordinance) at least equal to 90% of the debt service requirements for each fiscal year that the Bonds insured by the Bond Insurer are outstanding.

### **Acceleration and Redemption of the Insured Bonds**

The Bond Insurer's consent is required prior to the acceleration or selection for redemption of the Bonds insured by the Policy.

### **Expenses of the Bond Insurer**

The City has agreed to reimburse the Bond Insurer for the Bond Insurer's expenses incurred in exercising its rights under the General Ordinance and other transaction documents relating to its insurance of the Bonds, including the Covenant Agreement.

### **Breach of Covenants with the Bond Insurer**

A breach by the City of a covenant in the Covenant Agreement will be considered a breach of a covenant with respect to the Bonds for purposes of the Act and the General Ordinance.

### **Amendments and Modifications**

No provision of the General Ordinance or the Bond Committee Determination, dated May 4, 2005, relating to the Bonds, and no material provision of the Covenant Agreement, the Bonds or the security for the Bonds may be modified without the consent of the Bond Insurer. Copies of any modifications or amendments must be sent to the rating agencies at least 10 days prior to the effective date thereof. The Bond Insurer must also provide consent prior to the City entering into any contract or taking any action that might impair or prejudice the rights of the Bond Insurer or the security or sources of payment for the Bonds.

**APPENDIX IV**

**CERTAIN INFORMATION CONCERNING THE CITY OF PHILADELPHIA**

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## **THE GOVERNMENT OF THE CITY OF PHILADELPHIA**

### **General**

The City was incorporated in 1789 by an Act of the Commonwealth of Pennsylvania 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 1684). In 1854 the General Assembly, by an act commonly referred to as the Consolidation Act, made the City's boundaries coterminous with the boundaries of Philadelphia County (the same boundaries that exist today) (the "County"), abolished all governments within these boundaries other than the City and the County and consolidated the legislative functions of the City and the County. Article 9, Section 13 of the Pennsylvania Constitution abolished all county offices in the City and provides that the City performs all functions of county government and that laws applicable to counties apply to the City.

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

Under the Home Rule Charter, as now in effect, there are today 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 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 succeed himself for one term. Each of the seventeen members of the 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 the City Council. Of the members of the City Council, ten are elected from districts and seven are elected at-large, with a minimum of two of the seven representing a party or parties other than the majority party. 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 Home Rule Charter, various City ordinances and state and federal statutes, and contractual arrangements with auditees. The City Controller must follow GAGAS, Generally Accepted Government Auditing Standards established by the federal Government Accountability Office (formerly known as the General Accounting Office), and GAAS, Generally Accepted Auditing Standards promulgated by the American Institute of Certified Public Accountants. As of June 30, 2004, the Office of the City Controller had 126 employees, including 74 auditors, 35 of whom are certified public accountants.

The City Controller post-audits and reports on the City's combined financial statements, federal assistance received by the City, the performance of City departments and the finances of the School District. The City Controller also conducts a pre-audit program of expenditure documents required to be submitted for approval, such as invoices, payment vouchers, purchase orders and contracts. Documents are selected for audit on a category and statistical basis. The Pre-Audit Division verifies that expenditures are authorized and accurate in accordance with the 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 on the reasonableness of the assumptions and estimates in the City's five-year financial plans.

The principal officers of the City's government appointed by the Mayor are the Managing Director of the City (the "Managing Director"), the Director of Finance of the City (the "Director of Finance"), who is the chief financial and budget officer and is selected from three names submitted to the Mayor by a Finance Panel, the City Solicitor (the "City Solicitor"), who is head of the Law Department, and the City Representative and Director of Commerce (the "City Representative and Director of Commerce"). These officials, together with the Mayor and the other members of the Mayor's cabinet, constitute the major policy-making group in the City's government.

The Managing Director is responsible for supervising the operating departments and agencies of the City that render the City's various municipal services. The City Solicitor acts as legal advisor to the Mayor, the City Council, and all of the agencies of the City government. The City Solicitor is also responsible for all of the City's contracts and bonds, for assisting City Council, the Mayor, and City agencies in the preparation of ordinances for introduction in City Council, and for the conduct of litigation involving the City. The City Representative and Director of Commerce is charged with the responsibility of giving wide publicity to any items reflecting the activities and accomplishments of the City, its inhabitants, and commerce and industry, and is charged with the responsibility of promoting and developing commerce and industry.

The Director of Finance is responsible for the financial functions of the City including development of the annual operating budget, the capital budget, and capital program; the City's program for temporary and long-term borrowing; supervision of the operating budget's execution, the collection of revenues through the Department of Revenue, purchasing, and some aspects of property management through the Procurement Department; and the oversight of pension administration as Chairperson of the Board of Pensions and Retirement. The Director of Finance is also responsible for the appointment and supervision of the City Treasurer, whose office manages the City's cash resources, and assists in the development and administration of the City's debt policies.

The City's former Director of Finance, Janice D. Davis, resigned from her position effective August 13, 2004 to become the Chief Financial Officer of the City of Atlanta, Georgia. The City is currently conducting a nationwide search for a new Director of Finance. Currently, the duties of the Director of Finance are being handled by Vincent J. Jannetti, Acting Director of Finance.

The following are brief biographies of Mayor Street, his chief of staff, his cabinet and the City Controller:

John F. Street, Mayor, was sworn in as Philadelphia's 97th mayor on January 3, 2000 and was re-elected to a second 4-year term on November 4, 2003. Elected to Philadelphia City Council in 1979, Mayor Street took his City Council seat in 1980. For nearly 20 years he represented the City's Fifth Councilmanic District, distinguishing himself as a fighter for working people and neighborhoods. He was unanimously elected City Council President in 1992 and again in 1996. Mayor Street received his B.A. from Oakwood College in Huntsville, Alabama, and a J.D. from Temple University Law School.

Joyce S. Wilkerson, Chief of Staff, began practicing law as a legal service attorney first in California and later in Philadelphia. Ms. Wilkerson worked as Housing Counsel at the Philadelphia Redevelopment Authority where she represented the Redevelopment Authority in its capacity as issuer of housing bonds. More recently, Ms. Wilkerson served as Chief Staff Attorney to the City Council of Philadelphia. Ms. Wilkerson has a B.A. degree from the University of Pennsylvania and a J.D. degree from Boalt Hall School of Law at the University of California, Berkeley.

Vincent J. Jannetti, Acting Secretary of Financial Oversight and Director of Finance, was appointed in December 2004. Mr. Jannetti is a life-long Philadelphian and a City employee for over 30 years. Mr. Jannetti was most recently Deputy Director of Finance for Debt Management as well as Executive Director of the Sinking Fund Commission, responsible for overseeing the issuance of new debt as well as budgeting and payment of debt service

on City general obligation bonds and revenue bonds. Mr. Jannetti earned a Bachelor of Science in Business Administration from Villanova University.

Romulo L. Diaz, Jr., was appointed on April 1, 2005 as Acting City Solicitor. The City Solicitor for the City of Philadelphia is the City's chief legal officer, the head of the City's Law Department, and a member of the Mayor's Cabinet. Prior to his appointment, Mr. Diaz was Chair of the Commercial and Regulatory Law Group of the City's Law Department, which he joined in March 2002. Prior thereto, he held numerous legal, management and policy positions at increasing levels of trust and responsibility in the federal government, including assistant administrator for management at the U.S. Environmental Protection Agency, and Deputy Chief of Staff and Counselor to the Secretary of Energy. He received the Secretary of Energy's Gold Award for coordinating the Department of Energy's reform efforts that streamlined the Department's regulations and paperwork burden. He chaired several international groups, including NATO's Petroleum Planning Committee from 1992-1995 during a major realignment of the North Atlantic Alliance. Mr. Diaz received his J.D. from the University of Texas School of Law and B.A. from the University of Texas at Austin. He is licensed to practice in Pennsylvania, New Jersey, the District of Columbia and Texas. He is a Charter Fellow of the Federal Bar Association; Treasurer of the Hispanic Bar Association of Pennsylvania; and a Director of Servicemembers Legal Defense Network and the Pan American Association of Philadelphia.

Pedro A. Ramos, Managing Director, was appointed in April 2005. Prior to his appointment as Managing Director, Mr. Ramos served as City Solicitor from March 2004. Mr. Ramos was a Vice President and the Chief of Staff to University of Pennsylvania President, Dr. Judith Rodin. Mr. Ramos joined the Penn President's Office in January 2002. Mr. Ramos' legal career started at Ballard Spahr Andrews & Ingersoll, LLP, where he worked since his graduation from law school through December 2001, when he left the partnership to work at Penn. His primary area of practice was employee benefits. Mr. Ramos is also a former member president of the Board of Education of the School District of Philadelphia. Mr. Ramos has served on several boards in the Philadelphia community. Mr. Ramos is a 1992 *cum laude* graduate of the University of Michigan Law School, a 1987 graduate of the University of Pennsylvania, and a 1983 graduate of Central High School in Philadelphia.

George R. Burrell, Jr., Secretary of External Affairs, was appointed in January 2000. While serving as a member of City Council, Mr. Burrell served as Chair of the Committees on Labor and Civil Service and Licenses and Inspections. In 1974, he began his law practice as a corporate attorney with Ragan Henry, Esquire. He later joined the law firm of Wolf Block Schorr and Solis-Cohen in 1977. In both firms, Mr. Burrell served as Chairman of their Governmental Relations Department. In 1985, before his election as an at-large member of the Philadelphia City Council, he founded Burrell, Waxman, Donaghy, and Lee. Mr. Burrell graduated from the University of Pennsylvania Wharton School in 1969. He received a J.D. from the University of Pennsylvania Law School in 1974.

Stephanie W. Naidoff, the City Representative and Director of Commerce, was appointed on March 8, 2004. Earlier, she was the founding President of the Kimmel Center for the Performing Arts from 1997 to 2001. Before taking on that assignment, she had a long career as an attorney starting out in Federal service with the U.S. Department of Health and Human Services, then as General Counsel to Thomas Jefferson University and then with the law firm of Morgan, Lewis and Bockius. She is a graduate of the University of Pennsylvania Law School in 1966 and Goucher College in 1963.

Debra A. Kahn, Secretary of Education, has served as the Executive Director of Philadelphia Futures, Assistant to the President of Temple University, Vice President of Corporate Communications and Public Affairs at PNC Bank, and the Director of Policy and Planning for Mayor William J. Green. She has provided volunteer services for several civic and community organizations, including service as a founding board member for the Greater Philadelphia Food Bank. From 1991 to 1997, Ms. Kahn served as a member of the Philadelphia Board of Education. She received a B.A. in government from Franklin and Marshall College. She holds a Master's Degree in political science from the Eagleton Institute of Politics at Rutgers University.

Sylvester M. Johnson, Police Commissioner/Secretary of Public Safety. Mr. Johnson is a thirty-six year veteran of the Philadelphia Police Department. Prior to his current appointment, Mr. Johnson was, since April 1998, Deputy Commissioner of Operations under former Police Commissioner John F. Timoney. Mr. Johnson attended Philadelphia Community College, Temple University, the Senior Management Institute for Police at Harvard University, Pennwalt Corporation's Targeted Management Training, the United States Secret Service Dignitary

Protection Training, the Federal Bureau of Investigation's ("FBI") National Academy Class 172, and the FBI National Executive Institute.

Maxine Griffith, Secretary of Strategic Planning and Initiatives/Executive Director of the City Planning Commission, was appointed in May 2001. Prior to serving in her current position, Ms. Griffith was the Senior Fellow for Community Planning and Development at the Regional Planning Association in New York. She also served in the Clinton administration in the Department of Housing and Urban Development ("HUD"), first as Secretary's Regional Representative for New York and New Jersey and then as the HUD's Assistant Deputy Secretary. From 1988-1996, Ms. Griffith was a principal of Griffith Planning and Design and from 1990-1996 served as a member of the New York City Planning Commission. She received a bachelor's degree from Hunter College and a Master's Degree in Architecture from the University of California at Berkeley.

Dianah L. Neff, Chief Information Officer, was appointed in May 2001. Prior to that Ms. Neff served as deputy City Manager and Chief Information Officer for the City of San Diego, California. Before that she served as Chief Information Officer of the City of Bellevue, Washington. Ms. Neff has also served as Director of Information Systems for the County of San Bernadino, California and Director of Information Resources for the City of Palo Alto, California, where she oversaw efforts to make Palo Alto the first city in the nation on the World Wide Web. Prior to her work in government, Ms. Neff had fourteen years' experience in the private sector working for high-tech software and hardware firms in the Silicon Valley. Ms. Neff holds a Bachelor's Degree in marketing and economics from San Jose State University.

Jonathan A. Saidel, City Controller, is serving his fourth term as Philadelphia's elected City Controller, an office independent of the Mayor. He is an attorney and certified public accountant, and received a Juris Doctor degree from the Delaware Law School of Widener University and a Bachelor of Business in Accounting degree from Temple University. In recent years, Mr. Saidel has been an adjunct professor in graduate programs at Drexel University, Saint Joseph's University and the University of Pennsylvania. Philadelphia: A New Urban Direction, a book offering analysis and recommendations for improving Philadelphia's competitive position, researched and written by Mr. Saidel and the staff of the Office of the City Controller, was published by Saint Joseph's University Press in 1999.

## **Government Services**

Municipal services provided by the City include: police and fire protection; health care; certain welfare programs; construction and maintenance of local streets, highways, and bridges; trash collection and disposal; provision for recreational programs and facilities; maintenance and operation of the water and wastewater systems (the "Water and Wastewater Systems"); the acquisition and maintenance of City real and personal property, including vehicles; maintenance of building codes and regulation of licenses and permits; maintenance of records; collection of taxes and revenues; purchase of supplies and equipment; construction and maintenance of airport facilities; and maintenance of a prison 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 the PGW for the benefit of the City.

## **Local Government Agencies**

There are a number of significant governmental authorities and quasi-governmental non-profit corporations that also provide services within the City.

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.

The Philadelphia Parking Authority is responsible for the construction and operation of parking facilities in the City and at the Philadelphia International Airport and, by contract with the City, for enforcement of on-street parking regulations.

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, without limitation, the construction and leasing of municipal solid waste disposal facilities, correctional facilities, and other municipal buildings.

The Redevelopment Authority of the City of Philadelphia (the “Redevelopment Authority”) and the Philadelphia Housing Authority develop and/or administer low and moderate income rental units and housing in the City. The Redevelopment Authority, 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.

The Hospitals and Higher Education Facilities Authority of Philadelphia, formerly The Hospitals 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 have been expanded to permit the financing of construction of buildings and facilities for certain colleges and universities and other health care facilities and nursing homes.

The Philadelphia Industrial Development Corporation (“PIDC”) and its affiliate, the Philadelphia Authority for Industrial Development (“PAID”), coordinate the City’s efforts to maintain an attractive business environment and to attract new businesses to the City and retain existing ones.

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.

## **School District**

The School District was established by the Educational Supplement to the City’s Home Rule Charter to provide free public education to the City’s residents. Under the Home Rule Charter, its board is appointed by the Mayor and must submit a lump sum statement of expenditures to the City annually. Such statement is used by City Council in making its determination to authorize the levy of taxes on behalf of the School District. Certain financial information regarding the School District is included in the City’s Comprehensive Annual Financial Report. It has no independent taxing powers and may levy only the taxes authorized on its behalf by the City and the Commonwealth. Under the Home Rule Charter, the School District is managed by a nine-member Board of Education appointed by the Mayor from a list supplied by an Educational Nominating Panel that is chosen by the Mayor. In some matters, including the incurrence of short-term and long-term debt, both the City and the School District are governed primarily by the laws of the Commonwealth. The School District is a separate political subdivision of the Commonwealth and the City has no property interest in or claim on any revenues or property of the School District.

The School District was declared distressed by the Secretary of Education of the Commonwealth pursuant to Section 691(c) of the Public School Code of 1949, as amended (the “School Code”), on December 22, 2001. During a period of distress under Section 691(c) of the School Code, all of the powers and duties of the Board of Education granted under 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”) provided for 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 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 shall not interfere with the regular selection of the members of the Board of Education. During the tenure of the School Reform Commission, the Board of Education will perform those duties delegated to it by the School Reform Commission.

## PENNSYLVANIA INTERGOVERNMENTAL COOPERATION AUTHORITY

### General

The Pennsylvania Intergovernmental Cooperation Authority (“PICA”) was created on June 5, 1991 by the Pennsylvania Intergovernmental Cooperation Authority Act for Cities of the First Class (the “PICA Act”). PICA was established to provide financial assistance to cities of the first class. The City is the only city of the first class in the Commonwealth. The PICA Act provides that, upon request by the City to PICA for financial assistance and for so long as any bonds issued by PICA remain outstanding, PICA shall have certain financial and oversight functions. Under the PICA Act, PICA no longer has the authority to issue bonds for new money purposes, but may refund bonds previously issued by it. PICA has the power, in its oversight capacity, to exercise certain advisory and review procedures with respect to the City’s financial affairs, including the power to review and approve five-year financial plans prepared at least annually by the City, and to certify non-compliance by the City with the then-existing five-year plan adopted by the City pursuant to the PICA Act. Under the PICA Act, such certification would require the Secretary of the Budget of the Commonwealth to withhold payments due to the City from the Commonwealth or any of its agencies (including, with certain exceptions, all grants, loans, entitlements and payment of the portion of the PICA Tax, hereinafter described, otherwise payable to the City). See “Source of Payment of PICA Bonds” below.

On June 16, 1992, PICA, at the request of the City, issued \$474,555,000 Special Tax Revenue Bonds (City of Philadelphia Funding Program), Series of 1992 (the “1992 PICA Bonds”). The proceeds of the 1992 PICA Bonds were used (i) to make grants to the City to fund the Fiscal Year 1991 General Fund cumulative deficit (\$153.5 million) and the then-projected Fiscal Year 1992 General Fund deficit (\$71.4 million); (ii) to make grants to the City to pay the costs of certain capital projects to be undertaken by the City; and (iii) to make a grant to the City to provide it with financial assistance to enhance productivity in the operation of City government. It had been anticipated that the proceeds of the 1992 PICA Bonds would also be used to fund the City’s projected Fiscal Year 1993 General Fund deficit; however, because no deficit occurred, a grant from PICA for this purpose was not required. These proceeds, in the amount equal to \$23.5 million, were instead used to provide funds for other City purposes.

On July 29, 1993, PICA, at the request of the City, issued \$643,430,000 Special Tax Revenue Bonds (City of Philadelphia Funding Program), Series of 1993 (the “1993 PICA Bonds”), the proceeds of which were used to make grants to the City to pay the costs of certain capital projects to be undertaken by the City and to make a grant to the City to provide for the defeasance of certain outstanding general obligation bonds of the City in the aggregate amount of \$336,225,000.

On September 14, 1993, PICA issued \$178,675,000 Special Tax Revenue Refunding Bonds (City of Philadelphia Funding Program), Series of 1993A (the “1993A PICA Bonds”), the proceeds of which were used to advance refund \$136,670,000 principal amount of the 1992 PICA Bonds.

On December 15, 1994, PICA, at the request of the City, issued \$122,020,000 Special Tax Revenue Bonds (City of Philadelphia Funding Program) Series of 1994 (the “1994 PICA Bonds”), the proceeds of which were used to make grants to the City to pay the costs of certain capital projects to be undertaken by the City.

On May 30, 1996, PICA issued \$343,030,000 Special Tax Revenue Refunding Bonds (City of Philadelphia Funding Program), Series of 1996 (the “1996 PICA Bonds”), the proceeds of which were used to advance refund \$304,160,000 principal amount of the 1992 PICA Bonds and \$120,180,000 principal amount of the 1994 PICA Bonds.

On April 15, 1999, PICA issued \$610,005,000 Special Tax Revenue Refunding Bonds (City of Philadelphia Funding Program), Series of 1999, the proceeds of which were used to advance refund \$610,730,000 principal amount of the 1993 PICA Bonds.

On June 16, 2003, PICA issued \$165,550,000 Special Tax Revenue Refunding Bonds (City of Philadelphia Funding Program), Series of 2003, the proceeds of which were used to refund \$163,185,000 principal amount of the 1993A PICA Bonds.

As of the close of business on July 1, 2004, the principal amount of PICA bonds outstanding was \$770,700,000.

### **Source of Payment of PICA Bonds**

The PICA Act authorized 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 adoption of the first Five-Year Plan, the City reduced the wage, earnings, and net profits tax on City residents by 1.5% and enacted a 1.5% tax on wages, earnings and net profits of City residents (the "PICA Tax"). Proceeds of the PICA Tax are solely the property of PICA. The PICA Tax, collected by the City's Department of Revenue, is deposited in the "Pennsylvania Intergovernmental Cooperation Authority Tax Fund" (the "PICA Tax Fund") of which the State Treasurer is custodian. The PICA Tax Fund is not subject to appropriation by City Council or the General Assembly of the Commonwealth.

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 the rate of the PICA Tax while any bonds secured by the PICA Tax are outstanding.

The PICA Act requires that 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, be deposited in a trust fund established pursuant to the PICA Act exclusively for the benefit of 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, but are subject to withholding if PICA certifies the City's non-compliance with the then-current five-year plan.

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. Since PICA has issued bonds secured by the PICA Tax, the PICA Act requires that the State Treasurer pay the proceeds of the PICA Tax held in the PICA Tax Fund directly to the Bond Payment Account, the debt service reserve fund created for bonds issued by PICA and the City Account.

The total amount of PICA Tax remitted to PICA by the State Treasurer for each of the Fiscal Years 1994 through 2005 is set forth below:

<u>Year</u>	<u>Amount</u>
1994	\$205.5 million
1995	209.6 million
1996	218.8 million
1997	218.2 million
1998	236.1 million
1999	245.8 million
2000	256.6 million
2001	273.6 million
2002	278.0 million
2003	281.5 million
2004	285.0 million
2005	295.0 million (estimated)

PICA bonds are payable from the PICA revenues, including the PICA Tax, pledged to secure PICA's bonds, the Bond Payment Account and any debt service reserve fund established for such bonds and have no claim on any revenues of the Commonwealth or the City.

## **Five-Year Plans of the City**

One of the conditions precedent to the issuance of bonds by PICA was the development by the City and approval by PICA of a five-year financial plan. The original five-year plan, which covered Fiscal Years 1992 through 1996, was prepared by the Mayor, approved by City Council on April 29, 1992 and by PICA on May 18, 1992. In each subsequent year, the City updated the previous year's five-year plan, each of which was adopted by City Council, signed by the Mayor and approved by PICA. The Thirteenth Five-Year Plan was presented to Council on March 18, 2004, and approved by PICA on July 7, 2004. In the Thirteenth Five-Year Plan, the City projects a balanced budget in each of the five years covered by the plan through a continued strategy based upon implementation of management initiatives, productivity improvements, cost containments, certain workforce restructurings, and revenue enhancements. An amendment to the Thirteenth Five-Year Plan was presented to PICA on November 15, 2004, and was approved by PICA on December 21, 2004.

The Mayor presented the Fourteenth Five-Year Plan to City Council on January 25, 2005. In the Fourteenth Five-Year Plan, the City projects a balanced budget in each of the five years covered by the plan through a continued strategy based upon implementation of management initiatives, productivity improvements, cost containments, certain workforce restructurings, and revenue enhancements.

## **CITY FINANCIAL PROCEDURES**

Except as otherwise noted, the financial statements, tables, statistics, and other information contained in this Official Statement have been prepared by the Office of the Director of Finance and can be reconciled to the financial statements in the City's Comprehensive Annual Financial Report and Notes therein.

## **Independent Audit and Opinion of the City Controller**

The City Controller has examined and expressed opinions on the basic financial statements of the City of Philadelphia contained in the City's Comprehensive Annual Financial Report for the Fiscal Year ended June 30, 2004 (the "Fiscal Year 2004 Comprehensive Annual Financial Report"). The City Controller has examined and expressed opinions on the City's general purpose financial statements for all prior years. The City Controller has not examined and expressed an opinion on the financial statements for the Water Fund contained in this Official Statement or on any other financial data contained in this Official Statement. Such financial statements for the Water Fund have been prepared by the Water Department and approved by the Director of Finance.

The City Controller has not participated in the preparation of this Official Statement nor in the preparation of the budget estimates and projections and cash flow statements and forecasts set forth in various tables contained in this Official Statement. Consequently, the City Controller expresses no opinion with respect to any of the data contained in this Official Statement other than what is contained in the Fiscal Year 2004 Comprehensive Annual Financial Report.

## **Fund Structure**

The major operations of the City are conducted through the Principal Operating Funds (Debt Related), which include the General Fund. In addition, the City has three other Principal Operating Funds that are not debt related ("Non-Debt Related Funds"), two of which are financed solely from grants from the Commonwealth and Federal governments. Collectively, the Principal Operating Funds (Debt Related and Non-Debt Related Funds) are referred to herein as the "Principal Operating Funds."

## **Principal Operating Funds**

The Unrestricted Debt Related Funds include the General Fund, the resources of which are available for any City purpose, and the County Liquid Fuels Tax Fund and the Special Gasoline Tax Fund, the resources of which are available only for servicing general obligation debt issued for construction of public roads or streets. The Other Debt Related Funds include the Water Fund and the Aviation Fund, the resources of which are not generally



available for City purposes, other than the operations of the City's Water Department and the City's Division of Aviation, respectively.

The Non-Debt Related Funds, the resources of which are not available for other City purposes, include the Grants Revenue Fund, the Community Development Fund, the Hotel Room Rental Tax Fund, the Car Rental Tax Fund and the HealthChoices Behavioral Health Revenues Fund.

## **Fund Accounting**

Funds are groupings of activities that enable the City to maintain control over resources that have been segregated for particular purposes or objectives. All of the funds of the City can be divided into three categories: governmental funds, proprietary funds and fiduciary funds.

*Governmental funds.* The governmental funds are used to account for the financial activity of the City's basic services, such as: general government; economic and neighborhood development; public health, welfare and safety; cultural and recreational; and streets, highways and sanitation. The fund 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 twenty individual governmental funds. The City's Comprehensive Annual Financial Report presents 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 seventeen 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 funds - 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 Comprehensive Annual Financial Report as separate financial statements of fiduciary net assets and changes in fiduciary net assets.

## **Basis of Accounting and Measurement Focus**

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 privilege, 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: (1) charges to customers or applicants for goods received, services rendered or privileges provided, (2) operating grants and contributions, and (3) 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 HealthChoices Behavioral Health Fund accounts for resources received from the Commonwealth. These resources are restricted to providing managed behavioral health care to Philadelphia residents.

The Grants Revenue Fund accounts for the resources received from various federal, state and private grantor agencies. The resources are restricted to accomplishing the various objectives of the grantor agencies.

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 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 noncontributory pension plan.

The City reports the following major Proprietary Funds:

The Water Fund accounts for the activities related to the operation of the City's water delivery and sewage systems.

The Aviation Fund accounts for the activities of the City's airports.

The Industrial Land Bank Fund accounts for the activities of the City's inventory of commercial land sites.

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 revenue of the Aviation Fund is charges for the use of the airport. Operating expenses for enterprise funds include the cost of sales and services, administrative expenses, and depreciation on capital assets. The principal operating revenues of the Industrial Land Bank Fund come from sales of land sites, while the operating expenses are comprised of land purchases and improvements made thereon. All revenues and expenses not meeting this definition are reported as nonoperating revenues and expenses.

## **Legal Compliance**

The City's budgetary process accounts for certain transactions on a basis other than generally accepted accounting principles (GAAP). In accordance with the Philadelphia Home Rule 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, seven Special Revenue Funds (County Liquid Fuels Tax, Special Gasoline Tax, HealthChoices Behavioral Health, Hotel Room Rental Tax, Grants Revenue, Community Development and Car Rental Tax Funds) and two Enterprise Funds (Water and Aviation Funds), are subject to annual operating budgets adopted by City Council. Included with the Water Fund is the Water Residual Fund. These budgets appropriate funds for all City departments, boards and commissions by major class of

expenditure within each department. Major classes are defined as: personal services; purchase of services; materials and supplies; equipment; contributions, indemnities and taxes; debt service; payments to other funds; and 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 councilmanic approval. Appropriations that are not expended or encumbered at year-end are lapsed.

The City Capital Improvement Fund budget is adopted annually by the City Council. The Capital Improvement budget is appropriated by project for each department. All transfers between projects exceeding twenty percent of each project's original appropriation must be approved by City Council. Any funds that are not committed or expended at year-end are lapsed.

Schedules prepared on the legally enacted basis differ from the generally accepted accounting principles (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.

## **Budget Procedure**

At least ninety days before the end of the Fiscal Year the operating budget for the next Fiscal Year is prepared by the Mayor and must be 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 thirty days before the end of each Fiscal Year, City Council must adopt by ordinance an operating budget and a capital budget for the ensuing Fiscal Year and a capital program for the six ensuing years. Within ten days after the adoption of each of such ordinances and their receipt by the Mayor, the Mayor must act upon such ordinances or the ordinances become effective.

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. See Table IV-11 for a summary of the City's capital improvement program for the Fiscal Years 2005 through 2010.

The capital budget ordinance, authorizing in detail the capital expenditures to be made or incurred in the ensuing Fiscal Year from funds that City Council appropriates, 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.

## **Awards**

For the twenty-fourth consecutive year, the Government Finance Officers Association of the United States and Canada (GFOA) awarded its prestigious Certificate of Achievement for Excellence in Financial Reporting to the City for its Comprehensive Annual Financial Report for the fiscal year ended June 30, 2003. The City received this recognition by publishing a report that was well organized and readable and satisfied both generally accepted accounting principles and applicable legal requirements.

## **CITY CASH MANAGEMENT AND INVESTMENT POLICIES**

### **Consolidated Cash**

The Act of the General Assembly of the Commonwealth of June 25, 1919, P.L. 581, Art. XVII, § 6, gives the City the authority to make temporary inter-fund loans between operating and capital funds.

The Consolidated Cash Account provides for the physical commingling of the cash of all City Funds, except those which, for legal or contractual reasons, cannot be commingled (e.g., the Municipal Pension Fund, sinking funds, certain capital project funds, sinking fund reserves, funds of PGW, the Water Fund, the Aviation Fund and certain other restricted purpose funds). A separate accounting is maintained for the equity of each member fund in the Consolidated Cash Account. The City manages the Consolidated Cash Account pursuant to written procedures adopted by the Office of Director of Finance.

To the extent that any member fund temporarily experiences the equivalent of a cash deficiency, the required advance is made from the Consolidated Cash Account, in the amount necessary to result in a zero balance in the cash equivalent account of the borrowing fund. All subsequent net receipts of a borrowing fund 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.

Written 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 invested by the City Treasurer's Office through the use of money market mutual funds and professional money managers under contract with the City. The Director of Finance adopted a written Investment Policy (the "Policy") which went into effect in August 1994 and was revised most recently in April 2001.

The Policy delineates the authorized investments as approved by City Council Ordinance and the funds to which the Policy applies. The authorized investments include U.S. Government Securities, U.S. Treasuries, U.S. Agencies, Certificates of Deposit, Bankers Acceptance Notes, Eurodollar Deposits, Euro Certificates of Deposit, Commercial Paper, Corporate Bonds, Money Market Mutual Funds, Repurchase Agreements and Commonwealth of Pennsylvania securities, all of investment grade rating or better. Each category of instruments, excluding U.S. Government, Treasury and Agency securities which carry no limitation, is limited to investment of no more than 25% of the total portfolio, and no more than 10% of the total portfolio per institutional or corporate issuer. The Policy also restricts investments to those having a maximum maturity of two years. Daily liquidity is maintained through the use of SEC-registered money market mutual funds with the balance of funds invested by money managers in accordance with the Policy.

The Policy provides for an ad hoc Investment Committee consisting of the Director of Finance, the City Treasurer and the Deputy City Treasurer with ex-officio membership of a representative of each of the principal operating and capital funds, i.e. Water Fund, Aviation Fund, Philadelphia Gas Works and Philadelphia Municipal Authority. 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. All changes in the Policy are approved by the Investment Committee.

The Policy expressly forbids the use of any derivative investment product whose yield or market value does not follow the normal swings in interest rates. Investment in derivatives such as "inverse floaters," leveraged

variable rate debt and interest-only or principal-only Collateralized Mortgage Obligations are specifically forbidden. The use of any other derivative investment products is restricted to identified “core cash” in any fund but never to exceed 25% of any fund’s balance at the time of purchase. If the market values fall 5% below cost, a written explanation is required from the investment manager outlining the reasons for the decline and outlining the steps, if any, that are needed to correct the situation.

## **General Fund Cash Flow**

Because the receipt of General Fund revenues lags behind expenditures during most of each fiscal year, the City issues notes in anticipation of General Fund revenues and makes borrowings from the Consolidated Cash Account to finance its on-going operations. The City has issued notes in anticipation of the receipt of income by the General Fund in each fiscal year since Fiscal Year 1972. Each issue was repaid when due, prior to the end of the fiscal year.

The timing imbalance referred to above results from a number of factors, principally the following: (1) real property, business privilege tax and certain other taxes are not due until the latter part of the fiscal year; (2) the City makes the majority of the employer’s contribution to the Municipal Pension Fund in July of each year; and (3) 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.

## **DISCUSSION OF FINANCIAL OPERATIONS**

### **Fiscal Year 2004 Results**

The City ended Fiscal Year 2004 on the legally enacted basis with a fund balance deficit of \$46.8 million. This deficit is largely the result of delayed State reimbursements for child welfare costs under Act 148. Over \$90 million, representing the second and third quarter reimbursements and the fourth quarter advance, was received in September and was not accrued, in accordance with GASB guidelines. Had the funds been received on a timely basis, the FY2004 fund balance would have been \$45.1 million. This would have been a decrease of \$46.2 million from the FY2003 fund balance of \$91.3 million.

### **Fiscal Year 2005 Budget**

The City’s Fiscal Year 2005 budget was approved by City Council and signed by the Mayor on July 1, 2004. This budget was prepared by the City in conjunction with the Thirteenth Five-Year Plan. The Thirteenth Five-Year Plan, which covers Fiscal Years 2005-2009, was approved by PICA on July 7, 2004. On October 25, 2004 PICA notified the City that it would require a plan revision in light of interest arbitration awards and a contract settlement with District Council 47, of the American Federation of State, County and Municipal Employees, AFL-CIO, one of the labor unions representing the City’s non-uniformed employees. The revised Five Year Plan was submitted to PICA by November 15, 2004, and approved by PICA on December 21, 2004.

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**Table IV-1**  
**City of Philadelphia General Fund**  
**Summary of Operations (Legal Basis) (Amounts In Millions of USD)**

	2000	2001	2002	2003	2004	Adopted Budget 2005
<b>REVENUES</b>						
Real Property Taxes	353.6	363.4	373.6	361.1	377.7	384.8
Personal Property Taxes	0.0	0.8	0.0	0.0	0.0	0.0
Wage and Earnings Tax	973.0	1,047.2 <sup>(b)</sup>	1,006.0	1013.4	1,049.6	1,059.0
Net Profits Tax	12.7	11.8	13.4	11.7	13.0	13.0
Business Privilege Tax	290.1	314.0 <sup>(b)</sup>	295.8	286.1	309.2	292.2
Sales Tax	103.7	111.3	108.1	108.0	108.0	108.0
Other Taxes <sup>(a)</sup>	123.5	130.0 <sup>(b)</sup>	148.2	156.3	202.2	184.8
Total Taxes	<u>1,856.6</u>	<u>1,977.7</u>	<u>1,945.4</u>	<u>1,936.6</u>	<u>2,059.6</u>	<u>2,041.8</u>
Locally Generated Non-Tax Revenue	194.9	204.5	207.1	245.2	207.4	271.4
Revenue from Other Governments	678.0	748.8	687.7	876.6	801.1	999.1
Receipts from Other City Funds	26.0	24.0	24.7	27.3	24.7	28.0
Total Revenue	<u>2,755.5</u>	<u>2,955.1</u>	<u>2,866.9</u>	<u>3,085.7</u>	<u>3,092.8</u>	<u>3,340.3</u>
<b>OBLIGATIONS/APPROPRIATIONS</b>						
Personnel Services	1,071.8	1,173.3	1,188.3	1,246.7	1,278.3	1,241.6
Purchase of Services	848.9	871.8	920.5	1,007.1	1,050.3	1,097.1
Materials, Supplies and Equipment	79.7	84.0	80.0	76.0	70.6	68.3
Employee Benefits	493.8	483.4	485.8	540.6	598.9	713.7
Indemnities, Contributions and Grants	69.9	82.4	123.8	122.9	95.1	109.1
City Debt Service	91.5	88.2	101.8	97.1	93.7	91.5
Other	29.2	72.9	30.2	32.4	32.0	36.7
Payments to Other City Funds	26.4	25.5	50.7	30.4	29.1	24.8
Total Obligations/Appropriations	<u>2,711.2</u>	<u>2,881.5</u>	<u>2,981.1</u>	<u>3,153.2</u>	<u>3,248.2</u>	<u>3,382.8</u>
Operating Surplus for the Year	44.3	73.6	(114.2)	(67.5)	(155.4)	(42.5)
Net Adjustments – Prior Year	45.1	(138.7) <sup>(c)</sup>	23.2	19.8	17.3	28.0
Funding for Contingencies	0.0	0.0	0.0	0.0	0.0	0.0
Cumulative Fund Balance Prior Year	<u>205.7</u>	<u>295.1</u>	<u>230.0</u>	<u>139.0</u>	<u>91.3</u>	<u>14.6</u>
Cumulative Adjusted Year End Fund Balance (Deficit)	<u>295.1</u>	<u>230.0</u>	<u>139.0</u>	<u>91.3</u>	<u>(46.8)</u>	<u>1</u>

(a) Includes Real Estate Transfer Tax, Parking Tax, Amusement Tax, and Other Taxes.

(b) Accounting accrual changes required by GASB #33 resulted in additional one-time tax revenue accruals in Fiscal year 2001. (Wage Tax, \$50.4 million; Business Privilege, \$5.2 million; Other Taxes, \$4.3 million)

(c) Reflects GASB #33's impact on prior year accruals.

FIGURES MAY NOT ADD DUE TO ROUNDING.

**Table IV-2**  
**City of Philadelphia**  
**Principal Operating Funds (Debt Related)**  
**Summary of Operations**  
**(Legal Basis)**  
**(Amounts in Millions of USD)**

	2000	2001	2002	2003	2004	Adopted Budget 2005
<b>REVENUES</b>						
General Fund	2,755.5	2,955.1	2,866.9	3,085.7	3,092.8	3,340.3
Water Fund <sup>(a)</sup>	414.0	410.3	404.2	440.8	438.3	508.9
Aviation Fund <sup>(b)</sup>	154.3	180.6	184.2	219.8	241.4	296.3
Other Operating Funds <sup>(c)</sup>	24.5	29.1	35.8	39.2	39.0	166.7
Total Revenue	<u>3,348.3</u>	<u>3,575.1</u>	<u>3,491.1</u>	<u>3,785.5</u>	<u>3,810.4</u>	<u>4,312.2</u>
<b>OBLIGATIONS/APPROPRIATIONS</b>						
Personnel Services	1,208.6	1,321.4	1,339.1	1,406.0	1,444.7	1,546.1
Purchase of Services	966.4	992.2	1,050.3	1,147.4	1,197.0	1,282.3
Materials, Supplies and Equipment	124.1	127.1	121.9	120.0	119.2	129.0
Employee Benefits	546.3	538.1	541.8	600.6	662.1	792.5
Indemnities, Contributions and Taxes	77.7	88.1	129.1	128.5	99.7	120.4
Debt Service <sup>(d)</sup>	298.8	296.2	330.7	358.0	344.6	371.4
Other	29.2	72.9	30.3	32.4	32.0	37.2
Payments to Other City Funds	70.6	75.5	97.5	93.9	95.5	103.7
Total Obligations/Appropriations	<u>3,312.7</u>	<u>3,511.5</u>	<u>3,640.7</u>	<u>3,886.8</u>	<u>3,994.8</u>	<u>4,382.6</u>
Operating Surplus (Deficit) for the Year	35.6	63.6	(149.6)	(101.3)	(184.4)	(70.4)
Net Adjustments Prior Year	58.7	(122.8)	43.1	50.2	41.0	45.2
Funding for Contingencies	0.0	0.0	0.0	0.0	0.0	0.0
Cumulative Fund Balance (Deficit) Prior Year End	250.9	330.3	289.6	183.1	132.0	45.4
Cumulative Adjusted Year End Fund Balance (Deficit)	<u>345.2</u>	<u>271.1</u>	<u>183.1</u>	<u>132.0</u>	<u>(11.4)</u>	<u>20.2</u>

(a) Revenues of the Water Fund 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 to the extent of \$4,994,000 per year, provided certain further conditions are satisfied. From Fiscal Year 1991 to Fiscal Year 2003, the maximum transfer, per administrative agreement, was \$4,138,000. For Fiscal Year 2004, the budgeted transfer was not made. For Fiscal Year 2005, the transferred amount is budgeted at \$4,994,000.

(b) Airport revenues are not available for other City purposes.

(c) Includes County Liquid Fuels Tax Fund, Special Gasoline Tax Fund and Water Residual Fund.

(d) Excludes PICA bonds.

FIGURES MAY NOT ADD DUE TO ROUNDING.

## Quarterly Reporting to PICA

On November 16, 1992, the City submitted the first of its quarterly reports to PICA. This reporting is required under the PICA Act so that PICA may determine whether the City is in compliance with the then-current Five-Year Plan. Under the PICA Act, 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 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. The Mayor is required to provide a report to PICA that describes actual or current estimates of revenues, expenditures, and cash flows by covered funds compared to budgeted revenues, expenditures, and cash flows by covered funds for such previous quarterly or monthly period 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.

PICA may not take any action with respect to the City for variances if the City (i) within 30 days provides a written explanation of the variance that PICA deems reasonable; (ii) within 45 days 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 as required by the PICA Act.

The City has submitted its Fourteenth Five Year Plan to PICA on January 25, 2005.

## REVENUES OF THE CITY

### General

In 1932, the Pennsylvania General Assembly adopted an act (commonly referred to as the Sterling Act) under which the City was permitted to levy any tax that was not specifically pre-empted by the Commonwealth. Prior to 1939, the City relied heavily upon the real property tax as the mainstay of its revenue system. Acting under the Sterling Act and other legislation, the City has taken various steps over the years to reduce its reliance on real property taxes as a source of income, including: (1) enacting the wage, earnings, and net profits tax in 1939; (2) introducing a sewer service charge to make the sewage treatment system self-sustaining after 1945; (3) requiring under the Home Rule Charter that the water, sewer, and other utility systems be fully self-sustaining; and (4) enacting in 1952 the Mercantile License Tax (a gross receipts tax on business done within the City), which was replaced as of the commencement of Fiscal Year 1985 by the Business Privilege Tax.

### Major Revenue Sources of Principal Operating Funds (Debt Related)

The City derives its revenues primarily from various taxes, non-tax revenues, and receipts from other governments. See Table IV-3 for revenues by major source for Fiscal Years 1996-2005 and Table IV-4 for General Fund tax revenues for Fiscal Years 2000-2005. The following description does not take into account revenues in the Non-Debt Related Funds. The tax rates for Fiscal Years 1995 through 2004 are contained in the Fiscal Year 2004 Comprehensive Annual Financial Report.

Real Property Taxes — A real estate tax on all taxable real property is levied at a rate of 82.64 mills on the assessed value of residential and commercial property located within the City’s boundaries. From Fiscal Year 2003 onward, the City’s portion of the rate is 34.74 mills and the School District’s portion is 47.90 mills.

Wage, Earnings, and Net Profits Taxes — These taxes are levied on the wages, earnings, and net profits of all residents of the City and all non-residents employed within the City. The rate for both residents and non-residents was 4.3125% from Fiscal Year 1977 through Fiscal Year 1983. For Fiscal Years 1984 through 1991 the



wage and earnings tax rate was 4.96% for residents and 4.3125% for non-residents and the net profits tax rate was 4.96% for both residents and non-residents.

In Fiscal Year 1992, the City reduced the City wage, earnings, and net profits tax on City residents by 1.5% and imposed the PICA Tax on wages, earnings and net profits at the rate of 1.5% on City residents. The table below sets forth the resident and non-resident wage and earnings tax rates for Fiscal Years 1995-2004, and the annual wage and earnings tax receipts in such fiscal years.

<u>Fiscal Year</u>	<u>Resident Wage and Earnings Tax Rates*</u>	<u>Non-Resident Wage and Earnings Tax Rates</u>	<u>Annual Wage and Earnings Tax Receipts (including PICA Tax) (Amounts in Millions)</u>
1995	4.9600%	4.3125%	\$1,070.2
1996	4.8600	4.2256	1,096.3
1997	4.8400	4.2082	1,106.1
1998	4.7900	4.1647	1,158.1
1999	4.6869	4.0750	1,195.6
2000	4.6135	4.0112	1,242.3
2001	4.5635	3.9672	1,332.6
2002	4.5385	3.9462	1,297.3
2003	4.5000	3.9127	1,306.6
2004	4.4625	3.8801	1,347.6
2005**	4.3310	3.8197	1,381.8 (est.)

\* Includes PICA Tax

\*\* On January 1, 2005, the City will begin to use a calendar year period for wage tax purposes.

In the Thirteenth Five-Year Plan, which was approved by PICA, the Mayor proposed further reductions in this tax rate for each of the Fiscal Years 2005-2009. The Thirteenth Five-Year Plan proposed reducing the wage tax from its FY 2004 level of 4.4625% for residents and 3.8801% for non-residents to 4.169% for residents and 3.685% for non-residents by Fiscal Year 2009. Each approved Five-Year Plan since the one covering Fiscal Years 1996-2000 has included reductions in this tax rate for each of its fiscal years.

Business Privilege Tax — In May 1984, the City enacted an ordinance substituting the Business Privilege Tax for the Mercantile License Tax. The Business Privilege Tax has been levied since January 1985 on every entity engaging in business in the City.

The Business Privilege Tax is a composite tax. Tax rates vary according to business classification (regulated, non-regulated, persons registered under the Pennsylvania Securities Act of 1972, manufacturing, wholesale, or retail) and method of tax computation employed. The various methods of tax computation are as follows: effective Fiscal Year 1989, all regulated industries, banks, trust companies, insurance companies, and public utilities, among others, were taxed at an annual rate of 3.25 mills on annual receipts not to exceed 6.5% of their net income. The tax on annual receipts and net income of all businesses, other than regulated industries, was levied at 3.25 mills and 6.5%, respectively, provided that persons registered under the Pennsylvania Securities Act of 1972 shall in no event pay a tax of less than 5.711 mills on all taxable receipts plus the lesser of 4.302% of net income or 4.302 mills on gross taxable receipts.

Non-regulated industry manufacturers can opt for a lower 5.395% rate on receipts from sales after deducting the applicable cost of goods. Non-regulated wholesalers may choose a gross receipts tax on wholesale transactions at a lower rate of 7.55% after deducting applicable product and labor costs. Non-regulated retailers have the option of choosing the lower rate of 2.1% on receipts from retail sales after deducting applicable product and labor costs.

All persons subject to both the Business Privilege Tax and the Net Profits Tax are entitled to apply a credit of 60% of their Business Privilege Tax liability against what is due on the Net Profits Tax, which credit may be carried back or forward for up to three years.

In Fiscal Year 1996, the City began a program of reducing the gross receipts portion of the Business Privilege Tax from its previous level of 3.25 mills.

<u>Fiscal Year</u>	<u>Business Privilege Tax/Gross Receipts</u>
1995	3.250 mills
1996	3.000 mills
1997	2.950 mills
1998	2.875 mills
1999	2.775 mills
2000	2.650 mills
2001	2.525 mills
2002	2.400 mills
2003	2.300 mills
2004	2.100 mills
2005	1.900 mills

In the Thirteenth Five-Year Plan, the Mayor also proposed further reductions in this tax rate for each of Fiscal Years 2005-2009. The City proposes to accelerate the rate reductions for the gross receipts portion of the business privilege tax so that by Fiscal Year 2007, this tax will be only 58 percent of the rate that prevailed when the City began its tax cuts in 1996. There can be no assurance that the proposed reductions will be implemented.

All business activity is also assessed a one-time \$200 licensing fee administered by the Department of Licenses and Inspections.

Sales and Use Tax — In connection with the adoption of the Fiscal Year 1992 Budget, the City adopted a 1% sales and use tax (the “City Sales Tax”) for City general revenue purposes. The Commonwealth authorized the levy of this tax under the PICA Act. Vendors are required to pay this sales tax to the Commonwealth Department of Revenue together with the similar Commonwealth sales and use tax. The State Treasurer deposits the collections of this tax 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 Sales Tax is imposed in addition to, and on the same basis as, the Commonwealth’s sales and use tax. The City Sales Tax became effective September 28, 1991 and is collected for the City by the Commonwealth Department of Revenue. The table below sets forth the City Sales Tax collected in Fiscal Years 1996 through 2004, the estimated collection for Fiscal Year 2004 and the budgeted collection for Fiscal Year 2005.

<u>Fiscal Year</u>	<u>City Sales Tax Collections</u>
1996	\$ 82.4 million
1997	91.4 million
1998	94.5 million
1999	101.4 million
2000	103.7 million
2001	111.3 million
2002	108.1 million
2003	108.0 million
2004	108.0 million
2005	108.0 million*

\*Adopted budget estimate for Fiscal Year 2005

Other Taxes — The City also collects real property transfer taxes, parking lot taxes, and other miscellaneous taxes such as the Amusement Tax.

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 City's Fiscal Year 2005 Adopted General Fund estimate projects that approximately 29.9% of General Fund revenues will be received from other governmental jurisdictions, including: (1) \$377.5 million from the Commonwealth for health, welfare, court, and various other specified purposes; (2) \$362.3 million from the Federal government; and (3) \$37.3 million from other governments, in which revenues are primarily principal and interest payments on loans made by the City on SEPTA's behalf and the Convention Center Service Fee offset. In addition, the projected net collections of the PICA Tax of \$222.0 million are included in "Revenue from Other Governments." These amounts do not include the 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.

## **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, in a limited amount and upon satisfaction of certain other conditions.

Effective June 1991, the revenues of the Water Department were 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 (a) all Net Reserve Earnings, as defined below, or (b) \$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, as defined in the Water Ordinance. Commencing in Fiscal Year 1991, the \$4,994,000 amount was reduced to \$4,138,000 by administrative agreement that remained in effect through Fiscal Year 2003. No such transfer was made in Fiscal Year 1992; however, the transfer was made in each subsequent year through Fiscal Year 2003. For Fiscal Year 2004, the transfer was to have increased to \$4,994,000 but no payment was made. The Water Department expects to resume making the \$4,994,000 payment in Fiscal Year 2005.

The revenues of PGW are segregated from other funds of the City. Payments for debt service on Gas Works Revenue Bonds are made directly by PGW. In previous years, PGW has also made an annual payment of \$18,000,000 to the City's General Fund. The Fiscal Year 2004 unaudited results assume that this \$18,000,000 payment will not be made. The City's Five-Year Plan assumes that the \$18,000,000 payment will be made in each of Fiscal Years 2005 – 2008 and that the City will grant back such payment to PGW in each such Fiscal Year. The \$18,000,000 grant back has been appropriated by the City for Fiscal Year 2005.

## **Philadelphia Parking Authority**

The Philadelphia Parking Authority ("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 authorized 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 Philadelphia International Airport (the "Airport"), and to administer the City's on-street parking program through an Agreement of Cooperation ("Agreement of Cooperation") with the City.

Revenues under the Lease Agreement with PPA – PPA owns and operates five parking garages at the Airport, as well as operating a number of surface parking lots at the Airport. The land on which these garages and surface lots are located is leased from the City, acting through the Department of Commerce, 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 the Airport and reimbursement to PPA for capital expenditures and prior year operating deficits relating to its Airport operations, if any. The amount that was transferred from the PPA to the City’s Aviation Operating Fund as rent on June 30, 2004 was \$14,539,053. The City received transfers of rental payments in Fiscal Year 2002 and Fiscal Year 2003 that totaled \$15,326,571 and \$11,629,311, respectively. The Fiscal Year 2005 budget assumes a transfer in the amount of \$16,124,000 under the Lease Agreement.

One component of the operating expenses is PPA’s administrative costs. In 1999, at the request of the Federal Aviation Administration (“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 non-Airport locations in the City. These parking facilities are revenue centers for purposes of the FAA Letter Agreement.

Act 22 Litigation – In 2001, the Commonwealth enacted a law (“Act 22”) which, in part, requires PPA to transfer to the Philadelphia School District in PPA’s fiscal year beginning April 1, 2001, that portion of PPA’s retained earnings, not to exceed \$45,000,000, which will not jeopardize its ability to meet debt service payments or to retire outstanding bonds. Act 22 also provides that the board of PPA shall transfer the maximum amount it deems available for such purposes in subsequent fiscal years.

It is the City’s position that Act 22 will not materially reduce the amount of revenue the City receives from PPA. The primary sources of the revenue are funds the City receives pursuant to the lease arrangements between the City and PPA (including the Lease Agreement), and funds the City receives pursuant to the Agreement of Cooperation whereby PPA acts as the City’s agent in administering much of the City’s on-street parking program, which is a municipal function. It is the City’s position that Act 22 does not affect the aforementioned leases or Agreement of Cooperation.

The City has filed a lawsuit in the United States District Court for the Eastern District of Pennsylvania seeking a ruling confirming that no such transfer of City revenues may occur because sums paid to, or retained by, PPA from revenues generated by PPA at the Airport are limited by the FAA Letter Agreement and Federal law (49 U.S.C. § 47107), which prohibits the diversion of airport revenues for non-airport purposes. This federal lawsuit has been stayed. Because the provision of Act 22 which precipitated this action recently was repealed by Act 94 of 2004, this federal lawsuit may be moot.

The City filed a lawsuit in the Court of Common Pleas for Philadelphia County seeking a ruling invalidating Act 22. In this state court lawsuit, the City alleges, among other things, that Act 22 violates several provisions of the Pennsylvania Constitution and infringes upon certain statutory guarantees prohibiting changes in PPA’s rights and authority. The state court lawsuit was transferred to the Pennsylvania Commonwealth Court for a decision on its merits. The Commonwealth Court sustained the defendants’ preliminary objection, thus dismissing the lawsuit. The City appealed the dismissal to the Pennsylvania Supreme Court. In September 2004 the Supreme Court affirmed the dismissal.

Act 9 Litigation – On February 9, 2004, the Commonwealth enacted Act 9, which provides for the extension of the term of the Agreement of Cooperation for a period of ten (10) years. Act 9 additionally requires that the PPA turn over to the Philadelphia School District the portion of the annual revenue from on-street parking operations which it collects on behalf of the City, net of the PPA’s operating and administrative costs, that exceeds \$25,000,000.

In April 2004, the City filed a lawsuit in the Commonwealth Court challenging the constitutionality of Act 9. The City named the PPA and the Governor of Pennsylvania as defendants in the lawsuit. Defendants filed preliminary objections to the lawsuit. The parties filed their briefs on the preliminary objections and oral arguments were held in September, 2004. Following the Supreme Court’s decision adverse to the City in the related Act 22

litigation, the parties filed supplemental briefs as to the impact of that decision on the Act 9 case. The Commonwealth Court ordered reargument on the case before the entire court, which occurred in early March 2005. The Commonwealth Court has not yet ruled on the pending preliminary objections.

### **Assessment and Collection of Real and Personal Property Taxes**

The Board of Revision of Taxes (the “Board”) appoints real estate assessors who annually assess all real estate located within the City. The assessors return assessments for each parcel of real estate to the Board. The Board may increase or decrease the property valuations contained in the returns of the assessors in order that such valuations conform with law. After the Board gives proper notice of all changes in property assessments, and after it has heard all assessment appeals, it then makes assessments and certifies the results to the Department of Revenue.

Real estate taxes, if paid by February 28, are discounted by 1%. If the tax is paid during the month of March, the gross amount of tax is due. If the tax is not paid by the last day of March, tax additions of 1.5% per month are added to the tax for each month that the tax remains unpaid through the end of the calendar year. Beginning in January of the succeeding year, the 15% tax additions that accumulated during the last ten months of the preceding years are capitalized and the tax is registered delinquent. Interest is then computed on the new tax base at a rate of 0.5% per month until the real estate tax is fully paid. Commencing in February of the second year, an additional 1% per month penalty is assessed for a maximum of seven months. See the Fiscal Year 2004 Comprehensive Annual Financial Report for assessed and market values of taxable realty in the City and for levies and rates of collections.

During Fiscal Year 1997 and subsequent to the adoption of the Fiscal Year 1998 budget, the City decided to abandon the collection of the Personal Property Tax due to uncertainty as to the outcome of litigation challenging specific aspects of the tax then pending in other jurisdictions of the Commonwealth. As a result, the City realized no Personal Property Tax revenues in Fiscal Year 1998 or in subsequent years. The Personal Property Tax had been levied on the value of certain personal property of the residents of the City.

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**Table IV-3**  
**City of Philadelphia**  
**Summary of**  
**Principal Operating Funds (Debt Related)**  
**Revenues By Major Source**  
**Fiscal Years 1996-2005**  
**(Legal Basis)**  
**(Amounts in Millions of USD)**

Fiscal Year	Real & Personal Property Taxes <sup>(a)</sup>	Wage Earnings & Net Profits Taxes <sup>(a)</sup>	Business Privilege Tax <sup>(a)</sup>	Sales and Use Tax <sup>(a)</sup>	Other Taxes <sup>(b)</sup>	Total Taxes	Water & Wastewater Charges	Airport Charges	Other Locally Generated Charges	Total Local Revenue	Revenue from Other City Funds	Revenue from Other Gov'ts	Total Revenues
											Funds	Gov'ts	Revenues
1996	346.6	877.5 <sup>(c)</sup>	237.5	82.4	77.7	1,621.8	296.2	123.8	250.4	2,292.2	33.2	565.1	2,890.5
1997	358.2	885.4 <sup>(c)</sup>	246.4	91.4	93.8	1,675.2	291.0	125.8	236.8	2,328.8	44.1	587.9	2,960.8
1998	333.9 <sup>(d)</sup>	926.9 <sup>(c)</sup>	237.4	94.5	122.1	1,714.8	288.8	126.6	253.7	2,383.9	46.1	620.7	3,050.7
1999	342.6	949.8 <sup>(c)</sup>	254.5	101.4	118.3	1,766.6	290.5	143.2	259.9	2,460.2	103.1	639.9	3,203.2
2000	353.6	985.7 <sup>(c)</sup>	290.1	103.7	123.5	1,856.6	296.1	149.4	258.0	2,560.1	79.9	708.3	3,348.3
2001	363.4	1,059.0 <sup>(c)</sup>	314.0 <sup>(c)</sup>	111.3	130.0 <sup>(c)</sup>	1,997.7	285.8	175.7	251.3	2,710.5	90.5	781.7	3,580.0
2002	376.8	1,019.3	295.8	108.1	148.6	1,945.4	302.8	181.7	257.9	2,687.8	80.8	722.5	3,491.1
2003	361.1	1,025.1	286.1	108.0	156.3	1,936.6	329.6	219.4	327.4	2,813.0	62.8	909.7	3,785.5
2004	377.7	1,062.6	309.2	108.0	202.2	2,059.6	383.1	235.0	207.4	2,885.1	92.1	834.2	3,811.4
2005 <sup>(f)</sup>	384.4	1,072.0	292.2	108.0	184.8	2,041.8	383.5	293.5	321.4	3,040.2	243.9	1,028.1	4,312.2

(a) See Table 5 in the Fiscal Year 2004 Comprehensive Annual Financial Report for Tax Rates.

(b) Includes Real Estate Transfer Tax, Parking Tax, Amusement Tax, and Other Taxes.

(c) In Fiscal Year 1992, the City reduced the resident Wage and Earnings and Net Profits Taxes from 4.96% to 3.46% and levied the PICA Tax at a rate of 1.50%, the proceeds of which are remitted to PICA for payment of debt service on the PICA bonds and PICA's expenses.

(d) The City ceased collecting the Personal Property Tax in Fiscal Year 1997.

(e) See Note (b) on Table IV-1.

(f) Budgeted Amounts.

FIGURES MAY NOT ADD DUE TO ROUNDING.

**Table IV-4**  
**City of Philadelphia General Fund**  
**Tax Revenues (a)**  
**Fiscal Years 2000-2005**  
**(Amounts In Millions of USD)**

	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>
<b>REAL PROPERTY TAXES</b>						
Current	315.9	325.8	333.2	329.4	332.6	349.8
Prior	37.7	37.6	40.4	31.7	45.1	35.0
Total	<u>353.6</u>	<u>363.4</u>	<u>373.6</u>	<u>361.1</u>	<u>377.7</u>	<u>384.8</u>
<b>PERSONAL PROPERTY TAXES</b>						
Current <sup>(b)</sup>	0.0	0.0	0.0	0.0	0.0	0.0
Prior	0.0	0.0	0.0	0.0	0.0	0.0
Total	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>
<b>WAGE AND EARNINGS TAX<sup>(c)</sup></b>						
Current	949.6	1,023.1 <sup>(d)</sup>	981.8	987.2	1,034.5	1,030.0
Delinquent	23.4	24.1	24.2	26.2	15.1	29.0
Total	<u>973.0</u>	<u>1,047.2</u>	<u>1,006.0</u>	<u>1,013.4</u>	<u>1,049.6</u>	<u>1,059.0</u>
<b>BUSINESS TAXES</b>						
Business Privilege						
Current	251.7	275.5	273.8	238.7	269.9	240.2
Delinquent	38.4	38.5	22.0	47.4	39.2	52.0
Sub-Total Business Privilege	<u>290.1</u>	<u>314.0</u>	<u>295.8</u>	<u>286.1</u>	<u>309.2</u>	<u>292.2</u>
Net Profits Tax						
Current	9.9	10.6	11.4	10.1	11.3	10.5
Delinquent	2.8	1.2	2.0	1.6	1.7	2.5
Sub-Total Net Profits Tax	<u>12.7</u>	<u>11.8</u>	<u>13.4</u>	<u>11.7</u>	<u>13.0</u>	<u>13.0</u>
Total Business Taxes	<u>302.8</u>	<u>325.8</u>	<u>309.2</u>	<u>297.8</u>	<u>322.1</u>	<u>305.2</u>
<b>OTHER TAXES</b>						
Sales and Use Tax	103.7	111.3	108.1	108.0	108.0	108.0
Amusement Tax	11.7	13.0 <sup>(d)</sup>	13.8	14.1	18.3	17.0
Real Property Transfer Tax	77.7	77.0	96.7	103.4	141.3	127.0
Parking Taxes	34.1	39.0 <sup>(d)</sup>	37.9	38.7	42.5	40.7
Other Taxes	0.0	0.5	0.1	0.1	.1	0.1
Sub-Total Other Taxes	<u>227.2</u>	<u>241.3</u>	<u>256.6</u>	<u>264.3</u>	<u>310.2</u>	<u>292.8</u>
<b>TOTAL TAXES</b>	<u>1,856.6</u>	<u>1,977.7</u>	<u>1,945.4</u>	<u>1,936.6</u>	<u>2,059.6</u>	<u>2,041.8</u>

(a) See Table 5 in the Fiscal Year 2004 Comprehensive Annual Financial Report for Tax Rates.

(b) The City ceased levying the Personal Property Tax during the latter part of Fiscal Year 1997.

(c) Beginning in Fiscal Year 1992, the City reduced the resident Wage and Earnings and Net Profits Tax from 4.96% to 3.46% and levied the PICA Tax at a rate of 1.50%, the proceeds of which are remitted to PICA for payment of debt service on PICA bonds and the PICA expenses. After paying debt service and expenses, net proceeds from the tax are remitted to the City as Revenue from Other Governments.

(d) See Note (b) on Table IV-1

FIGURES MAY NOT ADD DUE TO ROUNDING.

**Table IV-5  
Ten Largest Certified Market and Assessment Values  
of Tax Abated Properties  
January 1, 2004**

	<u>Location</u>	<u>2004 Certified Market Value</u>	<u>Taxable Assessment</u>	<u>Assessment Value</u>
1	1600 John F Kennedy Blvd.	\$41,900,000	\$4,576,000	\$13,408,000
2	1600-18 Arch Street	36,411,200	2,150,400	11,651,584
3	3118-98 Chestnut Street	30,769,800	420,000	9,846,336
4	801 Market Street	30,000,000	1,544,000	9,600,000
5	11000 East Roosevelt Blvd.	24,277,400	3,680,000	7,768,768
6	3175 John F. Kennedy Blvd.	24,010,000	2,400,000	7,683,200
7	1319-25 Market Street	22,950,000	1,568,000	7,344,000
8	111 South 15th Street	16,830,000	2,240,000	5,385,600
9	2121-41 Market Street	15,585,000	1,136,000	4,987,200
10	1500 Chestnut Street	14,800,000	1,392,000	4,736,000

Source: City of Philadelphia, Board of Revision of Taxes.

### EXPENDITURES OF THE CITY

The major City expenditures are for personal services, employee benefits, purchase of services (including payments to SEPTA), and debt service.

#### Personal Services (Personnel)

As of June 30, 2004, the City employed 28,794 full-time employees with the salaries of 23,759 employees paid from the General Fund. Additional employment is supported by other funds, including the Water Fund and the Aviation Fund.

Additional operating funds for employing personnel are contributed by other governments, primarily for categorical grants, as well as for the conduct of the community development program. These activities 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 IV-6 City of Philadelphia  
Filled, Full-Time Positions – All Operating Funds**

	At June 30 Actual					Adopted Budget
	2000	2001	2002	2003	2004	2005
General Fund						
Police	7,812	7,807	7,800	7,983	7,704	7,821
Streets	2,130	2,141	2,080	2,009	1,937	1,957
Fire	2,468	2,500	2,458	2,479	2,336	2,302
Health	901	861	856	782	756	761
Courts	2,108	2,038	2,039	2,058	2,039	1,996
Other	<u>9,257</u>	<u>9,306</u>	<u>9,289</u>	<u>9,400</u>	<u>8,987</u>	<u>9,198</u>
Total General Fund	24,676	24,653	24,372	24,582	23,759	24,035
Other Funds	<u>4,556</u>	<u>4,649</u>	<u>4,700</u>	<u>4,659</u>	<u>5,035</u>	<u>5,509</u>
TOTAL	<u>29,232</u>	<u>29,302</u>	<u>29,072</u>	<u>29,241</u>	<u>28,794</u>	<u>29,544</u>



## **Labor Agreements**

Four major bargaining units represent City employees for collective bargaining purposes. District Councils 33 and 47 of the American Federation of State County and Municipal Employees, AFL-CIO represents approximately 15,000 non-uniformed employees. The bargaining units for uniformed employees are the Fraternal Order of Police, Lodge 5 (the "FOP") and the Philadelphia Fire Fighters Association, Local 22, International Association of Fire Fighters AFL-CIO ("Local 22"), which together represent approximately 9,400 employees. The non-uniformed employees bargain under Act 195 of 1972, which allows for the limited right to strike over collective bargaining impasses. The uniformed employees bargain under Pennsylvania Act 111 of 1968, which provides for final and binding interest arbitration to resolve collective bargaining impasses. All contract expiration dates are June 30 unless otherwise noted.

In September 2004, a collective bargaining agreement was reached with District Council 47. This four-year contract includes a \$750 payment to each member with no general wage increase in Fiscal Year 2005 and wage increases of 2, 3 and 4 percent effective July 1 of each succeeding year, respectively. In December 2004, a collective bargaining agreement was reached with District Council 33, which mirrored the agreement previously reached with District Council 47.

In 2003, an arbitration panel awarded Local 22 a 3% increase in wages effective July 1, 2002, a 3.5% wage increase effective July 1, 2003 and a 3% wage increase effective July 1, 2004. The three-year award also granted significant increases in health and welfare benefits to Local 22. That awarded contract expires in 2005.

The present FOP contract contains a 3% increase in wages effective July 1, 2004, 3% effective July 1, 2005, 3% effective July 1, 2006 and a 4% increase effective July 1, 2007.

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The following table presents employee wage increases for the Fiscal Years 1995 through 2005.

**Table IV-7  
City of Philadelphia  
Employee Wage Increases  
Fiscal Years 1995-2005**

<u>Fiscal Year</u>	<u>District Council No. 33</u>	<u>District Council No. 47</u>	<u>Fraternal Order of Police</u>	<u>International Association of Fire Fighters</u>
1995		2.0%	2.0%	2.0%
1996	3.0%	3.0%	3.0%	
1997	No increase (a)	No increase (a)		(b) 4.0%
1998		(d)	4.0%	(e) 4.0%
1999	3.0%	3.0%	3.0%	(h) 3.0%
2000	4.0%	4.0%	4.0%	(k) 4.0%
2001	No increase (m)	No increase (m)	3.0%	3.0%
2002	3.0%	3.0%	4.0%	4.0%
2003	3.0%	3.0%	3.0%	3.0%
2004	3.0%	3.0%	3.5%	3.5%
2005	No increase (p)	No increase (p)	3.0%	3.0%

- (a) First year of a four year contract: received a cash bonus of \$1,100 in July 1996.
- (b) First year of a two year contract: 4% effective July 1, 1996.
- (c) First year of a four year contract: 4% effective July 1, 1996.
- (d) Second year of a four year contract: 3% effective December 15, 1997.
- (e) Second year of a two year contract: 4% effective September 15, 1997.
- (f) Second year of a four year contract: 4% effective September 15, 1997.
- (g) Third year of a four year contract: 3% effective December 15, 1998.
- (h) First year of a two year contract: 3% effective September 15, 1998.
- (i) Third year of a four year contract: 3% effective September 15, 1998.
- (j) Fourth year of a four year contract: 4% effective March 15, 2000.
- (k) Second year of a two year contract: 4% effective September 15, 1999.
- (l) Fourth year of a four year contract: 4% effective September 15, 1999.
- (m) First year of a four year contract: cash bonus of \$1,500 paid in August 2000.
- (n) Second year of a four year contract: 3% effective December 15, 2001.
- (o) Third year of a four year contract: 3% effective December 15, 2002.
- (p) First year of a four year contract: cash bonus of \$750 paid in October 2004 to District Council 47 members and in December 2004 to District Council 33 members.

## Employee Benefits

The City provides various pension, life insurance, health, and medical benefits for its employees. General Fund employee benefit expenditures for Fiscal Years 2000 through 2005 are shown in the following table.

**Table IV-8 City of Philadelphia  
General Fund Employee Benefit Expenditures  
Fiscal Years 2000-2005  
(Amounts in Millions of USD)**

	<u>Actual</u>					<u>Adopted Budget</u>
	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>
Pension Contribution	219.7	194.2	196.6	205.7	229.4	319.4
Health/Medical/Dental	172.2	186.7	187.6	226.6	253.7	275.0
Social Security	53.5	57.8	57.4	59.4	60.6	63.9
Other	48.4	44.6	44.2	48.9	55.2	55.4
Total	493.8	483.3	485.8	540.6	598.9	713.7

## **Municipal Pension Fund (Related to All Funds)**

The City is required by the Home Rule Charter to maintain an actuarially sound pension and retirement system covering all officers and employees of the City. Court decisions have interpreted this requirement to mean that the City must make contributions to the Municipal Pension Fund sufficient to fund:

- A. Accrued actuarially determined normal costs.
- B. Amortization of the unfunded actuarial accrued liability (“UAAL”) determined as of July 1, 1985. The portion of that liability attributable to a class action lawsuit by pension fund beneficiaries is amortized in level installments, including interest, over 40 years through June 30, 2009. The remainder of the liability is amortized over 34 years with increasing payments expected to be level as a percentage of each year’s aggregate payroll.
- C. Amortization in level dollar payments of the changes in the July 1, 1985 liability due to: nonactive member’s benefit modifications (10 years); experience gains and losses (15 years); changes in actuarial assumptions (20 years); and active members’ benefit modifications (20 years).

The pension fund was actuarially valued every two years through 1984, and beginning with the July 1, 1985 valuation report, is required to be actuarially valued each year.

The July 1, 1980 unfunded liability, as amended by subsequent reports, will be amortized over 38 years through annual contributions which will closely approximate a level percent of payroll. The Pennsylvania Municipal Pension Plan Funding Standard and Recovery Act, enacted December 18, 1984 adopted changes in funding of municipal pensions that have been reflected in the valuation report for July 1, 1985. In particular, this act generally requires that unfunded actuarial accrued liability be funded in annual level dollar payments. The City is permitted to amortize the July 1, 1985 UAAL over 40 years ending in 2025.

Based on an actuarial schedule providing payments increasing at 5.0% per annum, the unfunded accrued liability of \$1.8 billion, as of July 1, 2002 should be fully amortized by 2019.

Non-uniformed employees become vested in the Municipal Pension Plan upon the completion of ten years of service or upon attainment of age fifty-five. Upon retirement, non-uniformed employees may receive up to 80% of their average final compensation depending upon their years of credited service. Uniformed employees become vested in the Municipal Pension Plan upon the completion of ten years of service or upon attainment of age forty-five. Upon retirement, uniformed employees may receive up to 100% of their average final compensation depending upon their years of credited service.

Effective January 1, 1987 the City adopted a new plan (“Plan 87”) to cover employees hired after January 8, 1987, as well as members in the previous Plan who elected to transfer to Plan 87. Except for elected officials, Plan 87 provides for less costly benefits and reduced employee contributions. For elected officials, Plan 87 provides for enhanced benefits, with participating elected officials required to pay for the additional normal cost. Police and Fire personnel became eligible for Plan 87 on July 1, 1988. Because of Court challenges, members of District Council 33 and Local 2187 of District Council 47 were not eligible for Plan 87 until October 2, 1992.

A comprehensive statement of operations of the City Municipal Pension Fund for Fiscal Years 1995 through 2004 is contained in the Fiscal Year 2004 Comprehensive Annual Financial Report.

## **Purchase of Services**

The City accounts for a number of expenditures as purchase of services. The following table presents major purchases of services in the General Fund in Fiscal Years 2000 through 2005.

**Table IV-9**  
**City of Philadelphia**  
**Purchase of Services In The General Fund**  
**Fiscal Years 2000-2005**  
**(Amounts In Millions of USD)**

	<u>Actual</u>					<b>Adopted Budget</b>
	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>
Human Services (a)	335.0	360.2	393.1	452.2	493.7	543.6
Public Health	58.2	62.0	73.6	68.2	69.1	72.6
Public Property(b)	135.6	140.3	144.3	135.1	132.4	129.5
Streets(c)	49.7	49.7	50.4	54.4	53.9	53.7
Sinking Fund-Lease Debt(d)	44.2	42.6	57.8	74.3	70.8	78.3
Legal Services(e)	25.2	27.1	29.5	30.9	33.4	33.5
First Judicial District	27.9	28.8	21.9	27.5	23.0	22.6
Licenses & Inspections(f)	15.5	23.7	25.9	2.9	6.0	3.3
Emergency(g)	11.9	11.8	11.6	13.9	12.0	12.6
All Other	<u>145.7</u>	<u>125.6</u>	<u>142.9</u>	<u>147.7</u>	<u>156.0</u>	<u>147.4</u>
Total	<u>848.9</u>	<u>871.8</u>	<u>951.2</u>	<u>1,007.1</u>	<u>1,050.3</u>	<u>1,097.1</u>

- (a) Includes payments for care of dependent and delinquent children.  
(b) Includes payments for SEPTA, space rentals, utilities, and telecommunications.  
(c) Includes solid waste disposal costs.  
(d) Includes Justice Center, Neighborhood Transformation Initiative and Stadium lease debt.  
(e) Includes payments to the Defender Association to provide legal representation for indigents.  
(f) Includes payments for demolition through Fiscal Year 2002.  
(g) Includes homeless shelter and boarding home payments.

FIGURES MAY NOT ADD DUE TO ROUNDING

### City Payments to School District

In each fiscal year since Fiscal Year 1996, the City has made an annual grant of \$15 million to the School District. Pursuant to negotiations with the Commonwealth to address the School District's current and future educational and fiscal situation, the Mayor and City Council agreed to provide the School District with an additional annual \$20 million beginning in Fiscal Year 2002.

Act 22 required PPA to transfer to the School District in PPA's fiscal year beginning April 1, 2001, that portion of PPA's retained earnings, not to exceed \$45,000,000, which will not jeopardize its ability to meet debt service payments or to retire outstanding bonds. The City filed two lawsuits challenging Act 22 itself and certain specific provisions thereof. However, the "retained earnings" provision recently was repealed by the General Assembly as a part of Act 94 of 2004 and this may have an impact upon the lawsuits. See "REVENUES OF THE CITY – Philadelphia Parking Authority – Act 22 Litigation" above.

Act 9 requires that the PPA transfer to the School District at the end of each fiscal year commencing with fiscal year 2004 that portion of the net revenues derived from the system of on-street parking operations which exceeds \$25,000,000. The City has instituted a lawsuit in the Commonwealth Court challenging the constitutionality of Act 9. See "REVENUES OF THE CITY – Philadelphia Parking Authority – Act 9 Litigation" above.

## **City Loan to PGW**

The City made a loan of \$45 million to PGW during Fiscal Year 2001 to assist PGW in meeting its cash flow requirements. This loan is scheduled to mature in Fiscal Year 2007; however, the current Five-Year Plan projects that the loan will be repaid in the City's Fiscal Year 2009. The extension of the repayment date to Fiscal Year 2009 is subject to City Council approval. In addition, in order to assist PGW, (i) the City has agreed to forgo the \$18 million annual rental payment in Fiscal Year 2004, and (ii) the Thirteenth Five-Year Plan contemplates that in each of the Fiscal Years 2005 through 2008, the City will make a grant to PGW equal to the annual rental payment received from PGW in such Fiscal Years. The \$18 million grant back has been appropriated by the City for Fiscal Year 2005.

## **City Payments to SEPTA**

The City's Fiscal Year 2004 operating subsidy payment to SEPTA was \$57.2 million. The Fiscal Year 2005 budget projects operating subsidy payments to SEPTA of \$57.2 million. The Thirteenth Five-Year Plan provides that the City's contribution to SEPTA will increase to \$62.5 million by Fiscal Year 2009.

## **DEBT OF THE CITY**

The Constitution of the Commonwealth provides that the authorized debt of the City "may be increased in such amount that the total debt of said 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 said 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." It has been judicially determined that bond authorizations once approved by the voters will not be reduced as a result of a subsequent decline in the average assessed value of City property.

The Constitution of the Commonwealth further provides that there shall be excluded from the computation of debt for purposes of the Constitutional debt limit, debt (herein called "self-supporting debt") incurred for revenue-producing capital improvements that may reasonably be expected to yield revenue in excess of operating expenses sufficient to pay interest and sinking fund charges thereon. In the case of general obligation debt, the amount of such self-supporting debt to be so excluded must be determined by the Court of Common Pleas of Philadelphia County upon petition by the City. Self-supporting debt is general obligation debt of the City, with the only distinction from tax-supported debt being that it is not used in the calculation of the Constitutional debt limit. Self-supporting debt has no lien on any particular revenues.

As of July 1, 2004, the Constitutional debt limitation for tax-supported general obligation debt was approximately \$1,280,316,000 (based upon a formula of 13.5% of the assessed value of real estate within the City on a 10 year rolling average). The City has total authorized general obligation debt of \$1,526,479,000, including approximately \$367,350,000 of self-sustaining debt, which does not count against the constitutional debt limit. In addition, maturing serial bonds in the approximate amount of \$29,884,000 were repaid in Fiscal Year 2004. As a result, \$1,129,245,000 of general obligation debt subject to the constitutional debt limit was outstanding on June 30, 2004. A balance of \$151,071,000 remained available for future authorization as of June 30, 2004.

The City is also authorized to issue revenue bonds pursuant to The First Class City Revenue Bond Act of 1972. Currently, the City issues revenue bonds to support the Division of Aviation, the Water Department and the PGW. Bonds so issued are excluded for purposes of the calculation of the Constitutional debt limit.

## **Short-Term Debt**

The City has issued notes in anticipation of the receipt of income by the General Fund in each fiscal year since Fiscal Year 1972. Each note issue was repaid when due prior to the end of the fiscal year of issuance.

The City issued \$370 million of Tax and Revenue Anticipation Notes in August 2004. These notes are due on June 30, 2005. The City intends to repay these notes when due at maturity.

## Long-Term Debt

Table IV-10 presents a synopsis of the bonded debt of the City and its component units at the close of Fiscal Year 2004. In addition, see the Fiscal Year 2004 Comprehensive Annual Financial Report for tables setting forth a ten year historical summary of tax-supported debt of the City and School District and the debt service requirements to maturity of the City's outstanding bonded indebtedness. As of June 30, 2004, the City's tax-supported general obligation debt issued and outstanding equaled \$1,017,800,000.

Of the total balance of City tax-supported general obligation bonds outstanding at June 30, 2004, 20% is scheduled to mature within 5 years and 44% is scheduled to mature within 10 years.

## 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 of June 30, 2004, the principal amount of the outstanding bonds of each of these authorities relating to the City's contract and lease obligations was as follows:

PMA	\$264.1 million
PAID	\$1,651.4 million
Parking Authority	\$82.5 million
Redevelopment Authority	\$141.8 million
Hospitals Authority	\$24.1 million
Convention Center Authority	\$246.2 million

\* Source: Office of the Director of Finance

The bonds of the Parking Authority included in the previous table are payable from project revenues, and by the City only if and to the extent that net revenues are inadequate for this purpose. See "REVENUES OF THE CITY – Philadelphia Parking Authority."

The Hospitals Authority has issued bonds on behalf of the Community College of Philadelphia ("CCP"). These bonds are secured by, among other things, payments to be made by the City as the local sponsor pursuant to the enabling legislation that authorized the creation of CCP. As the local sponsor, the City is obligated to pay up to 50% of the debt service on bonds issued on behalf of CCP. The principal amount of such bonds for which the City is obligated to make such payments was \$24,105,000 as of June 30, 2004; this amount represents 50% of the \$48,210,000 principal amount of bonds issued and outstanding for CCP purposes as of June 30, 2004.

## Recent Financings

In October 2004, the City issued revenue bonds for the Philadelphia Gas Works, including \$120,000,000 Gas Works Revenue Bonds, Fifth Series A-1, and \$30,000,000 of Gas Works Variable Rate Demand Revenue Bonds, Fifth Series A-2 under the 1998 General Gas Works Revenue Bond Ordinance, which were issued to finance capital programs at PGW included in the City's capital budget, and \$57,820,000 of Gas Works Revenue Bonds, Eighteenth Series under the 1975 General Gas Works Bond Ordinance for the purpose of refinancing a portion of the outstanding Fifteenth Series Bonds under the 1975 General Gas Works Ordinance.

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**Table IV-10 City of Philadelphia  
City Related Bond Indebtedness  
June 30, 2004  
(Amounts In Millions of USD)**

	<u>Governmental Fund Types</u>			<u>Enterprise Funds</u>				
	<u>City General Fund</u>	<u>Municipal Authority Fund</u>	<u>PICA</u>	<u>Gov't Fund Totals</u>	<u>Water Fund</u>	<u>Aviation Fund</u>	<u>Enterprise Funds Totals</u>	<u>All Funds Totals</u>
Bond Debt Outstanding, July 1, 2003	814.2	284.3	806.4	1904.9	1,807.5	1,129.2	2,936.7	4,841.6
Bonds Issued:								
General Obligation	250.0	0.0	0.0	250.0	0.0	0.0	0.0	250.0
General Obligation Refunding	0.0	217.5	0.0	217.5	0.0	0.0	0.0	217.5
Revenue Bonds	-	-	-	-	0.0	0.0	0.0	0.0
Revenue Funding	-	-	-	-	0.0	0.0	0.0	0.0
Total Bonds Issued	<u>250.0</u>	<u>217.5</u>	<u>0.0</u>	<u>467.5</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>467.5</u>
Bonds Matured-Refunded								
General Obligation	43.2	26.7	35.7	105.6	1.1	2.7	3.8	109.4
General Obligation Refunded	0.0	226.6	0.0	226.6	0.0	0.0	0.0	226.6
Revenue	-	-	-	-	68.0	33.6	101.6	101.6
Revenue Refunded	-	-	-	-	0.0	0.0	0.0	0.0
Total Bonds Matured-Refunded	<u>43.2</u>	<u>253.3</u>	<u>35.7</u>	<u>332.2</u>	<u>69.1</u>	<u>36.3</u>	<u>105.4</u>	<u>437.6</u>
Bonded Debt Outstanding June 30, 2004								
General Obligation	1021.0	248.5	770.7	2,040.2	9.2	2.4	11.6	2,051.8
Revenue	-	-	-	-	1,729.2	1,090.5	2,819.7	2,819.7
Total Bonded Debt Outstanding	<u>1021.0</u>	<u>248.5</u>	<u>770.7</u>	<u>2,040.2</u>	<u>1,738.4</u>	<u>1,092.9</u>	<u>2,831.3</u>	<u>4,871.5</u>
Sinking Fund Assets Available for Payment of Principal	<u>0.0</u>	<u>0.0</u>	<u>78.2</u>	<u>78.2</u>	<u>158.6</u>	<u>67.7</u>	<u>226.3</u>	<u>304.5</u>
Net Debt	<u>1021.0</u>	<u>248.5</u>	<u>692.5</u>	<u>1,962.0</u>	<u>1,579.8</u>	<u>1,025.2</u>	<u>2,605.0</u>	<u>4,567.0</u>

Source: Office of Director of Finance

## CITY CAPITAL IMPROVEMENT PROGRAM

The Capital Improvement Program for Fiscal Years 2005-2010 contemplates a total expenditure of \$3,868,337,000, of which \$1,927,927,000 is to be provided from Federal, Commonwealth, and other sources and the remainder through City funding. The following table shows the amounts anticipated to be spent each year from various sources of funds for capital projects. City Council adopted the Capital Improvement Program for Fiscal Years 2005-2010 on July 1, 2004.

**Table IV-11**  
**City of Philadelphia**  
**Fiscal Years 2005-2010**  
**Capital Improvement Program**  
**(Amounts in Thousands of USD)**

	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>Total</u>
New Loans	67,561	60,720	53,087	47,980	46,317	45,805	321,469
Operating Revenue	10,040	4,550	4,550	5,250	5,250	5,250	34,890
Prefinanced Loans	<u>1,000</u>	<u>1,000</u>	<u>1,000</u>	<u>1,000</u>	<u>1,000</u>	<u>1,000</u>	<u>6,000</u>
<b>Tax-Supported Total</b>	<b>78,601</b>	<b>66,270</b>	<b>58,637</b>	<b>54,230</b>	<b>52,567</b>	<b>52,055</b>	<b>362,359</b>
New Loans	151,071	256,043	227,797	325,469	236,734	253,868	1,450,982
Operating Revenue	<u>16,329</u>	<u>16,548</u>	<u>16,748</u>	<u>16,948</u>	<u>17,148</u>	<u>17,348</u>	<u>101,069</u>
<b>Self-Sustaining Total</b>	<b>167,400</b>	<b>272,591</b>	<b>244,545</b>	<b>342,417</b>	<b>253,882</b>	<b>271,216</b>	<b>1,552,051</b>
Revolving Funds	<u>16,000</u>	<u>2,000</u>	<u>2,000</u>	<u>2,000</u>	<u>2,000</u>	<u>2,000</u>	<u>26,000</u>
Federal	55,267	107,028	107,024	74,406	63,832	65,292	472,849
Federal Off Budget	136,535	183,815	174,036	170,627	143,299	108,613	916,935
State	6,239	13,176	9,711	4,884	4,448	5,738	44,196
State Off Budget	52,187	65,156	47,483	44,526	64,135	66,576	340,063
Private	4,220	28,520	28,520	28,520	28,520	28,520	146,820
Other Governments/Agencies	300	0	0	0	0	0	300
Other Governments/Off-Budget	<u>809</u>	<u>1,545</u>	<u>1,220</u>	<u>994</u>	<u>974</u>	<u>1,222</u>	<u>6,764</u>
<b>Other Than City Funds Total</b>	<b><u>255,557</u></b>	<b><u>399,240</u></b>	<b><u>367,994</u></b>	<b><u>323,967</u></b>	<b><u>305,208</u></b>	<b><u>275,960</u></b>	<b><u>1,927,927</u></b>
	<u>517,558</u>	<u>740,101</u>	<u>673,176</u>	<u>722,614</u>	<u>613,657</u>	<u>601,231</u>	<u>3,868,337</u>

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## LITIGATION

Generally, judgments and settlements on claims against the City are payable from the General Fund, except for claims against the Water Department, the Aviation Division, and the Gas Works. Claims against the Water Department are paid first from the Water Fund and only secondarily from the General Fund. Claims against the Aviation Division, to the extent not covered by insurance, are paid first from the Aviation Fund and only secondarily from the General Fund. Claims against the Gas Works, to the extent not covered by insurance, are paid first from Gas Works revenues and only secondarily from 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 has been repeatedly upheld by the Pennsylvania Supreme Court. In February 1987, an appeal of a decision upholding such constitutionality to the United States Supreme Court was dismissed for want of jurisdiction. However, under Pennsylvania Rule of Civil Procedure 238, delay damages in State Court cases are not subject to the \$500,000 limitation. Moreover, the limit on damages is inapplicable to any suit against the City which does not arise under state tort law such as claims made against the City under Federal civil rights laws.

The aggregate loss resulting from general and special litigation claims was \$30.2 million for Fiscal Year 2001, \$30.0 million for Fiscal Year 2002, \$24.2 million for Fiscal Year 2003, and \$21.8 million for Fiscal Year 2004. The City's Five-Year Plan dated March 18, 2004 includes estimates of settlements and judgments from the General Fund of \$25.1 million, \$24.1 million, \$24.1 million, \$24.1 million, and \$23.0 million for the Fiscal Years 2005 through 2009, respectively. The revised estimate for Fiscal Year 2005 is now \$24.9 million. 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. Actual claims paid out from the General Fund for settlements and judgments averaged \$27.0 million per year over the five years from Fiscal Year 2000 through Fiscal Year 2004.

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 City's 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) a class action suit alleging that the City failed to properly oversee management of funds in the deferred compensation plan of City employees; (iii) a civil rights claim; (iv) a labor arbitration award holding that the City should have used union employees rather than outside contractors since 1997 to provide home inspections for first time home buyers subsidized by the City's Office of Housing and Community Development and a claim for back-pay by current and former City paramedics; (v) a mandamus action to compel the Mayor to provide free trash collection to all condominiums and cooperatives; and (vi) a claim made by a Philadelphia sports franchise alleging damages for the cancellation of a professional exhibition game allegedly because the field at Veterans' Stadium was not in playable condition.

The ultimate outcome and fiscal impact, if any, on the City's General Fund of the claims and proceedings described in the preceding paragraph are not currently predictable. Various claims in addition to the lawsuits described above 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 aggregate loss for Fiscal Year 2003 which resulted from these claims and lawsuits was \$3.9 million, and \$2.7 million for Fiscal Year 2004. The Water Department's budget for Fiscal Year 2005 contains an appropriation for Water Department claims in the amount of \$6.5 million. The Water Fund is the first source of payment for any of the claims against the Water Department.

## **CRIMINAL INVESTIGATION**

The Office of the U.S Attorney and the Federal Bureau of Investigation are currently conducting an investigation, in the course of which they have subpoenaed certain records and communication devices of the City of Philadelphia. The Administration has responded to the subpoenas and has provided the items requested.

On June 29, 2004, a federal grand jury issued indictments against twelve individuals including former City Treasurer, Corey Kemp. The indictment against Mr. Kemp charges him with, among other things, conspiracy to commit honest services fraud, extortion and money laundering. These charges relate to Mr. Kemp's activities as City Treasurer, including the appointment of firms to participate in municipal bond and other financial transactions of the City. Mr. Kemp has entered pleas of not guilty to all of the charges against him. Of the 11 other individuals indicted, five have entered guilty pleas, one has been acquitted and one is now deceased.

On September 29, 2004, a federal grand jury issued indictments against seven individuals including John Christmas, former special assistant to the Chief of Staff for the Mayor, and Steven Vaughn, former Chief of Staff for the City Councilperson elected to represent the Eighth District. The indictment against Mr. Christmas charges him with scheming to defraud, conspiracy to commit mail fraud, perjury and making false statements. These charges relate to certain activities of Mr. Christmas which allegedly resulted in the improper awarding of a City contract. The indictment against Mr. Vaughn charges him with scheming to defraud and conspiracy to commit mail fraud. These charges relate to certain activities of Mr. Vaughn which allegedly resulted in fraudulent representations made in the awarding of a City contract. Mr. Christmas entered a plea of not guilty to all of the charges against him. Mr. Vaughn entered a guilty plea to all of the charges against him.

The City is cooperating fully with federal investigators in pursuing their case.

## **ADDITIONAL INFORMATION**

### **Current City Practices**

It is the practice of the City in connection with the issuance and sale of each issue of the City's bonds or notes, to require in its contract with its underwriters that the underwriters deposit the official statement of the City relating to such issue of bonds or notes with a nationally recognized municipal securities information repository (a "Repository") as soon as practicable after delivery of such official statement. It is also the City's practice to file its Comprehensive Annual Financial Report ("CAFR"), which contains the audited combined financial statements of the City, with a Repository as soon as practicable after delivery of such report. The CAFR for the City's fiscal year ended June 30, 2003 was deposited with a Repository on January 13, 2004. The CAFR is prepared by the Director of Finance of the City 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. Upon written request to the Office of the Director of Finance and payment of the costs of duplication and mailing, the City will make available copies of the CAFR for the Fiscal Year ended June 30, 2004. Such a request should be request should be addressed to: Office of the Director of Finance, Municipal Services Building, Suite 1330, 1401 John F. Kennedy Boulevard, Philadelphia, PA 19102. The City also expects to provide financial and other information as to the City from time to time to Moody's Investors Service, Standard & Poor's Ratings Group and Fitch Ratings, in connection with the securities ratings assigned by those rating agencies to bonds or notes of the City.

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

## CITY SOCIOECONOMIC INFORMATION

### Introduction

The City includes within its boundaries an area of approximately 130 square miles and a resident population of approximately 1.52 million people. The City is in the heart of a nine-county metropolitan area with approximately 5.1 million residents. Air, rail, highway, and water routes provide easy access to the City.

The City is strategically located on the east coast with easy access to markets, resources, government centers, and transportation. The City's metropolitan area is the nation's fourth largest in terms of total retail sales and disposable income with approximately one-half of the population of the United States living within an overnight drive.

### Quality of Life

The City is very livable with relatively low housing costs. The National Association of Realtors Affordability Index ranks the Philadelphia region as the 22<sup>nd</sup> most affordable housing market out of 180 sampled in the United States.

The City is rich in history, art, architecture, and entertainment. World-class cultural and historic attractions include the Philadelphia Museum of Art (which houses the third largest art collection in the United States), the Philadelphia Orchestra, Academy of Music, Pennsylvania Ballet, the Constitution Center, the Kimmel Center, Pennsylvania Academy of Fine Arts, Franklin Institute, Mann Music Center, Opera Company of Philadelphia, and the Rodin Museum. The South Philadelphia sports complex, currently consisting of Lincoln Financial Field, Citizen's Bank Park, the Wachovia Spectrum and the Wachovia Center, is home to the Philadelphia 76ers, Flyers, Phillies and Eagles. The City also offers its residents and visitors America's most historic square mile, which includes Independence Hall and the Liberty Bell, as well as Fairmount Park, which includes Pennypack Park and the country's first zoo, within its 8,000 acres.

The City is a center for health, education, and science facilities with presently more than 30 hospitals, seven medical schools, two dental schools, two pharmacy schools, as well as schools of optometry, podiatry and veterinary medicine, and the Philadelphia Center for Health Care Sciences in West Philadelphia. 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.

The City has eighty degree-granting institutions of higher education with a total enrollment of over 110,000 students. Included among these institutions are the University of Pennsylvania, Temple University, Drexel University, St. Joseph's University, and LaSalle University. Within a short drive from the City are such schools as Villanova University, Bryn Mawr College, Haverford College, Swarthmore College, Lincoln University, and the Camden Campus of Rutgers University. The undergraduate and graduate programs at these institutions help provide a well-educated and trained work force to the Philadelphia community.

The City also has major research facilities, including those located at its universities, the medical schools, the Wistar Institute, the Fox Chase Cancer Center, and the University City Science Center. The Children's Hospital of Philadelphia has recently completed the construction of a new \$100 million biomedical research facility located within the Philadelphia Center for Health Care Sciences in West Philadelphia. A major new cancer research center is also planned by the University of Pennsylvania.

### Demographics

During the ten year period between 1990 and 2000, the population of the City decreased from 1,585,577 to 1,517,550. During the same period, the population of the Philadelphia Primary Metropolitan Statistical Area ("PMSA") increased by 5.0%, less than one-half the national rate of increase.

**Table IV-12  
Population  
City, PMSA & Nation**

	<u>1990</u>	<u>2000</u>	<u>% Change 1990-2000</u>
Philadelphia	1,585,577	1,517,550	-4.3%
Philadelphia PMSA*	4,856,881	5,100,931	5.0%
United States	248,709,873	281,421,906	13.2%

Source: U.S. Dept. of Commerce, Bureau of the Census.

\* The Philadelphia, PA-NJ Primary Metropolitan Statistical Area includes the counties of Bucks, Chester, Delaware, Montgomery, and Philadelphia in Pennsylvania and the counties of Burlington, Camden, and Gloucester in New Jersey. In 1993, Salem County, New Jersey was added to the Philadelphia, PA-NJ PMSA.

**Table IV-13  
Population Age Distribution**

Age	Philadelphia				Pennsylvania			
	<u>1990</u>	<u>% of Total</u>	<u>2000</u>	<u>% of Total</u>	<u>1990</u>	<u>% of Total</u>	<u>2000</u>	<u>% of Total</u>
0-24	563,816	35.6	551,308	36.3	4,021,585	33.8	3,877,729	32.3
25-44	490,224	30.9	444,774	29.3	3,657,323	30.8	3,515,421	29.3
45-64	290,803	18.3	307,746	20.2	2,373,629	20.0	2,701,930	22.5
65-84	217,913	13.7	186,383	12.3	1,657,270	13.9	1,666,641	13.9
85 & up	22,801	1.4	27,339	1.8	171,836	1.4	232,295	1.9
Total	1,585,577	100.0	1,517,550	100.0	11,881,643	100.0	11,994,016	100.0

Source: U.S. Dept. of Commerce, Bureau of the Census.

Age	United States			
	<u>1990</u>	<u>% of Total</u>	<u>2000</u>	<u>% of Total</u>
0-24	90,342,198	36.3	99,437,266	35.3
25-44	80,754,835	32.5	85,040,251	30.2
45-64	46,371,009	18.6	61,952,636	22.0
65-84	28,161,666	11.3	30,752,166	11.0
85 & Up	3,080,165	1.2	4,239,587	1.5
Total	248,709,873	100.0	281,421,906	100.0

Source: U.S. Dept. of Commerce, Bureau of the Census.

## The Economy

Philadelphia's economy is composed of diverse industries, with virtually all classes of industrial and commercial businesses represented. The City is a major business and personal service center with strengths in insurance, law, finance, health, education, and utilities.

The cost of living in Philadelphia is relatively moderate compared to other major metropolitan areas. The City, as one of the country's education centers, offers the business community a large, diverse, and industrious labor pool.

**Table IV-14**  
**Office Rental Rates in Cities**  
**Throughout the United States**

(In \$ Per Square Foot)

	<b>Sept, 1999</b>	<b>Sept, 2000</b>	<b>March, 2001</b>	<b>March, 2002</b>	<b>March, 2003</b>	<b>January, 2004</b>	<b>January, 2005</b>
Atlanta	20.00	20.20	22.08	21.60	23.91	23.09	21.92
Chicago	25.99	28.16	24.03	24.02	22.30	29.97	28.47
Dallas	19.99	20.87	18.51	19.77	21.32	20.58	19.71
Denver	18.50	19.70	18.27	16.58	18.29	17.84	17.24
Houston	21.09	22.61	16.30	18.20	19.97	19.29	18.21
Los Angeles	20.16	20.64	27.30	27.42	27.62	25.56	26.55
New York	33.08	43.10	53.26	47.20	43.53	45.51	45.16
<b>Philadelphia</b>	<b>19.80</b>	<b>21.28</b>	<b>23.49</b>	<b>22.16</b>	<b>23.97</b>	<b>23.24</b>	<b>21.97</b>
Phoenix	19.81	20.28	21.57	21.11	20.90	20.38	19.39
Portland	20.25	21.50	20.50	20.00	21.55	20.59	19.65
San Francisco	47.00	78.21	61.80	30.20	28.01	27.15	27.75
St. Louis	19.09	19.35	17.97	17.83	21.93	20.52	19.91
Tampa	18.20	20.25	18.93	18.89	19.66	19.23	18.01
Washington, D.C.	32.90	35.76	30.52	30.63	39.08	31.05	35.95

Source: Insignia/ESG Commercial Market Report, National Market Overview.

## Employment

The employment and unemployment rates and the total number of jobs within the City are reflected in Tables IV-15 and IV-16, respectively.

The employment changes within the City principally have been due to declines in the manufacturing sector and the relatively stronger performance of the service economy. The City's and region's economies are diversified, with strong representation in the health care, government, and education sectors but without the domination of any single employer or industry.

In accordance with the federal government's plans to close military facilities, the City saw several major closure actions in the 1990's, including the Philadelphia Navy Shipyard and Naval Station ("Navy Yard"), the Philadelphia Naval Hospital, and the former Defense Supply Center of Philadelphia. At the time of their closures, these facilities employed in excess of 20,000 people.

Since these closure actions and the subsequent transfer of property from the federal government, the City has seen substantial progress in the revitalization of these assets and rebuilding the lost employment base. Most significant, employment at the former Navy Yard complex has begun to climb. In March 2000, the Philadelphia Authority for Industrial Development ("PAID") took ownership of more than 1,000 acres at the site and has begun to implement aggressive redevelopment activities. To date, at least 47 companies have leased or purchased in excess of 2 million square feet of facilities at the complex, now known as the Philadelphia Naval Business Center ("PNBC"). In addition to this employment, the Navy has retained more than 2 million square feet of facilities. Together, the private and Navy facilities employ more than 5,500 people. Long term plans call for more than 10 million square feet of industrial and commercial space at PNBC, with employment targeted between 15,000-20,000.

**Table IV-15  
Labor Force Data Annual Average  
Based On Residency**

	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004*</u>
<b>Philadelphia (000)</b>										
Labor Force	644.2	641.4	643.0	640.0	644.2	628.7	666.4	680.3	672.1	678.3
Employment	594.4	596.1	598.3	600.4	606.9	590.1	625.0	628.5	628.5	633.5
Unemployment	49.8	45.3	44.7	39.6	36.8	38.6	41.3	51.7	43.6	44.8
Unemployment Rate (%)	7.7	7.1	7.0	6.2	5.8	6.1	6.4	7.5	7.7	7.4
<b>Philadelphia PMSA (000)</b>										
Labor Force	2,428.5	2,464.2	2,502.1	2,493.1	2,515.4	2,503.2	2,534.8	2,649.2	2,645.0	2,660.6
Employment	2,286.3	2,334.1	2,380.5	2,385.5	2,412.9	2,403.5	2,425.1	2,502.3	2,519.5	2,544.3
Unemployment	142.2	130.1	121.6	107.6	104.6	99.8	109.7	146.9	125.2	116.3
Unemployment Rate (%)	5.9	5.3	4.9	4.3	4.1	4.0	4.3	5.5	4.7	4.4
<b>United States (000,000)</b>										
Labor Force	132.3	133.9	136.3	137.7	139.4	140.9	143.7	144.9	146.5	147.4
Employment	124.9	126.7	129.6	131.5	133.5	135.2	136.9	136.5	137.7	139.3
Unemployment	7.4	7.2	6.7	6.2	5.9	5.7	6.8	8.4	8.8	8.1
Unemployment Rate (%)	5.6	5.4	4.9	4.5	4.2	4.0	4.7	5.8	5.4	5.5

Source: Pennsylvania Department of Labor and Industry, Bureau of Research and Statistics. Pennsylvania Civilian Labor Force Series by County of Residence and Pennsylvania Civilian Labor Force Series by Labor Market Area.

(a) Important Notice: Labor force data beginning January 1994 are not comparable to earlier data due to the implementation of revised survey methodology by the U.S. Department of Labor.

\* Preliminary

**Table IV-16  
Philadelphia  
Total Monthly Employment And Monthly Unemployment Rates  
Based On Residency  
2000 – 2004**

<u>Month</u>	<u>Total Employment in 000's</u>					<u>Unemployment Rate %</u>				
	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>
January	582.3	589.3	590.5	612.9	661.8	6.1	6.2	7.1	8.3	7.7
February	581.7	588.9	586.1	614.1	662.2	6.1	6.4	7.3	8.4	7.4
March	583.6	592.8	589.0	618.0	667.8	5.9	6.1	7.3	7.6	7.4
April	585.3	593.4	592.8	618.8	668.0	5.5	5.7	6.6	7.3	6.8
May	586.6	596.8	594.5	618.4	672.0	6.1	6.4	7.8	7.8	7.4
June	595.2	605.6	600.0	626.2	680.9	6.2	6.6	7.7	8.0	8.1
July	598.8	609.9	605.8	631.5	687.1	6.4	6.6	8.0	7.9	7.5
August	596.9	606.0	604.1	631.7	682.2	6.1	6.5	7.7	7.3	7.6
September	586.8	600.1	596.6	622.7	676.7	6.9	6.7	7.9	7.6	7.7
October	592.4	601.1	597.2	623.6	677.0	6.5	6.7	7.7	7.8	7.6
November	594.7	602.1	598.2	627.3	679.1	6.5	6.6	7.7	7.4	7.2
December	597.0	602.9	599.6	628.5	678.3	5.3	5.8	7.2	6.5	6.6

Source: Pennsylvania Department of Labor and Industry, Bureau of Research & Statistics.

**Table IV-17**  
**Philadelphia City**  
**Non-Farm Payroll Employment\***

(Amounts In Thousands)

	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>
Total Employment	673.5	667.5	675.3	685.2	695.9	687.8	686.8	679.0
Manufacturing	60.2	58.7	57.8	57.3	55.8	52.5	49.9	33.9
Non-Manufacturing	613.3	608.8	617.5	627.9	640.1	635.3	636.9	645.1
Construction & Mining	10.2	10.1	10.8	10.3	13.8	12.3	11.9	12.5
Transportation & Public Utilities	32.6	33.1	34.1	35.8	36.3	35.8	33.8	45.4
Wholesale & Retail Trade	113.9	117.2	112.5	112.3	118.4	118.1	120.2	122.3
Finance, Insurance & Real Estate	53.9	55.2	52.3	51.3	51.1	50.3	50.6	51.2
Services	278.0	279.5	291.8	293.1	298.8	300.3	302.8	299.2
Government	127.2	125.9	115.1	113.2	119.6	118.6	117.6	114.5

Source: Pennsylvania Department of Labor and Industry, Bureau of Research and Statistics.

\* Includes persons employed within the City, without regard to residency.

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**Table IV-18**  
**City of Philadelphia**  
**Largest Non-Governmental Employers In Philadelphia**  
**June 30, 2004**  
**(Listed Alphabetically)**

Albert Einstein Medical  
Aramark Food & Support Services Group  
Cardone Industries, Inc.  
Children's Hospital of Philadelphia  
Comcast Corporation  
Drexel University  
Frankford Hospital  
Independence Blue Cross  
Pennsylvania Hospital of the Univ. of Penn. Health  
Philadelphia Health & Ed.(MCP Hahnemann)  
Philadelphia Newspapers, Inc.  
Southeastern Pennsylvania Transportation Authority  
Smith Kline Beecham Corporation  
Sunoco, Inc.  
Temple University  
Temple University Hospital, Inc.  
Tenet Health System Philadelphia, Inc.  
Thomas Jefferson University  
Thomas Jefferson University Hospitals  
Towers, Perrin, Forster & Crosby, Inc.  
University of Pennsylvania Hospital  
University of Pennsylvania  
Verizon Services Corporation  
Wachovia Bank

Source: Philadelphia Department of Revenue

**Table IV-19**  
**Fortune 500**  
**Largest Corporations**  
**With Headquarters In Philadelphia, 2004**

<b>Corporation</b>	<b>Type of Industry</b>	<b>Ranking</b>	<b>Revenues (\$ Millions)</b>
Comcast	Telecommunications	89	\$21,263
Cigna	Health Care/Insurance	101	\$18,808
Sunoco	Petroleum Refining	123	\$17,866
ARAMARK	Diversified Outsourcing Services	202	\$ 9,712
Crown Holdings	Metal Products	282	\$ 6,630
Rohm & Haas	Chemical	290	\$ 6,421
Lincoln National	Insurance: Life & Health	339	\$ 5,283

Source: Fortune Magazine.



**Table IV-20**  
**Total Industry Employment By Establishment**  
**Annual Averages**  
**(000s)**

**Philadelphia PMSA**

	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>
Non-Agricultural Employment	2,214.4	2,257.5	2,315.6	2,322.1	2,394.2	2,426.9	2,413.1	2,450.8
Goods Producing	384.9	393.0	396.2	387.0	398.6	390.3	380.3	332.1
Construction & Mining	79.1	87.8	90.4	86.3	99.1	108.0	107.2	101.9
Manufacturing	305.8	305.2	305.8	300.7	299.5	282.3	273.1	230.2
Durable Goods	146.6	146.0	147.4	143.7	142.8	133.3	125.6	115.8
Nondurable Goods	159.3	159.2	158.4	157.0	156.7	149.0	147.5	114.4
Service Producing	1,829.5	1,864.5	1,919.4	1,935.1	1,995.6	2,036.6	2,032.8	2,118.7
Transp. & Public Utilities	104.6	106.9	109.9	113.4	114.3	113.5	112.0	489.1
Wholesale & Retail Trade	493.3	498.3	506.8	503.2	526.3	539.3	534.2	118.1
Fin., Insurance & Real Estate	154.4	157.3	161.6	162.7	169.2	170.3	168.1	177.1
Services	774.8	806.6	848.5	859.0	886.0	900.6	904.3	1075.6
Government	302.3	295.4	292.6	296.8	299.8	312.9	314.2	315.4
Federal Government	65.0	58.1	55.9	57.7	57.8	57.2	57.5	58.0
State & Local Government	237.4	237.3	236.7	239.1	242.1	255.7	256.7	257.4

Source: Pennsylvania Department of Labor and Industry, Bureau of Labor Research and Statistics.

**Income**

The following table presents data relating to per-capita income for the City, the PMSA, and the United States. It illustrates that, for the past few years, real per-capita income has generally outpaced the urban cost of living index, suggesting that on average, the newly created service jobs have generated positive real income growth for City wage earners.

**Table IV-21**  
**Consumer Price Indices and Median Household Effective Buying Income**

	<u>1990</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>
CPI-U United States(a)	130.7	160.5	163.0	166.6	172.2	177.1	180.9	184.6
CPI-U Philadelphia PMSA(a)	135.8	166.5	168.2	171.9	176.5	181.3	183.0	188.8
Buying Income(b)								
Philadelphia	\$24,880	\$29,561	\$30,127	\$31,621	\$33,297	\$29,995	\$28,015	\$28,150
Philadelphia Metro Area*	\$33,277	\$42,852	\$44,425	\$47,152	\$49,717	\$43,800	\$41,820	\$42,852
United States	\$27,912	\$34,618	\$35,377	\$37,233	N/A	N/A	N/A	\$38,201

\*Statistic is a measure of the Philadelphia, Camden & Wilmington Metropolitan Area. PMSA statistic was not available.

Source:

(a) Consumer Price Index - All Urban Consumers. U.S. Bureau of Labor Statistics.

(b) "2003 Survey of Buying Power"

**Table IV-22  
Number of Households By Income Range In Philadelphia County**

<b>Income</b>	<b>Number of Households*</b>		<b>Percentage of Households*</b>	
	<b>1990</b>	<b>2000</b>	<b>1990</b>	<b>2000</b>
Under \$ 9,999	136,335	109,237	22.6	18.5
\$10,000-14,999	59,331	49,035	9.9	8.3
\$15,000-24,999	108,405	89,059	18.1	15.0
\$25,000-49,999	190,237	171,215	31.7	29.0
\$50,000 and over	106,432	171,737	17.6	29.1
<b>Total</b>	<b>600,740</b>	<b>590,283</b>	<b>100.0%</b>	<b>100%</b>

Source: U.S. Department of Commerce, Bureau of the Census.

\* A household includes all the persons who occupy a housing unit.

**Number of Households By Income Range In United States**

<b>Income</b>	<b>Number of Households (000's)</b>		<b>Percentage of Households</b>	
	<b>1990</b>	<b>2000</b>	<b>1990</b>	<b>2000</b>
Under \$9,999	14,214	10,067	15.5	9.5
\$10,000-14,999	8,133	6,657	8.8	6.3
\$15,000-24,999	16,124	13,536	17.5	12.8
\$25,000-49,999	31,003	30,965	33.7	29.3
\$50,000 and over	22,519	44,312	24.5	42.1
<b>Total</b>	<b>91,994</b>	<b>105,537</b>	<b>100.0%</b>	<b>100.0%</b>

Source: U.S. Department of Commerce, Economics and Statistics Administration, 1990 Census of Population

## Retail Sales

The following table reflects taxable sales for Philadelphia from fiscal years 1995 to 2004.

**Table IV-23  
Philadelphia  
Taxable Retail Sales 1995-2004  
(\$000's)**

<b>Fiscal Year</b>	<b>Taxable Sales</b>
1995	8,636,921
1996	10,249,166
1997	9,637,833
1998	8,276,083
1999	9,604,970
2000	10,432,800
2001	11,107,100
2002	10,980,914
2003	10,933,524
2004	11,172,231

Source: Figures determined by dividing the Philadelphia local sales tax reported by the Pennsylvania Department of Revenue by the local sales tax rate of 0.01.

The following table compares retail sales activity among the City, the PMSA, Pennsylvania, and the United States.

**Table IV-24**  
**Retail Sales By Store Group (\$000)**  
**2004**

	<u>Philadelphia</u>	<u>CBSA**</u>	<u>Pennsylvania</u>	<u>United States</u>
Total Retail Sales*	11,366,900	79,892,130	155,423,454	3,906,482,160
Food	1,959,887	10,862,213	22,867,092	526,193,765
Eating & Drinking	2,315,171	7,715,123	15,121,084	383,728,199
Gen. Merchandise	670,713	7,570,987	15,693,600	504,355,625
Furniture, Furnishings	479,110	4,114,101	6,323,992	203,238,293
Automotive	1,329,972	18,365,300	35,614,264	906,076,160

Source: Sales and Marketing Management, "2004 Survey of Buying Power"

\*Total Retail Sales reflects net sales (less refunds and allowances for returns) for all establishments primarily engaged in retail trade. Receipts from repairs and other services are also included, but retail sales by wholesalers and service establishments are not.

\*\*Core Based Statistical Area (CBSA) Philadelphia-Camden-Wilmington PA-NJ-DE-MD

### Effective Buying Income and Household Income

Effective buying income ("EBI") is defined as all personal income less personal taxes, non-tax payments (fines, fees and penalties), and contributions to social security. EBI is also commonly referred to as disposable or after-tax income.

**Table IV-25**  
**City And USA Effective Buying Income**  
**2004**

	<u>Total EBI</u> <u>(\$000)</u>	<u>Median</u> <u>Household EBI</u>	<u>% of Household EBI</u>		
			<u>\$20,000-</u> <u>34,999</u>	<u>\$35,000-</u> <u>49,999</u>	<u>\$50,000 and</u> <u>Over</u>
Philadelphia (City)	\$ 20,920,750	\$28,150	24.8	16.6	22.9
Bucks Co.	15,020,125	52,073	17.0	18.4	52.4
Chester Co.	12,869,483	56,649	15.4	16.3	57.2
Delaware Co.	12,030,260	44,189	20.9	18.4	42.8
Montgomery Co.	21,115,723	52,566	17.2	17.7	52.9
Burlington Co., NJ	10,050,470	49,699	17.7	20.6	49.6
Camden Co., NJ	9,697,133	41,067	20.4	20.0	39.1
Gloucester Co., NJ	5,165,255	46,751	18.4	20.8	45.4
Salem Co., NJ	1,131,108	39,366	21.4	20.9	36.6
Pennsylvania	226,703,626	36,361	24.2	19.2	32.7
United States	5,466,880,008	38,201	n/a	n/a	n/a

Source: Sales and Marketing Management, "2004 Survey of Buying Power"

## **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 the airport and to the surrounding counties. A high speed train line runs from southern New Jersey to Center City and is operated by the Delaware River Port Authority. An important addition to the area's transportation system was the opening of the airport high speed line between Center City and the Philadelphia International Airport in 1985. The line places the airport less than 25 minutes from the Center City business district and connects directly with the commuter rail network and the Convention Center, which opened in June 1993. The opening of the commuter rail tunnel in 1984 provided a unified City transportation system linking the commuter rail system, the SEPTA bus, trolley, and subway lines, the high speed line to New Jersey, and the airport high speed line.

Amtrak, SEPTA, Norfolk Southern, CSX Transportation, Conrail and the Canadian Pacific provide inter-city commuter and freight rail services connecting Philadelphia to the other major cities and markets in the United States. More than 100 truck lines serve the Philadelphia area.

The City now has one of the most accessible downtown areas in the nation with respect to highway transportation by virtue of I-95; the Vine Street Expressway (I-676), running east-to-west through the Central Business District between I-76 and I-95; and the "Blue Route" (I-476) in suburban Delaware and Montgomery Counties which connects the Pennsylvania Turnpike and I-95 and thereby feeds into the Schuylkill Expressway (I-76) and thus into Center City Philadelphia.

The City owns Philadelphia International Airport ("PHL"), located seven miles southwest of Center City and a smaller reliever airport in Northeast Philadelphia. PHL is accessible by major highways within the City and from surrounding communities and SEPTA's high speed train line. PHL provides its passengers with service on twelve domestic carriers and eight regional carriers, while six foreign flag carriers and two U.S. carriers provide international service. In addition, there are six all-cargo carriers. PHL serves as a key connecting hub for USAirways. PHL opened a new commuter terminal in 2001 and a new international terminal in May 2003. In 2004, PHL ranked 17th in the nation in terms of total passengers, according to data reported by Airports Council International.

The Port of Philadelphia is one of the busiest ports in the United States, holding a leadership position in the handling of many labor-intensive cargoes. It is the leading handler among all U.S. ports of Chilean fruit entering the country and a leader in the handling of high-quality paper and other forest products. Containerized cargo is handled at the Port's two modern container-handling facilities, Packer Avenue Marine Terminal and Tioga Marine Terminal. The Port's publicly owned facilities are now benefiting from a \$56 million Commonwealth capital program for facility modernization and expansion. The Port also services a growing number of cruise-ship calls. Foreign trade zones are located in the port district.

## **Water and Wastewater Systems**

The water and wastewater systems of Philadelphia are owned by the City and operated by the City's Water Department. The water system provides water to the City (130 square mile service area), to Aqua Pennsylvania formerly Philadelphia Suburban Corporation, and to the Bucks County Water and Sewer Authority. The City obtains approximately 55 percent of its water from the Delaware River and the balance from the Schuylkill River. The water system serves approximately 471,000 properties through 3,300 miles of mains and provides fire protection through more than 27,800 fire hydrants.

The wastewater system services a total of 360 square miles of which 130 square miles are within the City and 230 square miles are in suburban areas. The total number of accounts is approximately 472,000. The wastewater system contains three water pollution control plants, a biosolids processing facility, 16 pumping stations, and approximately 2,960 miles of sewers. By order of the Delaware River Basin Commission, the City is required to achieve effluent limitations that are considered more stringent than those required to achieve secondary treatment levels as defined in the Federal Water Pollution Control Act, as amended, Municipal Solid Waste Disposal.

The City is responsible for collecting solid waste from sources other than industrial or commercial institutions. Approximately 3,000 tons of solid waste per day is collected by the City. Municipal solid waste is disposed of through a combination of private and City transfer stations with the City limits, and at various landfills operated outside of the City limits. The City significantly reduced its waste disposal costs over the past eight years after entering into new contracts effective in July 1994 and again in July 1998 with private contractors for landfill space. The current disposal contracts were extended through June 2005, which was the last of three City option years. The City anticipates entering into new contracts for the period beginning July 1, 2005.

## Housing

While the City's housing market has remained relatively stable, recently home values have gone up, as shown on the table below:

**Table IV-26  
Characteristics of Housing Units**

	<b>1990</b>	<b>2000</b>
<b>Total Housing Units</b>		
City of Philadelphia	674,899	661,959
Philadelphia PMSA	1,491,310	1,565,641
Pennsylvania	4,938,140	5,249,750
<b>Percent Owner Occupied</b>		
City of Philadelphia	62.0%	59.3%
Philadelphia PMSA	68.5%	68.4%
<b>Median Value of Owner Occupied Housing</b>		
City of Philadelphia	\$48,400	59,700
Philadelphia PMSA	96,700	121,300
Pennsylvania	67,900	97,000
<b>Number of Persons per Housing Unit</b>		
City of Philadelphia	2.63	2.65

Source: U.S. Department of Commerce, Bureau of the Census.

## Economic Development

The last decade found the City riding one of the biggest development waves since the development of the Center City office towers in the mid-1980's. The City's economic development policies are being strategically driven under the auspices of an initiative called the Economic Stimulus Program, which began in 1994 as a \$2.2 billion project, and was extended in 1997 for three years and continued in 2000 by the administration of Mayor John Street.

The gains of the Program are evident in a series of economic development accomplishments that include: a hotel construction boom that has given the City more than 4,000 new hotel rooms, all within walking distance of the \$500 million Pennsylvania Convention Center; the Avenue of the Arts complex capped off by the \$255 million Regional Performing Arts Center; the creation of economic development zones to enhance existing economic development efforts already underway; and the ongoing conversion of closed military installations to commercial use including the transformation of the former Philadelphia Naval Base into a world class commercial and industrial park with the most modern shipbuilding operation in North America.

## Philadelphia International Airport

Philadelphia International Airport is ranked 17th among the nation's airports in terms of passenger traffic, serving 24.7 million passengers in calendar year 2003. In June 1998, a \$140 million renovation of terminals B and C was completed. A year later, construction began on a \$443 million development project to construct new international and regional terminals, funded by a 1998 Airport Revenue Bond issue. An additional \$188 million in

bond financing was provided for the project in July 2001. Construction of the regional terminal was completed in June 2001 and the new international terminal was completed in May 2003. The Parking Authority completed construction of two new Airport parking garages in the spring of 2003, which provided a total of 5,000 additional parking spaces. These Airport improvements are expected to have an economic impact of more than \$2 billion over the first twenty (20) years of operation.

## **Hospitality and Tourism**

One of the most encouraging trends for the City's economy has been the continuing growth in the hospitality and tourism industry. As one of the cornerstones of the City's economic development efforts in the 1990s, the hospitality and tourism sector continues to represent a significant growth opportunity for the City.

### **Pennsylvania Convention Center**

At the center of the hospitality and tourism industry is the Pennsylvania Convention Center. The existence of the Center, one of the largest in the east and the attendant development of hotels within walking distance of it, have positioned the City to attract some of the largest conventions and shows in the country. This includes the annual Flower Show with an estimated \$25 million economic impact as well as the American Library Association (an estimated \$7 million economic impact) and SAP (an estimated \$12 million economic impact). In 2000, the Republican National Convention was held in Philadelphia at the First Union Center, bringing significant revenues to the local economy. In 2003, a major labor agreement was entered into which addressed certain chronic labor problems which may have impacted the Convention Center's ability to remain competitive.

The Convention Center Authority has crafted a \$460 million proposal that would enlarge the center from 440,000 square feet to 685,000 square feet of exhibit space, making it the 8th largest convention facility in the United States. No action has yet been taken with respect to this proposal.

### **Barnes Foundation**

The Barnes Foundation recently won approval from the Montgomery County Orphans Court to move its prized art collection to Center City Philadelphia from the suburban community of Lower Merion, Pennsylvania. Its collection, which includes dozens of masterpieces by Matisse, Cezanne and Renoir, among others, was arranged by Albert Barnes himself in unique ensembles that are to be preserved when the gallery moves downtown. The Barnes Foundation's proposed new facility will be on the Benjamin Franklin Parkway, in a more central location, within several blocks of the Philadelphia Museum of Art, the Renoir Museum, the Moore College of Art and numerous other cultural institutions.

### **New Sports Stadium Complex**

The Eagles' football stadium, Lincoln Financial Field, opened to great fanfare in August 2003, and Citizens Bank Park, the new baseball stadium for the Phillies, hosted its inaugural season home opener in April 2004. This opening capped the completion of a \$1 billion investment by the City, the teams and the state to create a four-facility stadium complex that is unmatched anywhere in the United States. Both the Phillies and the Eagles signed long-term 30-year leases.

### **New Center City Skyscrapers**

Liberty Property Trust has announced that it expects to begin the construction of a \$465 million project that will include two office buildings containing 1.25 million square feet as well as a glass enclosed winter garden and public plaza. The structures will include the tallest building in Philadelphia and will be the first major Center City office tower in more than ten years.

In addition, the Cira Center is being built over the railroad yards adjacent to Amtrak's 30<sup>th</sup> Street Station by Brandywine Realty Trust. The building will contain more than 725,000 square feet of office space and is almost 70% leased.

## **Ikea**

The developer, Goldenberg Group had a groundbreaking ceremony in May 2003 for the new 21 acre Ikea Site, which opened August 2004. It is Ikea's first urban store in the United States and is located at Columbus Boulevard near Snyder Avenue. The building size is 311,000 square feet with an in store restaurant that seats 300. The expected employment is 380 people.

## **Special Economic Development Zones**

Between 1995 and 2000, three special "zones" were created in Philadelphia to promote revitalization and economic development. They are the Federal Empowerment Zone, the target areas of Frankford/Port Richmond known as the Urban Industry Initiative, and the Keystone Opportunity Zone. These zones represent initiatives over and above day-to-day economic development activity. The Keystone Opportunity Zones, Empowerment Zones and Renewal Community Designation provide place-based exemptions within specific areas targeted for economic development.

Keystone Opportunity Zones ("KOZ")/ Keystone Opportunity Expansion Zones ("KOEZ")/ Keystone Opportunity Improvement Zones. In January 1999, the Commonwealth of Pennsylvania designated 12 Keystone Opportunity Zones (KOZs) in neighborhoods throughout Philadelphia. Zones that encompass underutilized and often vacant land were formed to encourage existing businesses to expand and new businesses to relocate in the targeted locations within struggling neighborhoods. Businesses that locate within a KOZ are exempt from such taxes as the Business Privilege Tax, use and occupancy tax, real estate tax, state business taxes and state sales tax on items consumed at the site, through December of 2010. In 2001, the Commonwealth approved designation of eight new zones as part of a second round of KOZs, newly entitled Keystone Opportunity Expansion Zones (KOEZs). Tax exemptions for businesses that locate in KOEZs are effective through September 30, 2013.

On December 31, 2002, in an effort to refine the existing programs, the Governor signed an Executive Order that designated several key sites in Philadelphia as Keystone Opportunity Improvement Zones (KOIZs). This Executive Order was signed pursuant to the KOZ Bill, signed December 9, 2002, in which new subzones could be added or existing subzones could be enhanced or enlarged to incorporate new property into existing KOZ and KOEZs. Since January 1999, the City has participated in deals with 109 new and existing companies, leveraged over \$226 million in private investment, and fostered the creation of 2,472 jobs and the retention of 1,915 jobs. Over 2 million square feet has been constructed and over 1.2 million square feet has been rehabilitated.

Renewal Community Designation. This federal program offers employment and operating tax incentives to businesses locating within economically distressed areas through 2009, under the Community Renewal Tax Relief Act of 2000. In 2003, the City allocated \$12 million in Commercial Revitalization Deductions, a tax benefit accelerating depreciation for businesses located in the Renewal Community. All six qualified applicants received allocations this year, which leveraged approximately \$109 million in private investment and helped to create and retain 1,950 full-and part-time jobs. Additional Renewal Community benefits will include employment credits, increased tax deductions for environmental clean-up and capital investments, and no tax on capital gains for assets for over five years.

## **Philadelphia Industrial Development Corporation**

The City's efforts to retain and attract industry are directed by the Philadelphia Industrial Development Corporation ("PIDC"). Established in 1958, PIDC is a non-profit venture of the City of Philadelphia and the Greater Philadelphia Chamber of Commerce. The many programs provided by PIDC include (i) direct mortgage funding in a subordinate position at reduced interest rates for fixed asset improvement to companies who intend to build or expand in Philadelphia; (ii) tax-exempt bond funding to eligible borrowers such as non-profit institutions through PIDC's affiliate, PAID; (iii) offering of fully improved parcels of land for sale in more than a dozen designated

industrial parks and districts across the City; and (iv) offering of development assistance and project management to a range of Philadelphia's development and non-profit corporations.

## **Urban Industry Initiative**

Urban Industry Initiative ("UII"), a grant-funded program, was established in Fiscal Year 1997 to retain neighborhood-based manufacturing jobs in Frankford, Port Richmond, Bridesburg, Juniata Park, and Horrowgate. Led by PIDC and supported by the Commerce Department, UII has helped strengthen individual companies and their business relationships by organizing purchasing forums, connecting small businesses to large corporations, and strengthening the relationship between resident and neighborhood-based companies. In its seventh year, UII has expanded its target area within the lower Northeast and the Hunting Park industrial area. Over the life of the initiative, UII has made 36 loans worth over \$1.8 million and assisted with 43 deals that have helped to create 230 new jobs, totaling over \$11.5 million in the public and private neighborhood investments. In an effort to promote the employment opportunities in manufacturing, UII works with manufacturers and the school district to provide plant tours and internships. This year UII and the Commerce Department are launching a "Philadelphia Made" campaign to build awareness of the quality and value offered by Philadelphia companies and entrepreneurs. The UII also works with businesses to improve their physical environment. The PRIDE (Port Richmond Industrial Development Enterprise) district is the first industrial special services district in the state and will complete over \$1 million of construction improvements to upgrade its neighborhood in 2004.

## **The Office of Defense Conversion Activities**

PIDC serves as the City's point of contact for issues related to the acquisition and redevelopment of former military facilities. The City, as the only city in the country adversely affected by all four rounds of base closures, finds itself at the forefront of cities in converting former military installations to commercial and related uses. The largest of the City's closed facilities, the Philadelphia Navy Yard, has been converted into the Philadelphia Naval Business Center ("PNBC"). PAID acquired these assets from the Navy in March 2000. The PNBC totals in excess of 1,000 acres and includes four discrete development zones capable of supporting all forms of industrial and commercial development. These zones include the Shipyard, the Girard Point Industrial Park, the Commerce Center and the Intermodal Yard.

With the acquisition of the PNBC in 2000, after nearly a decade of closure actions, lawsuits and negotiations, PAID has established a strong industrial presence at the site. There are more than 4 million square feet of occupied facilities on the site that are home to more than 6,000 employees. More than fifty private companies and four US Navy civilian operations are the source of this employment.

The largest and most significant industrial project at the PNBC has been the development of a state-of-the-art commercial shipbuilding facility. In partnership with local, state and federal government, Kvaerner ASA has constructed the world's most modern and technologically advanced shipyard. With construction of the \$488 million facilities completed, Kvaerner Philadelphia Inc. now employs in excess of 900 workers on the site. The first two container ships have been sold to Matson Navigation, and construction of a third ship has started. The first vessel, the MV Manukai, was delivered to Matson in July 2003.

In December 2002, PAID entered into a development agreement with Liberty Property Trust to market, develop and lease a 60-acre portion of the PNBC as a first-class office campus. This campus will include 1.4 million square feet of Class A suburban style corporate office space.

In addition, in February 2003, PIDC and Liberty announced that development of a 75,000 square foot biotechnology building for AppTec Laboratory Services, a Minnesota based biotechnology service firm. The new facility opened in the spring of 2004 and will be home to more than 200 employees, 70% of whom have Ph.D. degrees.

PIDC has also made significant gains in the acquisition and redevelopment of other closed military sites. PAID acquired the 25 acre Capehart Housing Property from the Navy in March 2000 and subsequently sold the site



to a private housing developer for the construction of 230 new, single family homes. These homes are now under construction and the first phase of homes have sold for an average price of \$350,000.

In April 2000, PAID acquired the 50-acre former Philadelphia Naval Hospital. PAID entered into a lease with the Philadelphia Eagles football franchise for the eastern half of that site, where the Eagles have developed a new practice facility, team offices and an out patient physical rehabilitation center. On the balance of the site, PIDC constructed an interim parking lot to support the adjacent construction of two new sports stadiums. Upon completion of the stadiums, this portion of the site will be made available for private development.

The final major military closure site in the City was the former Defense Supply Center Philadelphia (DSCP), located at 20th Street and Oregon Avenue. PAID completed the acquisition of this 85-acre site from the Army in October 2001. Given the existence of a major underground plume of oil that is being remediated, the acquisition was structured to allow PAID to take the property's air rights initially, with the ground rights to follow upon completion of the remediation project. In addition, PAID has entered into the following agreements with private entities: (1) sold approximately 1 million square feet of buildings to Brite Star Manufacturing, where more than 300 people are employed in the manufacturing, warehousing, and distribution of holiday decorations; (2) sold an additional 750,000 square feet of buildings to a private real estate developer to be renovated and marketed for commercial and warehousing space; (3) sold a 3.5-acre parking lot for a new 55,000 square foot Acme supermarket that opened in September 2003; and (4) sold a 44-acre parcel to Forest City Ratner Company, a national developer of retail centers that will result in the development of a 550,000 square foot, \$100 million retail center that will employ in excess of 1,000 people. The retail development began construction in October 2003.

## Hospitals and Medical Centers

*Hospitals and Medical Centers.* The following table presents the most recent published data regarding hospitals and medical centers in Philadelphia. Due to mergers and consolidations that have occurred or may occur in the future, this table is accurate only as of its publication date.

**Table IV-27**  
**City of Philadelphia**  
**Hospitals and Medical Centers (as of 2004)**

<b>Institution</b>	<b>Beds</b>
Albert Einstein Medical Center	561
Belmont Center for Treatment	145
Children's Hospital of Philadelphia	344
Children's Seashore House	30
Eastern PA Psychiatric Institute	109
Episcopal Hospital	21
Fairmount Behavioral Health System	146
Fox Chase Cancer Center	100
Frankford Hospital	405
Friends Hospital	192
Graduate Hospital, main campus	241
Hahnemann Hospital	437
Jeanes Hospital	161
John F. Kennedy Memorial	141
Kensington Hospital	45
Magee Rehabilitation Hospital	96
Medical College of Pennsylvania Hospital <sup>(1)</sup>	162
Nazareth Hospital	200
Temple East, Northeastern	170
North Philadelphia Health System	315
Northeast Hospital	166
Pennsylvania Hospital	380

<b>Institution</b>	<b>Beds</b>
Presbyterian Medical Center of the University of Pennsylvania Health System <sup>(2)</sup>	238
Roxborough Memorial Hospital	115
Saint Agnes Medical Center	151
Shriners Hospital for Crippled Children	59
St. Christopher's Hospital	120
St. Joseph's Hospital	146
Temple University Hospital	534
Thomas Jefferson University Hospital	812
University of Pennsylvania Medical Center	590
Veterans Affairs Medical Center	136
Wills Eye Hospital	40

Source: Delaware Valley Healthcare Council, Hospitals & Healthsystems Association of Philadelphia

(1) Formerly Known as Medical College Hospitals, main campus

(2) Formerly Known as Presbyterian Medical Center of Philadelphia

*Children's Hospital Expansion.* Children's Hospital of Philadelphia announced a five-year \$650 million expansion program that began construction in February 2001 and will add more than one million square feet of treatment and research space at the Hospital's campus in West Philadelphia.

*University of Pennsylvania/Civic Center.* The University of Pennsylvania and Children's Hospital of Philadelphia are constructing a cancer research and treatment center on the former Civic Center site in West Philadelphia.

### **Additional Projects Under Construction**

The following table lists additional projects currently under construction in the City.

**Table IV-28**  
**Projects Under Construction**

<b>Project</b>	<b>Estimated Cost</b>
University of Pennsylvania/Civic Center	\$450,000,000
City Hall Tower Restoration	200,000,000
Networks (High Tech Center)	85,000,000

Source: City of Philadelphia, Five-Year Financial Plan Fiscal Year 2003-Fiscal Year 2008.

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**APPENDIX V**

**FORM OF OPINION OF CO-BOND COUNSEL**

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## APPENDIX V

**Upon delivery of the 2005B Bonds, Saul Ewing LLP and Booth & Tucker, LLP, both of Philadelphia, Pennsylvania, Co-Bond Counsel, will issue an opinion in substantially the following form:**

\_\_\_\_\_, 2005

Re: \$86,105,000 City of Philadelphia, Pennsylvania  
Water and Wastewater Revenue Refunding Bonds,  
Variable Rate Series 2005B

To the Purchasers of the Within-Described Bonds:

We have acted as Co-Bond Counsel, together with Booth & Tucker, LLP, in connection with the authorization, issuance and sale by the City of Philadelphia, Pennsylvania (the "City") of the City's Water and Wastewater Revenue Refunding Bonds, Series 2005B (the "2005B Bonds"), issued under and pursuant to The First Class City Revenue Bond Act of the Commonwealth of Pennsylvania, approved October 18, 1972, Act No. 234, P.L. 955, as amended (the "Act"), the City's Restated General Water and Wastewater Revenue Bond Ordinance of 1989, approved June 24, 1993 (Bill No. 544), as amended (the "General Ordinance"), as supplemented by the Ninth Supplemental Ordinance authorizing the issuance of the 2005B Bonds, approved November 22, 2002 (Bill No. 020670) (the "Ninth Supplemental Ordinance") and the Bond Committee Determination, dated May 4, 2005 (the "Bond Committee Determination").

The 2005B Bonds are being issued for the purpose of providing funds which, together with other available funds of the Water Department, will be applied to refund the City's Water and Wastewater Revenue Bonds, Series 1995 and pay costs of issuance relating to the 2005B Bonds.

Pursuant to the City's General Water and Sewer Revenue Bond Ordinance of 1974, approved May 16, 1974 (Bill No. 1263), as amended and supplemented (the "Prior Ordinance"), the City has previously issued its Water and Sewer Revenue Bonds, Fourteenth Series (the "Water and Sewer Revenue Bonds"). In addition to the Water and Sewer Revenue Bonds authorized and issued pursuant to the Prior Ordinance, the City has previously issued its Series 1993 Bonds, the Series 1995 Bonds, the Series 1997A Bonds, the Series 1997B Bonds, the Series 1998 Bonds, the Series 1999 Bonds, the 1999A Pennvest Loan, the Series 2001A Bonds, the Series 2001B Bonds and the Variable Rate Series 2003 Bonds) pursuant to the General Ordinance. Upon the issuance of the Water and Wastewater Revenue Bonds, Series 1993 Bonds, the General Ordinance superseded the Prior Ordinance and the outstanding Water and Sewer Revenue Bonds became subject to the General Ordinance and are no longer subject to the Prior Ordinance. On the date hereof, the City is also issuing its Water and Wastewater Revenue

Bonds, Series 2005A Bonds (the "2005A Bonds"). The Water and Sewer Revenue Bonds, the Series 1993 Bonds, the Series 1995 Bonds, the Series 1997A Bonds, the Series 1997B Bonds, the Series 1998 Bonds, the Series 1999 Bonds, the 1999A Pennvest Loan, the Series 2001A Bonds, Series 2001B Bonds, the Variable Rate Series 2003 Bonds and the Series 2005A Bonds are herein referred to collectively as the "Outstanding Bonds."

The Outstanding Bonds, the 2005B Bonds and all other Water and Wastewater Revenue Bonds hereafter issued by the City under the General Ordinance are equally and ratably secured to the extent provided in the General Ordinance and the Act by the pledge of, and the security interest created in, all Project Revenues (as defined in the General Ordinance) derived from the water and wastewater systems of the City and all amounts on deposit in or standing to the credit of the funds and accounts (other than the Rebate Fund) established pursuant to the General Ordinance.

As Co-Bond Counsel for the City, we have examined the Act and such Constitutional provisions, statutes and regulations of the Commonwealth of Pennsylvania and such other records and documents of the City as we deemed necessary for the purposes of this opinion. We have also examined the proceedings authorizing the issuance and sale of the 2005B Bonds, including the General Ordinance and the Ninth Supplemental Ordinance; the transcript of proceedings filed by the City with the Court of Common Pleas of Philadelphia, together with evidence of the filing thereof; and certain statements, certifications, opinions, agreements, reports, affidavits, receipts and other documents which we have considered relevant; including, without limitation, an opinion of the City Solicitor of the City; and a certification of officials of the City having responsibility for issuing the 2005B Bonds given pursuant to Section 103 of the Internal Revenue Code of 1986, as amended (the "Code"), and regulations promulgated thereunder. We have also examined a fully executed and authenticated 2005B Bond and have assumed that all other 2005B Bonds have been similarly executed and authenticated.

In rendering the opinion set forth below, we have relied upon the genuineness, accuracy and completeness of all documents, records, certifications and other instruments we have examined, including, without limitation, the authenticity of all signatures appearing thereon.

Based upon the foregoing, it is our opinion that:

1. The City has the power under the Constitution and the laws of the Commonwealth of Pennsylvania to perform its obligations under the General Ordinance, the Ninth Supplemental Ordinance, the Bond Committee Determination and the 2005B Bonds.

2. Under the Constitution and the laws of the Commonwealth of Pennsylvania, including the Act, the General Ordinance, the Ninth Supplemental Ordinance, and the Bond Committee Determination, the City is authorized to issue the 2005B Bonds, and the terms of the 2005B Bonds comply with the requirements of the Act, the General Ordinance, the Ninth Supplemental Ordinance and the Bond Committee Determination.

3. The purposes in respect of which the 2005B Bonds have been issued are lawful purposes under the Act and the General Ordinance.

4. The General Ordinance, the Ninth Supplemental Ordinance and the Bond Committee Determination have been duly enacted and constitute legal, valid and binding obligations of the City with respect to the 2005B Bonds and are enforceable in accordance with their respective terms, except as enforcement may be limited by bankruptcy, insolvency or other laws or equitable principles affecting the enforcement of creditors' rights.

5. The 2005B Bonds have been duly authorized, executed, authenticated, issued and delivered and are the legal, valid and binding obligations of the City, enforceable in accordance with their respective terms, except as enforcement may be limited as set forth in paragraph 4 hereof.

6. Under the Act and the General Ordinance, the 2005B Bonds constitute special obligations of the City payable solely from Project Revenues (as defined in the General Ordinance) and all amounts on deposit in or standing to the credit of the funds and accounts (other than the Rebate Fund) established pursuant to the General Ordinance, together with interest earnings, if any, on amounts in such funds and accounts (other than the Rebate Fund). The 2005B Bonds do not pledge the credit or taxing power or create any debt or charge against the tax or general revenues of the City or create any lien against property of the City other than all amounts on deposit in or standing to the credit of the funds and accounts (other than the Rebate Fund) established pursuant to the General Ordinance, together with interest earnings on amounts in such funds and accounts (other than the Rebate Fund).

7. Interest on the 2005B Bonds is not includable in gross income for purposes of federal income taxation under existing statutes, regulations, rulings and court decisions. The opinion in the preceding sentence is subject to the condition that the City comply with all applicable federal income tax law requirements that must be satisfied subsequent to the issuance of the 2005B Bonds in order that interest thereon continues to be excluded from gross income. Failure to comply with certain of such requirements could cause the interest on the 2005B Bonds to be so includable retroactive to the date of issuance of the 2005B Bonds. The City has covenanted to comply with all such requirements. Interest on the 2005B Bonds is not treated as an item of tax preference under Section 57 of the Code for purposes of the individual and corporate alternative minimum tax.

We express no opinion regarding other federal tax consequences relating to the 2005B Bonds or the receipt of interest thereon.

8. Under the laws of the Commonwealth of Pennsylvania, as enacted and construed on the date hereof, the 2005B Bonds, and the interest thereon are free from taxation for state and local purposes within the Commonwealth of Pennsylvania, but such exemption does not extend to gift, estate, succession or inheritance taxes or any other taxes not levied or assessed directly on the 2005B Bonds or the interest thereon.

We express no opinion with respect to the accuracy or completeness of the preliminary or final official statement or other documents prepared in connection with the offering and sale of the 2005B Bonds or as to any other matter not set forth herein.

Very truly yours,

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**APPENDIX VI**

**SPECIMEN BOND INSURANCE POLICY**

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**FINANCIAL  
SECURITY  
ASSURANCE®**

## **MUNICIPAL BOND INSURANCE POLICY**

ISSUER:

Policy No.: -N

BONDS:

Effective Date:

Premium:

FINANCIAL SECURITY ASSURANCE INC. ("Financial Security"), for consideration received, hereby UNCONDITIONALLY AND IRREVOCABLY agrees to pay to the trustee (the "Trustee") or paying agent (the "Paying Agent") (as set forth in the documentation providing for the issuance of and securing the Bonds) for the Bonds, for the benefit of the Owners or, at the election of Financial Security, directly to each Owner, subject only to the terms of this Policy (which includes each endorsement hereto), that portion of the principal of and interest on the Bonds that shall become Due for Payment but shall be unpaid by reason of Nonpayment by the Issuer.

On the later of the day on which such principal and interest becomes Due for Payment or the Business Day next following the Business Day on which Financial Security shall have received Notice of Nonpayment, Financial Security will disburse to or for the benefit of each Owner of a Bond the face amount of principal of and interest on the Bond that is then Due for Payment but is then unpaid by reason of Nonpayment by the Issuer, but only upon receipt by Financial Security, in a form reasonably satisfactory to it, of (a) evidence of the Owner's right to receive payment of the principal or interest then Due for Payment and (b) evidence, including any appropriate instruments of assignment, that all of the Owner's rights with respect to payment of such principal or interest that is Due for Payment shall thereupon vest in Financial Security. A Notice of Nonpayment will be deemed received on a given Business Day if it is received prior to 1:00 p.m. (New York time) on such Business Day; otherwise it will be deemed received on the next Business Day. If any Notice of Nonpayment received by Financial Security is incomplete, it shall be deemed not to have been received by Financial Security for purposes of the preceding sentence and Financial Security shall promptly so advise the Trustee, Paying Agent or Owner, as appropriate, who may submit an amended Notice of Nonpayment. Upon disbursement in respect of a Bond, Financial Security shall become the owner of the Bond, any appurtenant coupon to the Bond or right to receipt of payment of principal of or interest on the Bond and shall be fully subrogated to the rights of the Owner, including the Owner's right to receive payments under the Bond, to the extent of any payment by Financial Security hereunder. Payment by Financial Security to the Trustee or Paying Agent for the benefit of the Owners shall, to the extent thereof, discharge the obligation of Financial Security under this Policy.

Except to the extent expressly modified by an endorsement hereto, the following terms shall have the meanings specified for all purposes of this Policy. "Business Day" means any day other than (a) a Saturday or Sunday or (b) a day on which banking institutions in the State of New York or the Insurer's Fiscal Agent are authorized or required by law or executive order to remain closed. "Due for Payment" means (a) when referring to the principal of a Bond, payable on the stated maturity date thereof or the date on which the same shall have been duly called for mandatory sinking fund redemption and does not refer to any earlier date on which payment is due by reason of call for redemption (other than by mandatory sinking fund redemption), acceleration or other advancement of maturity unless Financial Security shall elect, in its sole discretion, to pay such principal due upon such acceleration together with any accrued interest to the date of acceleration and (b) when referring to interest on a Bond, payable on the stated date for payment of interest. "Nonpayment" means, in respect of a Bond, the failure of the Issuer to have provided sufficient funds to the Trustee or, if there is no Trustee, to the Paying Agent for payment in full of all principal and interest that is Due for Payment on such Bond. "Nonpayment" shall also include, in respect of a Bond, any payment of principal or interest that is Due for Payment made to an Owner by or on behalf of the Issuer which has been recovered from such Owner pursuant to the

United States Bankruptcy Code by a trustee in bankruptcy in accordance with a final, nonappealable order of a court having competent jurisdiction. "Notice" means telephonic or telecopied notice, subsequently confirmed in a signed writing, or written notice by registered or certified mail, from an Owner, the Trustee or the Paying Agent to Financial Security which notice shall specify (a) the person or entity making the claim, (b) the Policy Number, (c) the claimed amount and (d) the date such claimed amount became Due for Payment. "Owner" means, in respect of a Bond, the person or entity who, at the time of Nonpayment, is entitled under the terms of such Bond to payment thereof, except that "Owner" shall not include the Issuer or any person or entity whose direct or indirect obligation constitutes the underlying security for the Bonds.

Financial Security may appoint a fiscal agent (the "Insurer's Fiscal Agent") for purposes of this Policy by giving written notice to the Trustee and the Paying Agent specifying the name and notice address of the Insurer's Fiscal Agent. From and after the date of receipt of such notice by the Trustee and the Paying Agent, (a) copies of all notices required to be delivered to Financial Security pursuant to this Policy shall be simultaneously delivered to the Insurer's Fiscal Agent and to Financial Security and shall not be deemed received until received by both and (b) all payments required to be made by Financial Security under this Policy may be made directly by Financial Security or by the Insurer's Fiscal Agent on behalf of Financial Security. The Insurer's Fiscal Agent is the agent of Financial Security only and the Insurer's Fiscal Agent shall in no event be liable to any Owner for any act of the Insurer's Fiscal Agent or any failure of Financial Security to deposit or cause to be deposited sufficient funds to make payments due under this Policy.

To the fullest extent permitted by applicable law, Financial Security agrees not to assert, and hereby waives, only for the benefit of each Owner, all rights (whether by counterclaim, setoff or otherwise) and defenses (including, without limitation, the defense of fraud, whether acquired by subrogation, assignment or otherwise, to the extent that such rights and defenses may be available to Financial Security to avoid payment of its obligations under this Policy in accordance with the express provisions of this Policy.

This Policy sets forth in full the undertaking of Financial Security, and shall not be modified, altered or affected by any other agreement or instrument, including any modification or amendment thereto. Except to the extent expressly modified by an endorsement hereto, (a) any premium paid in respect of this Policy is nonrefundable for any reason whatsoever, including payment, or provision being made for payment, of the Bonds prior to maturity and (b) this Policy may not be canceled or revoked. THIS POLICY IS NOT COVERED BY THE PROPERTY CASUALTY INSURANCE SECURITY FUND SPECIFIED IN ARTICLE 76 OF THE NEW YORK INSURANCE LAW.

In witness whereof, FINANCIAL SECURITY ASSURANCE INC. has caused this Policy to be executed on its behalf by its Authorized Officer.

[Countersignature]

FINANCIAL SECURITY ASSURANCE INC.

By \_\_\_\_\_

By \_\_\_\_\_  
Authorized Officer

A subsidiary of Financial Security Assurance Holdings Ltd.  
350 Park Avenue, New York, N.Y. 10022-6022

(212) 826-0100

Form 500NY (5/90)

**APPENDIX VII**

**FORM OF CONTINUING DISCLOSURE AGREEMENT**

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## **CONTINUING DISCLOSURE AGREEMENT**

### **THE CITY OF PHILADELPHIA, PENNSYLVANIA WATER AND WASTEWATER REVENUE REFUNDING BONDS, VARIABLE RATE SERIES 2005B**

This Continuing Disclosure Agreement (this “Disclosure Agreement”) is executed and delivered as of this 4<sup>th</sup> day of May, 2005 by and between The City of Philadelphia, a corporation and body politic existing under the laws of the Commonwealth of Pennsylvania (the “City”) and Digital Assurance Certification, L.L.C., as dissemination agent (the “Dissemination Agent”), in connection with the issuance by the City of \$86,105,000 of its aggregate principal amount of Water and Wastewater Revenue Refunding Bonds, Variable Rate Series 2005B (the “Bonds”).

The Bonds shall be as described in the Official Statement, and shall be issued and secured under the provisions of The First Class City Revenue Bond Act, P.L. 955, Act No. 234 of the General Assembly of the Commonwealth of Pennsylvania approved October 18, 1972 (the “Act”); the Restated General Water and Wastewater Revenue Bond Ordinance of 1989 (the “Restated General Ordinance”) adopted by the City Council and approved by the Mayor on June 24, 1993, as supplemented by the First Supplemental Ordinance, adopted by the City Council and approved by the Mayor on June 24, 1993, the Second Supplemental Ordinance adopted by the City Council and approved by the Mayor on May 9, 1994 (the “Second Supplemental Ordinance”), the Third Supplemental Ordinance adopted by the City Council and approved by the Mayor on October 16, 1997 (the “Third Supplemental Ordinance”), the Fourth Supplemental Ordinance adopted by the City Council and approved by the Mayor on December 11, 1998 (the “Fourth Supplemental Ordinance”), the Fifth Supplemental Ordinance adopted by the City Council and approved by the Mayor on December 11, 1998 (the “Fifth Supplemental Ordinance”), the Sixth Supplemental Ordinance adopted by the City Council and approved by the Mayor on December 11, 1998 (the “Sixth Supplemental Ordinance”), the Seventh Supplemental Ordinance adopted by the City Council and approved by the Mayor on May 10, 2001 (the “Seventh Supplemental Ordinance”), the Eighth Supplemental Ordinance adopted by the City Council and approved by the Mayor on November 22, 2002 (the “Eighth Supplemental Ordinance”), and the Ninth Supplemental Ordinance adopted by the City Council and approved by the Mayor on November 22, 2002 (the “Ninth Supplemental Ordinance”). The Restated General Ordinance, as amended by any amendment thereto contained in the First Supplemental Ordinance, the Second Supplemental Ordinance, the Third Supplemental Ordinance, the Fourth Supplemental Ordinance, the Fifth Supplemental Ordinance, the Sixth Supplemental Ordinance and the Seventh Supplemental Ordinance, the Eighth Supplemental Ordinance and the Ninth Supplemental Ordinance is herein referred to as the “General Ordinance.”

In consideration of the mutual covenants, promises and agreements contained herein and intending to be legally bound hereby, the parties hereto agree as follows:

## **Section 1. Definitions.**

In this Disclosure Agreement and any agreement supplemental hereto (except as otherwise expressly provided or unless the context clearly requires otherwise) terms defined in the recitals hereto shall have such meanings throughout this Disclosure Agreement, and, in addition, the following terms shall have the meanings specified below:

“Annual Financial Information” means the financial information or operating data with respect to the Water Department, delivered at least annually pursuant to Section 3 hereof, substantially similar to the type set forth in Exhibit A attached hereto and in accordance with the Rule. The financial statements comprising the Annual Financial Information are prepared according to accounting methods and procedures which conform to generally accepted accounting principles for governmental units as prescribed by the Governmental Accounting Standards Board.

“Business Day” or “Business Days” means any day other than a Saturday or Sunday or, in the City, a legal holiday or a day on which banking institutions are authorized by law to close or a day on which the Dissemination Agent is closed.

“Disclosure Representative” means the Director of Finance of the City or such other official or employee of the City as the Director of Finance shall designate in writing to the Dissemination Agent.

“Fiscal Agent” means Wachovia Bank, National Association, as fiscal agent under the Fiscal Agent Agreement.

“Material Event” means any of the events listed in Section 4(a) of this Disclosure Agreement, if material within the meaning of the Rule.

“MSRB” means the Municipal Securities Rulemaking Board.

“National Repository” means any nationally recognized municipal securities information repository now or hereafter designated as such by the Securities and Exchange Commission for purposes of the Rule. The National Repositories currently approved by the Securities and Exchange Commission can be found at [www.sec.gov/info/municipal/nrmsir.htm](http://www.sec.gov/info/municipal/nrmsir.htm).

“Official Statement” means the City’s Official Statement dated May 4, 2005 relating to the Bonds.

“Participating Underwriters” means any of the original underwriters of the Bonds required to comply with the Rule in connection with the purchase and reoffering of the Bonds.

“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. For so long as the Bonds shall be registered in the name of the Securities Depository or its nominee, the term “Registered Owners” shall also mean and include, for the purposes of this Disclosure Agreement, beneficial owners and the owners of book-entry credits evidencing a beneficial ownership 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 purpose of receiving notices or giving direction under this Disclosure Agreement.

“Rule” means Rule 15c2-12 promulgated by the Securities and Exchange Commission under the Securities Exchange Act of 1934, as amended, as such rule may be amended from time to time.

“Securities Depository” means The Depository Trust Company, New York, New York, or its nominee, Cede & Co., or any successor thereto appointed pursuant to the General Ordinance.

“State Information Depository” means any public or private repository designated by the Commonwealth of Pennsylvania as a state information depository within the meaning of the Rule. As of the date of this Disclosure Agreement, there is no State Information Depository.

“Water Department” means the Water Department of The City of Philadelphia.

**Section 2. Authorization and Purpose of Agreement.** This Disclosure Agreement is authorized to be executed and delivered by the City pursuant to the Restated General Ordinance and the Eighth Supplemental Ordinance in order to enable the Participating Underwriters to comply with the requirements of the Rule.

**Section 3. Provision and Filing of Annual Financial Information.**

(a) Within 240 days of the close of each fiscal year of the City, commencing with the fiscal year ended June 30, 2005, the Disclosure Representative shall file with the Dissemination Agent Annual Financial Information for such fiscal year. The Dissemination Agent shall file promptly upon receipt thereof the Annual Financial Information with each National Repository and with the State Information Depository, if any, the Annual Financial Information shall be in the form of the City’s Comprehensive Annual Financial Report and, to the extent such information is not included therein, will include the other information set forth on Exhibit A, and will contain unaudited financial statements if audited financial statements are not available.

(b) As soon as audited financial statements for the City are available, commencing with the audited financial statements for the fiscal year ended June 30, 2005, the Disclosure Representative shall file the audited financial statements with the Dissemination Agent. The Dissemination Agent shall file promptly upon receipt thereof the audited financial statements with each National Repository and the State Information Depository, if any.

**Section 4. Material Events.**

(a) The City agrees that it shall provide through the Dissemination Agent, in a timely manner, each National Repository or to the MSRB and to the State Information Depository, if any, notice of the occurrence of any of the following events with respect to the Bonds if material within the meaning of the Rule (each a “Material Event”):

- (1) principal and interest payment delinquencies;
- (2) non-payment related defaults;
- (3) unscheduled draws on debt service reserves reflecting financial difficulties;
- (4) unscheduled draws on credit enhancements, if any, reflecting financial difficulties;
- (5) substitution of credit or liquidity providers, if any, or their failure to perform;
- (6) adverse tax opinions or events affecting the tax-exempt status of the Bonds;
- (7) modifications to the rights of the holders of the Bonds;
- (8) bond calls;
- (9) defeasances;
- (10) release, substitution, or sale of property securing repayment of the Bonds; and
- (11) rating changes.

The foregoing eleven events are quoted from the Rule. No mandatory redemption shall be deemed a material event.

(b) Whenever the City concludes that a Material Event has occurred, the Disclosure Representative shall promptly notify the Dissemination Agent in writing of such occurrence, specifying the Material Event. Such notice shall instruct the Dissemination Agent to file a notice of such occurrence with each National Repository or the MSRB and the State Information Depository, if any. Upon receipt, the Dissemination Agent shall promptly file such notice with each National Repository or the MSRB and the State Information Depository, if any. In addition, the Dissemination Agent shall file with each National Repository or the MSRB and the State Information Depository, if any, notice of any failure by the City or the Dissemination Agent to timely file the Annual Financial Information as provided in Section 3 hereof, including any failure by the City or the Disclosure Representative to provide the Annual Financial Information on or before the date specified in Section 3(a) hereof, no later than noon of the following business day. Any filing with each National Repository, the MSRB and the State Information Depository, if any, shall be accompanied by the form annexed hereto as Exhibit B and made a part hereof.

(c) Notwithstanding the foregoing, the Dissemination Agent shall, promptly after obtaining actual knowledge of an event listed in clauses (a)(1), (3), (4), (5), (8) or (9) of this Section 4, notify the Disclosure Representative of the occurrence of such event and shall, within

three Business Days after giving notice to the Disclosure Representative, file notice of such occurrence with the MSRB and the State Information Depository, if any, unless the Disclosure Representative gives the Dissemination Agent written instructions not to file such notice because the event has not occurred or the event is not material within the meaning of the Rule.

(d) The Dissemination Agent shall prepare an affidavit of mailing for each notice delivered pursuant to clauses (b) and (c) of this Section 4 and shall deliver such affidavit to the City no later than three Business Days following the date of delivery of such notice.

(e) The Dissemination Agent shall request the return from each National Repository, the MSRB and the State Information Depository, if any, of acknowledgement or receipt of any notice delivered to each National Repository, the MSRB and the State Information Depository, if any. Upon the return of all completed acknowledgements of a notice, the Dissemination Agent shall prepare an affidavit of receipt specifying the date and hour of receipt of such notice by each recipient to the extent such information has been provided to the Dissemination Agent. Such affidavit of receipt shall be delivered to the City no later than three Business Days following the date of receipt by the Dissemination Agent of the last completed acknowledgement.

**Section 5. Amendment; Waiver.**

(a) Notwithstanding any other provision of this Disclosure Agreement, the City and the Dissemination Agent may amend this Disclosure Agreement or waive any of the provisions hereof by a writing executed by each of the parties hereto, provided that no such amendment or waiver shall be executed by the parties hereto or be effective unless:

(i) the amendment or waiver is made in connection with a change in circumstances that arises from a change in legal requirements, change in law or change in identity, nature or status of the Water Department, the City or the governmental operations conducted by the City;

(ii) this Disclosure Agreement, as amended by the amendment or waiver, would have been the written undertaking contemplated by the Rule at the time of original issuance of the Bonds, after taking into account any amendments or interpretations of the Rule, as well as any change in circumstances; and

(iii) the amendment or waiver does not materially impair the interests of the Registered Owners of the Bonds.

(b) Evidence of compliance with the conditions set forth in clause (a) of this Section 5 shall be satisfied by the delivery to the Dissemination Agent of an opinion of counsel having recognized experience and skill in the issuance of municipal securities and federal securities law, acceptable to both the City and the Dissemination Agent, to the effect that the amendment or waiver satisfies the conditions set forth in clauses (a)(i), (a)(ii), and (a)(iii) of this Section 5.

(c) Notice of any amendment or waiver containing an explanation of the reasons therefor shall be given by the Disclosure Representative to the Dissemination Agent upon execution of the amendment or waiver and the Dissemination Agent shall promptly file such notice with each National Repository, the MSRB and the State Information Depository, if any.

The Dissemination Agent shall also send notice of the amendment or waiver to each Registered Owner, including owners of book-entry credits who have filed their names and addresses with the Dissemination Agent.

**Section 6. Other Information.**

(a) Nothing in this Disclosure Agreement shall preclude the City from disseminating any other information with respect to the City or the Bonds, using the means of communication provided in this Disclosure Agreement or otherwise, in addition to the Annual Financial Information and the notices of Material Events specifically provided for herein, nor shall the City be relieved of complying with any applicable law relating to the availability and inspection of public records. Any election by the City to furnish any information not specifically provided for herein in any notice given pursuant to this Disclosure Agreement or by the means of communication provided for herein shall not be deemed to be an additional contractual undertaking and the City shall have no obligation to furnish such information in any subsequent notice or by the same means of communication.

(b) Nothing in this Disclosure Agreement shall relieve the Dissemination Agent of any of its duties and obligations under the General Ordinance.

(c) Except as expressly set forth in this Disclosure Agreement, the Dissemination Agent shall have no responsibility for any continuing disclosure to the Registered Owners, the MSRB, any National Repository or any State Information Depository.

**Section 7. Default.**

(a) In the event that the City or the Dissemination Agent fails to comply with any provision of this Disclosure Agreement, the Dissemination Agent or any Registered Owner of the Bonds shall have the right, by mandamus, suit, action or proceeding at law or in equity, to compel the City or the Dissemination Agent to perform each and every term, provision and covenant contained in this Disclosure Agreement. The Dissemination Agent shall be under no obligation to take any action in respect of any default hereunder unless it has received the direction in writing to do so by the Registered Owners of at least 25% of the outstanding principal amount of the Bonds and if, in the Dissemination Agent's opinion, such action may tend to involve expense or liability, unless it is also furnished with indemnity and security for expenses satisfactory to it.

(b) A default under the Disclosure Agreement shall not be or be deemed to be an Event of Default under the Bonds, the General Ordinance or the Act and the sole remedy in the event of a failure by the City or the Dissemination Agent to comply with the provisions hereof shall be the action to compel performance described in Section 7(a) above.

**Section 8. Concerning the Dissemination Agent.**

(a) The Dissemination Agent accepts and agrees to perform the duties imposed on it by this Disclosure Agreement, but only upon the terms and conditions set forth herein. The Dissemination Agent shall have only such duties in its capacity as are specifically set forth in this Disclosure Agreement. The Dissemination Agent may execute any powers hereunder and

perform any duties required of it through attorneys, agents, and other experts, officers, or employees selected by it, and the written advice of such counsel or other experts shall be full and complete authorization and protection in respect of any action taken, suffered or omitted by it hereunder in good faith and in reliance thereon. The Dissemination Agent shall not be answerable for the default or misconduct of any attorney, agent, expert or employee selected by it with reasonable care. The Dissemination Agent shall not be answerable for the exercise of any discretion or power under this Disclosure Agreement or liable to the City or any other person for actions taken hereunder, except only its own willful misconduct or negligence.

(b) The City shall pay the Dissemination Agent reasonable compensation for its services hereunder, and also all its reasonable expenses and disbursements, including reasonable fees and expenses of its counsel or other experts, as shall be agreed upon by the Dissemination Agent and the City. Nothing in this Section 8(b) shall be deemed to constitute a waiver of governmental immunity by the City. The provisions of this Section 8(b) shall survive termination of this Disclosure Agreement.

(c) The Dissemination Agent may act on any resolution, notice, telegram, request, consent, waiver, certificate, statement, affidavit, or other paper or document which it in good faith believes to be genuine and to have been passed or signed by the proper persons or to have been prepared and furnished pursuant to any of the provisions of this Disclosure Agreement; and the Dissemination Agent shall be under no duty to make any investigation as to any statement contained in any such instrument, but may accept the same as conclusive evidence of the accuracy of such statement in the absence of actual notice to the contrary. The Dissemination Agent shall be under no obligation to institute any suit, or to take any action under this Disclosure Agreement, or to enter any appearance or in any way defend in any suit in which it may be made a defendant, or to take any steps in the execution of the duties hereby created or in the enforcement of any rights and powers hereunder, until it shall be indemnified by the Registered Owners to its satisfaction against any and all costs and expenses, outlays and counsel fees and expenses and other reasonable disbursements, and against all liability; the Dissemination Agent may, nevertheless, begin suit, or appear in and defend suit, or do anything else in its judgment proper to be done by it as such Dissemination Agent, without indemnity.

**Section 9. Term of Disclosure Agreement.**

This Disclosure Agreement shall terminate upon (1) payment or provision for payment in full of the Bonds; (2) repeal or rescission of Section (b)(5) of the Rule; or (3) a final determination that Section (b)(5) of the Rule is invalid or unenforceable.

**Section 10. Beneficiaries.**

This Disclosure Agreement shall inure solely to the benefit of the City, the Dissemination Agent and the Registered Owners from time to time of the Bonds and nothing herein contained shall confer any right upon any other person.

**Section 11. Notices and Filings.**

(a) Any written notice to or demand may be served, presented or made to the persons named below and shall be sufficiently given or filed for all purposes of this Disclosure Agreement if deposited in the United States mail, first class postage prepaid, or in a recognized form of overnight mail or by telecopy with confirmation of receipt, addressed:

(i) to each National Repository and the State Information Depository, if any, at its address listed for such National Repository by the Security and Exchange Commission at [www.sec.gov/info/municipal/nrmsir.htm](http://www.sec.gov/info/municipal/nrmsir.htm)

(ii) to the Dissemination Agent at:

DAC, an Ernst and Young Company LLP  
250 Park Avenue South, Suite 305  
Winter Park, FL 32789  
Attention: Nicole Sheehan  
Fax: (407) 515-6513

(iii) to the City or the Disclosure Representative at:

The City of Philadelphia  
Office of the Director of Finance  
Municipal Services Building  
1401 J.F.K. Boulevard  
Philadelphia, PA 19102;  
Attention: Director of Finance  
Fax: (215) 568-1947

(iv) to the MSRB at:

Municipal Securities Rulemaking Board  
1900 Duke Street, Suite 600  
Alexandria, VA 22314  
Telecopier No.: (703) 797-6700

or such other addresses as may be designated in writing to all parties hereto.

(b) Any filing under this Disclosure Agreement may be made to the National Repositories and State Information Depositories solely by transmitting such filing to the Texas Municipal Advisory Council (the "MAC") as provided at <http://www.disclosureusa.org> unless the United States Securities and Exchange Commission has withdrawn the interpretive advice in its letter to the MAC dated September 7, 2004.

**Section 12. No Personal Recourse.**

No personal recourse shall be had for any claim based on this Disclosure Agreement against any member, officer, or employee, past, present or future, of the City (including without

limitation, the Disclosure Representative), or of any successor body as such, either directly or through the City or any such successor body, under any constitutional provisions, statute or rule of law or by the enforcement of any assessment or penalty or otherwise.

**Section 13. Controlling Law.**

The laws of the Commonwealth of Pennsylvania shall govern the construction and interpretation of this Disclosure Agreement.

**Section 14. Removal and Resignation of the Dissemination Agent.**

The City has appointed the Dissemination Agent as exclusive Dissemination Agent under this Disclosure Agreement. The City may, upon 30 days' written notice to the Dissemination Agent and the Fiscal Agent, replace or appoint a successor Dissemination Agent. Upon termination of the Dissemination Agent's services as Dissemination Agent, whether by notice of the City or the Dissemination Agent, the City agrees to appoint a successor Dissemination Agent or, alternately, agrees to assume all responsibilities of Dissemination Agent under this Disclosure Agreement for the benefit of the holders of the Bonds. Notwithstanding any replacement or appointment of a successor, the City shall remain liable until payment in full for any and all sums owed and payable to the Dissemination Agent. The Dissemination Agent may resign at any time by providing thirty days' prior written notice to the City.

**Section 15. Successors and Assigns.**

All of the covenants, promises and agreements contained in this Disclosure Agreement by or on behalf of the City or by or on behalf of the Dissemination Agent shall bind and inure to the benefit of their respective successors and assigns, whether so expressed or not.

**Section 16. Headings for Convenience Only.**

The descriptive headings of this Disclosure Agreement are inserted for convenience of reference only and shall not control or affect the meaning or construction of any of the provisions hereof.

**Section 17. Counterparts.**

This Disclosure Agreement may be executed in any number of counterparts, each of which when so executed and delivered shall be an original, but such counterparts shall together constitute but one and the same instrument.

**Section 18. Entire Agreement.**

This Disclosure Agreement sets forth the entire understanding and agreement of the City and the Dissemination Agent with respect to the matters herein contemplated and no modification or amendment of or supplement to this Disclosure Agreement shall be valid or effective unless the same is in writing and signed by the parties hereto.

IN WITNESS WHEREOF, THE CITY OF PHILADELPHIA, PENNSYLVANIA has caused this Disclosure Agreement to be executed by the Acting 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 duly authorized officers, all as of the day and year first above written.

**THE CITY OF PHILADELPHIA,  
PENNSYLVANIA**

By: \_\_\_\_\_  
Acting Director of Finance

**DIGITAL ASSURANCE  
CERTIFICATION, L.L.C., as  
Dissemination Agent**

By: \_\_\_\_\_  
Authorized Officer



## **EXHIBIT A**

1. Commencing with the fiscal year ending June 30, 2005, a copy of the Comprehensive Annual Financial Report (“CAFR”), which contains the audited combined financial statements of the City, prepared by the office of the Director of Finance of the City 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; and

2. Commencing with the Fiscal Year of the Water Department ending June 30, 2005, to the extent such information is not contained in the CAFR, an update of the information set forth in the financial statements of the Water Department for the Fiscal Years ended June 30, 2004 and June 30, 2003 included in Appendix I to the Official Statement.

**EXHIBIT B**

**MUNICIPAL SECONDARY MARKET DISCLOSURE**

**INFORMATION COVER SHEET**

This cover sheet and material event notice should be sent to the Municipal Securities Rulemaking Board or to all Nationally Recognized Municipal Securities Information Repositories, and the State Information Depository, if applicable, pursuant to Securities and Exchange Commission Rule 15c2-12 or any analogous state statute.

City's and/or Other Obligated Person's Name: \_\_\_\_\_  
CUSIP Numbers (attach additional sheet if necessary): \_\_\_\_\_

Nine-Digit CUSIP Number(s) to which this material event notice relates: \_\_\_\_\_  
\_\_\_\_\_

Information relates to all securities issued by issuer having the following six-digit numbers: \_\_\_\_\_  
\_\_\_\_\_

Number of pages of attached material event notice: \_\_\_\_\_

Description of Material Events Notice (Check One):

1.  Principal and interest payment delinquencies
2.  Non-Payment related defaults
3.  Unscheduled draws on debt service reserves reflecting financial difficulties
4.  Unscheduled draws on credit enhancements reflecting financial difficulties
5.  Substitution of credit or liquidity providers, or their failure to perform
6.  Adverse tax opinions or events affecting the tax-exempt status of the security
7.  Modifications to rights of security holders
8.  Bond calls
9.  Defeasances
10.  Release, substitution, or sale of property securing repayment of the security
11.  Rating changes
12.  Failure to provide annual financial information as required
13.  Other material event notice (specify):
14.  Financial information: Please check all appropriate spaces:  
 CAFR (a)  includes  does not include Annual Financial information  
(b)  Audited? Yes  No   
 Annual Financial Information: Audited? Yes  No   
 Operating Data  
Fiscal Period Covered: \_\_\_\_\_

\* Financial Information should not be filed with the MSRB.

I hereby represent that I am authorized by the issuer or its agent to distribute this information publicly:

Signature: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Employer: \_\_\_\_\_

Address: \_\_\_\_\_

City, State, Zip Code: \_\_\_\_\_

Voice Telephone Number: \_\_\_\_\_

Please print the material event notice attached to the cover sheet in 10-point type or larger.

The cover sheet and notice may be faxed to the MSRB at (703) 683-1930. Contact the MSRB at (202) 223-9503 with questions regarding this form or the dissemination of this notice.

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