

NEW ISSUE – BOOK-ENTRY ONLY

In the opinion of Bond Counsel, under existing law and assuming compliance with the tax covenant described herein, the interest on the Bonds is excluded from gross income for federal income tax purposes and is not a specific preference item for purposes of the federal alternative minimum tax. Interest on the Bonds is exempt from Pennsylvania personal income tax and corporate net income tax and the Bonds are exempt from personal property taxes in Pennsylvania. See "TAX EXEMPTION" herein.



The City of Philadelphia, Pennsylvania

\$381,275,000

Water and Wastewater Revenue Refunding Bonds, Variable Rate Series 2003

Dated: Date of Delivery

Price: 100%

Due: June 15, 2023

The City of Philadelphia, Pennsylvania Water and Wastewater Revenue Refunding Bonds, Variable Rate Series 2003 (the "Bonds") of The City of Philadelphia, a corporation and body politic existing under the laws of the Commonwealth of Pennsylvania (the "City"), are being issued 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 1993 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 maturity amount of \$106,240,000 issued under the Prior Ordinance (as defined herein) (consisting of all or portions of the City's Water and Sewer Revenue Bonds, Fourteenth Series and Fifteenth Series) which are subject to the provisions of the General Ordinance, (ii) the City's Water and Wastewater Revenue Bonds outstanding as of June 30, 2002 in the aggregate principal amount of \$1,764,439,000 issued under the General Ordinance (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, Series 2001A and Series 2001B), 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").

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 will initially bear interest at a Weekly Interest Rate (as defined herein), unless otherwise converted, with interest payable semi-annually on each June 15 and December 15, commencing June 15, 2003. The Bonds are subject to optional tender and to mandatory tender upon, among other events, conversion from one interest rate mode to another. While bearing interest at a variable rate, the Bonds are to be purchased 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. (the "Bond Insurer"). See "BOND INSURANCE" and APPENDIX VI – "SPECIMEN MUNICIPAL 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") among the City, the Tender Agent and Dexia Credit Local, acting through its New York Agency (the "Liquidity Facility Provider").



The Standby Bond Purchase Agreement has a stated expiration date of April 1, 2010, 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 Series 2003 Bonds. In such event, no funds will be available pursuant to the Standby Bond Purchase Agreement to purchase Series 2003 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 APPENDIX VII – "DESCRIPTION OF LIQUIDITY FACILITY PROVIDER," respectively, herein.

Salomon Smith Barney 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 Underwriters, and subject to the approving legal opinion of Kleinbard, Bell & Brecker LLP and Evans & Borden Evans, LLC, Co-Bond Counsel, both of Philadelphia, Pennsylvania. Certain legal matters will be passed upon for the Underwriter by Ballard Spahr Andrews & Ingersoll, LLP, and Law Offices of Denise Joy Smyler, both of Philadelphia, Pennsylvania. 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 April 1, 2003.

Salomon Smith Barney

Dated: March 20, 2003



THE CITY OF PHILADELPHIA, PENNSYLVANIA

MAYOR

HONORABLE JOHN F. STREET

MAYOR'S CHIEF OF STAFF

Joyce S. Wilkerson

MAYOR'S CABINET

Janice D. DavisSecretary of Financial Oversight/Director of Finance
 Nelson A. Diaz..... City Solicitor
 Philip R. Goldsmith.....Managing Director
 George R. Burrell, Jr.....Secretary of External Affairs
 James Cuorato..... 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. NeffChief Information Officer

City Treasurer

Corey Kemp

City Controller

Jonathan A. Saidel

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

Kumar Kishinchand, Water Commissioner
 Bernard Brunwasser, Deputy Water Commissioner
 David A. Katz, Deputy Water Commissioner
 Richard E. Roy, Deputy Water Commissioner
 Stephen J. Ballay, Manager, Information Science & Technology Division
 Joseph S. Clare, III, Administrative Services Director and
 Assistant General Manager, Finance and Administration
 J. Barry Davis, General Counsel to the Water Department
 Marleen Duley, Deputy Revenue Commissioner, Water Revenue Bureau
 Lorin Fields, General Manager, Human Resources
 Ed Grusheski, General Manager, Public Affairs
 Thomas J. Kulesza, Acting General Manager, Planning and Engineering

Consulting Engineer

Black & Veatch Corporation, Kansas City, Missouri

Financial Advisors

P.G. Corbin & Company, Inc.
 and
 Phoenix Capital Partners, LLP

No dealer, broker, salesman 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.

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.

Other than with respect to information concerning Financial Security Assurance Inc. (“Financial Security”) contained under the caption “BOND INSURANCE” and APPENDIX VI – “SPECIMEN MUNICIPAL BOND INSURANCE POLICY” herein, none of the information in this Official Statement has been supplied or verified by Financial Security and Financial Security 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 Dexia Credit Local, acting through its New York Agency (“Dexia”), contained under the caption “THE LIQUIDITY FACILITY” and APPENDIX VII – “DESCRIPTION OF LIQUIDITY FACILITY PROVIDER,” herein, none of the information in this Official Statement has been supplied or verified by Dexia and Dexia 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.

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.

TABLE OF CONTENTS

	<u>Page</u>		<u>Page</u>
INTRODUCTORY STATEMENT	1	Development of Adopted Fiscal Year 2003	
General	1	Budget	50
The Water Department	1	Development of Proposed Fiscal Year 2004	
Rates and Rate Covenant	2	Budget	50
Authorization for the Bonds	2	Revenues, Expenses and Debt Service	50
Outstanding and Additional Indebtedness	3	RATES	53
Plan of Finance	4	Rate Setting Process	53
Interest Rate Swap Agreement	4	Current Rate Structure	53
Security for the Bonds	4	Billing and Collections	55
Bond Insurance	4	Compliance with Rate Covenants	55
Liquidity Facility for the Bonds	4	LITIGATION AND CLAIMS	56
Miscellaneous	5	TAX EXEMPTION	57
PLAN OF FINANCE	5	NEGOTIABLE INSTRUMENTS	57
INTEREST RATE SWAP AGREEMENT	5	CONSULTING ENGINEER'S REPORT	58
ESTIMATED SOURCES AND USES OF FUNDS	6	UNDERWRITING	58
THE BONDS	6	CERTAIN RELATIONSHIPS	58
General	6	RATINGS	58
Redemption of the Bonds	12	LEGAL MATTERS	59
Notice of Redemption	14	FINANCIAL ADVISORS	59
Debt Service Requirements	15	NO LITIGATION OPINION	59
Book-Entry Only System	15	CERTAIN REFERENCES	59
SECURITY FOR THE BONDS	17	VERIFICATION OF MATHEMATICAL	
Pledge of Project Revenues	17	COMPUTATIONS	60
Water and Wastewater Funds	17	CONTINUING DISCLOSURE	60
Application of Project Revenues	19	ADDRESSES OF PRINCIPAL PARTIES	60
Debt Reserve Account	19		
Rate Covenant	20	APPENDIX I FINANCIAL STATEMENTS OF THE	
Limitations on Effectiveness of Pledge of Project		WATER FUND FOR FISCAL YEARS ENDED	
Revenues and Water and Wastewater Funds	20	JUNE 30, 2002 AND 2001	I-1
Additional Bonds	21	APPENDIX II ENGINEERING REPORT	II-1
Transfer to an Authority	21	APPENDIX III SUMMARIES OF CERTAIN	
BOND INSURANCE	21	PROVISIONS OF THE ACT; CERTAIN	
Bond Insurance Policy	21	DEFINITIONS AND SUMMARIES OF CERTAIN	
Financial Security Assurance Inc.	21	PROVISION OF THE GENERAL ORDINANCE;	
THE LIQUIDITY FACILITY	22	AND CERTAIN COVENANTS OF THE CITY OF	
General	22	PHILADELPHIA FOR THE BENEFIT OF THE	
Limitations of Liquidity Facility	23	BOND INSURER	III-1
Events of Termination, Events of Default,		APPENDIX IV CERTAIN INFORMATION	
Remedies	23	CONCERNING THE CITY OF PHILADELPHIA	IV-1
Extension, Reduction, Adjustment or		APPENDIX V FORM OF OPINION OF CO-BOND	
Termination of the Liquidity Facility	27	COUNSEL	V-1
REMEDIES OF BONDHOLDERS	28	APPENDIX VI SPECIMEN MUNICIPAL BOND	
THE WATER DEPARTMENT	29	INSURANCE POLICY	VI-1
General	29	APPENDIX VII DESCRIPTION OF LIQUIDITY	
Administration	29	FACILITY PROVIDER	VII-1
Personnel	31	APPENDIX VIII FORM OF CONTINUING	
Relationship to the City	32	DISCLOSURE AGREEMENT	VIII-1
The Water System	32	APPENDIX IX RATE AND TENDER SUMMARY	
The Wastewater System	35	TABLE	IX-1
Capital Improvement Program	42		
Future Financings	43		
Commonwealth Grants	44		
Enhanced Security	44		
HISTORICAL COMPARATIVE STATEMENT OF			
REVENUES AND EXPENSES (LEGALLY			
ENACTED BASIS)	46		
Analysis of Comparative Statement of Revenues			
and Expenses	48		

[THIS PAGE INTENTIONALLY LEFT BLANK]

OFFICIAL STATEMENT
relating to

The City of Philadelphia, Pennsylvania
\$381,275,000 Water and Wastewater Revenue Refunding Bonds, Variable Rate Series 2003

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 2003 (the "Bonds"). Unless otherwise indicated, capitalized terms used in this Official Statement are defined in APPENDIX III - "SUMMARIES OF CERTAIN PROVISIONS OF THE ACT; CERTAIN DEFINITIONS AND SUMMARIES OF CERTAIN PROVISIONS OF THE GENERAL ORDINANCE; AND CERTAIN COVENANTS OF THE CITY OF PHILADELPHIA FOR THE BENEFIT OF THE BOND INSURER" (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 1993 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 "WATER DEPARTMENT" herein.

The Water Department, which began Water System service in 1801, supplies water to the City and a portion 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 is approximately 1.672 million and the population served by the Wastewater System is approximately 2.218 million.

In connection with the authorization of the Bonds, Black & Veatch Corporation performed engineering evaluations in August 2001 which were updated in November 2002 of the then current

condition, use and maintenance of the Water and Wastewater Systems. Such engineering evaluations mandated by the General Ordinance as a condition to the issuance of the bonds have resulted in findings 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 prepared by Black & Veatch Corporation provide the basis of such findings in an engineering report dated November 15, 2001, updated February 28, 2003, and further updated March 20, 2003 (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, 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 (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 the First Supplemental Ordinance (the "First Supplemental Ordinance") authorizing the issuance of Water and Wastewater Revenue Bonds, Series 1993 (the "Series 1993 Bonds"), approved June 24, 1993, the Second Supplemental Ordinance (the "Second Supplemental Ordinance") authorizing the issuance of Water and Wastewater Revenue Bonds, Series 1995 (the "Series 1995 Bonds"), approved May 9, 1994, the Third Supplemental Ordinance (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") approved October 27, 1997, the Fourth Supplemental Ordinance (the "Fourth Supplemental Ordinance") authorizing the issuance of the Series 1998 Bonds (the "Series 1998 Bonds"), approved December 11, 1998, the Fifth Supplemental Ordinance (the "Fifth Supplemental Ordinance") authorizing the issuance of the Series 1999 Bonds (the "Series 1999 Bonds"), approved December 11, 1998, the Sixth Supplemental Ordinance (the "Sixth Supplemental Ordinance") authorizing the issuance of the Series 1999A Bonds (the "Pennvest Loan"), approved December 11, 1998, the Seventh Supplemental Ordinance (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"), approved May 10, 2001, the Eighth Supplemental Ordinance (the "Eighth Supplemental Ordinance") authorizing the issuance of Water and Wastewater Revenue Bonds, Series 2004 (the "Series 2004 Bonds"), approved November 22, 2002 and the Ninth Supplemental Ordinance (the "Ninth Supplemental Ordinance") authorizing the issuance of the Bonds, approved November 22, 2002. 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 Pennsylvania 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.

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 currently outstanding \$106,240,000 aggregate principal amount of water and sewer revenue bonds consisting of the Fourteenth Series, Fifteenth Series and Sixteenth Series (collectively, 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 June 30, 2002 \$1,764,439,000 aggregate principal amount of Water and Wastewater Revenue Bonds (consisting of the Series 1993 Bonds, the Series 1995 Bonds, the Series 1997 Bonds, the Series 1998 Bonds, the Series 1999 Bonds and the Series 2001 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 are no longer subject to the Prior Ordinance. The Water and Sewer Revenue Bonds, the Series 1993 Bonds, the Series 1995 Bonds, the Series 1997 Bonds, the Series 1998 Bonds, the Series 1999 Bonds and the Series 2001 Bonds are herein referred to as the "Outstanding Bonds." The Outstanding Bonds and the Bonds will be equally and ratably secured under the General Ordinance.

Pursuant to the Eighth Supplemental Ordinance, the City also has authorized the issuance of up to \$250,000,000 aggregate principal amount Series 2004 Bonds to fund capital improvements to the Water and Wastewater Systems. The Series 2004 Bonds are scheduled to be issued sometime in calendar year 2004.

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 (the "1999 Pennvest Loan") pursuant to the Sixth Supplemental Ordinance. The 1999 Pennvest Loan is equally and ratably secured with the Outstanding Bonds and the Bonds under the General Ordinance. The Outstanding 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 June 30, 2002 the City had outstanding \$11,500,000 aggregate principal amount of general obligation bonds (the "General Obligation Bonds") attributable to the Water and Wastewater Systems,

which includes \$11,487,000 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 1993 and to pay costs of issuance relating to the Bonds. See “PLAN OF FINANCE” below.

Interest Rate Swap Agreement

The Bonds are being issued in conjunction with an interest rate swap agreement between the City and Salomon Brothers Holding Company 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.”

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 insured by a municipal bond insurance policy to be issued simultaneously with the delivery of the Bonds hereunder by Financial Security Assurance Inc. (the “Bond Insurer” or “Financial Security”). See “BOND INSURANCE” and APPENDIX VI – “SPECIMEN MUNICIPAL 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, Dexia Credit Local, acting through its New York Agency (the “Liquidity Facility Provider”), will purchase such Bonds pursuant to a standby bond purchase agreement (the “Standby Bond Purchase Agreement”) with the City. The Standby Bond Purchase Agreement will expire by its terms on April 1, 2010, unless extended or earlier terminated in accordance with its terms. 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 the Bonds. In such event, no funds will be available pursuant to the Standby Bond Purchase Agreement 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 APPENDIX VII - “DESCRIPTION OF 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, 2002 are available from the Office of the City Treasurer, Suite 640, Municipal Services Building, 1401 J.F. Kennedy Boulevard, Philadelphia, Pennsylvania 19102.

Financial statements of the Water Fund for the Fiscal Years ended June 30, 2002 and 2001 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 and the General Ordinance (including definitions of certain terms) 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 Kleinbard, Bell & Brecker LLP and Evans & Borden Evans, LLC, 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 municipal bond insurance policy (the "Bond Insurance Policy") to be issued by the Bond Insurer to guaranty payment of the Bonds. APPENDIX VII attached hereto contains a description of the Liquidity Facility Provider. APPENDIX VIII attached hereto contains the form of Continuing Disclosure Agreement. APPENDIX IX attached hereto contains the Rate and Tender Summary Table.

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 1993 and to pay costs of issuance relating to the Bonds.

The proceeds of the Bonds, when delivered, will be used to currently refund a portion of the Series 1993 Bonds, currently outstanding in the aggregate principal amount of \$362,585,000. The Water and Wastewater Revenue Bonds expected to be refunded consist of the Series 1993 Bonds due on each June 15 from June 15, 2012 through June 15, 2023.

The City will irrevocably deposit a portion of the proceeds of the Bonds, when delivered, together with other available funds of the Water Department, 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.

INTEREST RATE SWAP AGREEMENT

On December 5, 2002, the City entered into an ISDA Master Agreement, Schedule and Confirmations (the "Swap Agreement") with Salomon Brothers Holding Company Inc. ("SBHCI") in connection with the refunding of the Series 1993 Bonds and the issuance of the Bonds and the potential

refunding of the Series 1995 Bonds. Under the terms of the Swap Agreement, SBHCI paid an up-front premium payment to the City of \$30,400,000 and in return the City granted SBHCI 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. SBHCI has elected to exercise its right under the Swap Agreement with respect to the Series 1993 Bonds and therefore the City will pay a fixed rate to SBHCI 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 1993 Bonds. SBHCI 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 SBHCI to calculate floating rate payments based upon a percentage of LIBOR.

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 SBHCI, as the swap provider, and Financial Security Assurance Inc., as the bond insurer (the “Bond Insurer”).

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	\$381,275,000.00
Total Sources of Funds	<u>\$381,275,000.00</u>
 <u>Uses of Funds:</u>	
Deposit to the Escrow Fund	\$376,747,537.50
Payment of Costs of Issuance (a)	<u>4,527,462.50</u>
Total Uses of Funds	<u>\$381,275,000.00</u>

(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 and other expenses of the offering.

THE BONDS

General

The Bonds will be issued in the aggregate principal amount and will be dated and bear interest at the rates 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”).

The Bonds will initially bear interest at a Weekly Interest Rate for a Weekly Interest Rate Period, unless otherwise converted. The Bonds may bear interest from time to time at (i) a Daily Interest Rate during a Daily Interest Rate Period, (ii) a Weekly Interest Rate during a Weekly Interest Rate Period, (iii) Bond Interest Term Rates during a Short-Term Interest Rate Period, or (iv) a Long-Term Interest Rate during a Long-Term Interest Rate Period, as more fully described below. All of the Bonds must be in the same interest rate period. Interest shall be computed, in the case of a Long-Term Interest Rate Period, on the basis of a 360-day year consisting of twelve 30-day months, and in the case of a Daily Interest Rate Period, a Weekly Interest Rate Period or a Short-Term Interest Rate Period, on the basis of a 365 or 366-day year, as appropriate, for the actual number of days elapsed. When the Bonds bear interest at a Daily Interest Rate, Weekly Interest Rate or Bond Interest Term Rates, the authorized denominations will be

\$100,000 and any integral multiple of \$5,000 in excess of \$100,000, and when the Bonds bear interest at a Long-Term Interest Rate, the authorized denominations will be \$5,000 and any integral multiple thereof (the "Authorized Denominations").

"Long-Term Interest Rate Period" means each period during which a Long-Term Interest Rate is in effect; and "Long-Term Interest Rate" means a term, non-variable interest rate on the Bonds established in accordance with the Bond Committee Determination. "Daily Interest Rate Period" means each period during which a Daily Interest Rate is in effect; and "Daily Interest Rate" means a variable interest rate on the Bonds established in accordance with the Bond Committee Determination. "Weekly Interest Rate Period" means each period during which a Weekly Interest Rate is in effect; and "Weekly Interest Rate" means a variable interest rate on the Bonds established in accordance with the Bond Committee Determination. "Short Term Interest Rate Period" means each period, comprised of Bond Interest Terms, during which Bond Interest Term Rates are in effect; "Bond Interest Term" or "BIT" shall mean each period established in accordance with the Bond Committee Determination during which the Bonds shall bear interest at a Bond Interest Term Rate; and "Bond Interest Term Rate" or "BIT Rate" means a term, non-variable interest rate on the Bonds established periodically in accordance with the Bond Committee Determination. 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 15% per annum (the "Maximum Rate").

Interest on the Bonds will be payable by the Fiscal Agent (i) during any Weekly Interest Rate Period, on each June 15 and December 15, commencing on June 15, 2003; (ii) during any Daily Interest Rate Period, on the fifth Business Day of each calendar month; (iii) during any Long-Term Interest Rate Period, on each June 15 and December 15, or, if any such June 15 and December 15 is not a Business Day, on the next succeeding Business Day; (iv) during any BIT, on the day next succeeding the last day thereof (each, an "Interest Payment Date"); and (v) as set forth in the Liquidity Facility for Bonds purchased by the Liquidity Facility Provider. "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 are closed or are required to be closed or on which the New York Stock Exchange is closed. "Interest Rate Period" shall mean any Daily Interest Rate Period, Weekly Interest Rate Period, Short-Term Interest Rate Period or Long-Term Interest Rate Period.

The term of the Bonds shall be divided into consecutive Interest Rate Periods selected by the City. At any time, all Bonds (other than Bonds held by the Liquidity Facility Provider) shall bear interest at a Daily Interest Rate, a Weekly Interest Rate, a Long-Term Interest Rate or BIT Rates. During a Short-Term Interest Rate Period, Bonds may bear interest at different BIT Rates or have BITs of different durations. For any Daily Interest Rate Period, interest shall accrue from the first day thereof and thereafter from the first day of each calendar month through the last day of each calendar month during such Daily Interest Rate Period. 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. For any BIT within a Short-Term Interest Rate Period, interest shall accrue from the first day thereof to and including the last day thereof. For any Long-Term Interest Rate Period, interest shall accrue from the first day thereof and thereafter from each Interest Payment Date in respect thereof (other than the last such Interest Payment Date), to and including the day immediately preceding the next succeeding Interest Payment Date.

Within each Interest Rate Period, the applicable 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 such Bonds on such Business Day at a price (without regard to accrued interest) equal to the principal amount thereof.

Interest Rate Provisions

Daily Interest Rate. The Bonds shall bear interest at the Daily Interest Rate (as determined by the Remarketing Agent on each Business Day for such Business Day) during a Daily Interest Rate Period.

The Daily Interest Rate for any day during a Daily Interest Rate Period which is not a Business Day shall be the same as the Daily Interest Rate for the immediately preceding Business Day. If the Remarketing Agent shall not have determined a Daily Interest Rate for any Business Day, the Daily Interest Rate for such Business Day shall be the same as the Daily Interest Rate for the immediately preceding day and such rate shall continue until the earlier of the day the Remarketing Agent determines a new Daily Interest Rate or the seventh day succeeding the first day on which such Daily Interest Rate was not determined by the Remarketing Agent. If the Remarketing Agent does not determine a Daily Interest Rate by the seventh day succeeding the first day on which the Remarketing Agent has not determined the Daily Interest Rate, or if for any reason a Daily Interest Rate determined by the Remarketing Agent for any day shall be held to be invalid or unenforceable by a court of law, the interest rate applicable to the Bonds shall be the interest rate per annum equal to 100% of the BMA Municipal Swap Index of Municipal Market Data, a Thomson Financial Services Company, or its successors or assigns (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, 68% 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 Daily Interest Rate would otherwise be determined by the Remarketing Agent.

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 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 the Wednesday preceding the last day of such Weekly Interest Rate Period and ending on the last day of such Weekly Interest Rate Period.

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 100% 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, 70% 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.

Bond Interest Term Rate. During each Short-Term Interest Rate Period, each Bond shall bear interest at the BIT Rate determined for the BIT applicable to such Bond by the Remarketing Agent no later than the first day of each BIT. Each BIT shall be a period of not less than one day nor more than

180 days as determined by the Remarketing Agent. In determining the number of days in each BIT, the Remarketing Agent shall take into account the following factors: (i) existing short-term tax-exempt market rates and indices of such short-term rates, (ii) the existing market supply and demand for short-term tax-exempt securities, (iii) existing yield curves for short-term and long-term tax-exempt securities for obligations of credit quality comparable to the Bonds, (iv) general economic conditions, (v) economic and financial conditions that may affect or be relevant to the Bonds, (vi) the BITs of other Bonds and (vii) such other facts, circumstances and conditions pertaining to financial markets as the Remarketing Agent, in its sole discretion, shall determine to be relevant.

The Remarketing Agent shall announce, by no later than 9:00 a.m., New York City time, on the first day of each BIT, a list of ranges of possible BITs and related BIT Rates. The BIT and the BIT Rate for the Bonds need not be the same for any two of the Bonds. If for any reason the Remarketing Agent cannot or does not determine the required BIT and associated BIT Rate, or if a BIT or associated BIT Rate shall be held by a court of law to be invalid or unenforceable, such BIT shall be deemed to be 30 days, provided that if the last day so determined shall not be a day immediately preceding a Business Day, such BIT shall end on the first day immediately preceding the Business Day next succeeding such last day, or if such last day would be after the day immediately preceding the maturity date, such BIT shall end on the day immediately preceding the maturity date, and the applicable BIT Rate for such BIT shall be the rate per annum equal to 70% of the interest rate on high grade unsecured commercial paper notes sold through dealers by major corporations as reported by The Wall Street Journal on the first day of such BIT with a maturity that most nearly equals the BIT for which a BIT Rate is being so calculated.

Long-Term Interest Rate. The duration of a Long-Term Interest Rate Period shall be determined by the Remarketing Agent, which duration shall be at least 181 days. The Long-Term Interest Rate during a Long-Term Interest Rate Period shall be determined by the Remarketing Agent on a Business Day no later than the effective date of such Long-Term Interest Rate Period. If for any reason the Remarketing Agent does not determine a Long-Term Interest Rate on or prior to the first day of such Long-Term Interest Rate Period, then the Bonds shall bear interest at a Weekly Interest Rate, and shall continue to bear interest at a Weekly Interest Rate until properly adjusted otherwise.

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 Bond Committee Determination, including delivery of an opinion of bond counsel specializing and nationally recognized in the field of municipal finance law to the effect that the action proposed to be taken is authorized or permitted by the laws of the Commonwealth of Pennsylvania (the "Commonwealth") and the Bond Committee Determination and will not adversely affect any exclusion from gross income for federal income tax purposes of interest on the Bonds (a "Favorable Opinion of Bond Counsel") and written confirmation that the adjustment will not in and of itself result in a reduction or withdrawal in the ratings on the Bonds (a "Rating Confirmation").

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 (i) in the case of an adjustment to a Long-Term Interest Rate Period, the duration of such Long-Term Interest Rate Period; and (ii) 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. A change to an alternate Interest Rate Period may not take place unless a Favorable Opinion of Bond Counsel and a Rating Confirmation are delivered to the Fiscal Agent on the effective date of such change.

The Fiscal 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, BIT Rates, or a Weekly Interest Rate, as appropriate, unless (a) Bond Counsel

fails to deliver a Favorable Opinion of Bond Counsel on or before the effective date of such adjustment, or (b) in the case of an adjustment to a, or establishment of another, Long-Term Interest Rate Period, the City shall elect, on or prior to the date of determination of such Long-Term Interest Rate, to rescind its election to cause such adjustment, in which case the Bonds, if being adjusted from a Daily Interest Rate Period, a Weekly Interest Rate Period or a Short-Term Interest Rate Period, shall continue to bear interest at a Daily Interest Rate, a Weekly Interest Rate or BIT Rates as in effect prior to such proposed adjustment in the Interest Rate Period, or, if being adjusted from a Long-Term Interest Rate Period, shall bear interest at a Weekly Interest Rate; (ii) the 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 effective date of the new Interest Rate Period; and (iv) the applicable purchase price on such date.

Upon the failure of an adjustment to an alternate Interest Rate Period, the Bonds will bear interest as provided in clause (i) of the notice described above. If notice of such adjustment has been mailed as provided in the Bond Committee Determination and Bond Counsel fails to deliver a Favorable Opinion of Bond Counsel on the effective date as therein described, the Bonds shall continue to be subject to mandatory tender for purchase on the date which would have been the effective date of such adjustment. If the City has not made a timely election prior to the end of any Long-Term Interest Rate Period that, during the next succeeding Interest Rate Period, the Bonds shall bear interest at a specified interest rate, the next succeeding Interest Rate Period for the Bonds shall be a Weekly Interest Rate Period until properly adjusted otherwise.

In connection with an adjustment to any Interest Rate Period that would require the mandatory tender for purchase of the Bonds at a purchase price greater than the principal amount thereof under the circumstances as described under the heading “Mandatory Tender for Purchase on First Day of Each Interest Rate Period” below, the City must deliver to the Fiscal Agent, prior to the Fiscal Agent’s mailing of notice to DTC of such adjustment, Available Moneys (as hereinafter defined) to pay the portion of such purchase price corresponding to the premium, unless the Liquidity Facility then in effect provides for payment of the premium.

Rescinding Election to Adjust to Long-Term Interest Rate. If the City elects to rescind its election to adjust the interest rate on the Bonds to a Long-Term Interest Rate, then the Bonds shall bear interest at a Daily Interest Rate, a Weekly Interest Rate or BIT Rates as in effect prior to such election, or if the Bonds were to be adjusted from another Long-Term Interest Rate, then the Bonds shall bear interest at a Weekly Interest Rate for the period commencing on the date which would have been the effective date of such Long-Term Interest Rate Period. In either such case, the Bonds shall continue to be subject to mandatory tender for purchase on the day that would have been the effective date of such Long-Term Interest Rate Period. The Tender Agent shall give notice to the owners of the Bonds not less than 30 days prior to the effective date of such Long-Term Interest Rate Period that the Bonds shall not be adjusted to a Long-Term Interest Rate but shall bear interest as described in the immediately preceding sentence.

Optional and Mandatory Purchase

Optional Tender for Purchase During Daily Interest Rate Period. During any Daily Interest Rate Period, the beneficial interest in any Bond shall be purchased (in whole) from the holder thereof at the option of the beneficial owner on any Business Day at a purchase price equal to the principal amount thereof, plus accrued interest, if any, upon delivery to the Tender Agent of an irrevocable written or telephonic notice. Any notice received by the Tender Agent after 11:00 a.m., New York City time, shall be deemed to have been received by the Tender Agent on the next succeeding Business Day.

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 whole) 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 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., New York City time, 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 or Daily 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 Day Next Succeeding Last Day of Each BIT. On the day next succeeding the last day of each BIT (unless such day is the maturity date or the first day of a new Interest Rate Period, in which case the Bonds will be subject to mandatory tender for purchase as provided in the next paragraph), the beneficial owner of a Bond will be required to tender for purchase the beneficial interest in such Bond, and the beneficial interest in such Bond shall be purchased at a purchase price equal to the principal amount thereof.

Mandatory Tender for Purchase on First Day of Each Interest Rate Period. The Bonds shall be subject to mandatory tender for purchase on the first day of each 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 or, in the case of a purchase on the first day of an Interest Rate Period which shall be preceded by a Long-Term Interest Rate Period and which shall commence prior to the day originally established as the last day of such preceding Long-Term Interest Rate Period, at a purchase price equal to the optional redemption price which would have been applicable to the Bonds on such mandatory purchase date if such preceding Long-Term Interest Rate Period had continued to the day originally established as the last day thereof, plus accrued interest, if any.

Mandatory Tender for Purchase Upon Occurrence of Certain Events Under 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 or expiration of the term of such Liquidity Facility, (ii) such Liquidity Facility being replaced with the effect that the Bonds are no longer payable from such Liquidity Facility, or (iii) the Liquidity Facility Provider notifying the Tender Agent that an event of termination or an event of default has occurred under the Liquidity Facility and that the Liquidity Facility Provider is terminating the Liquidity Facility in accordance with its terms, then on the second Business Day preceding any termination, expiration or replacement of such Liquidity Facility, the Bonds shall be purchased or deemed purchased as provided in the Bond Committee Determination.

Notwithstanding anything in the preceding paragraph to the contrary, in the event of the termination or expiration of the Liquidity Facility, or in the event of any replacement of such Liquidity Facility, and if the City shall deliver to the Tender Agent and the Remarketing Agent, prior to the date that notice of such termination, expiration or replacement is given by the Tender Agent, written evidence from each rating agency then rating the Bonds, to the effect that such termination, expiration or replacement, in and of itself, will not result in the withdrawal or reduction of the rating(s) then applicable to the Bonds, then the Bonds shall not be subject to mandatory tender for purchase as provided above, solely as a result of such termination, expiration or replacement. In the event that no mandatory tender is

required as described above, the Tender Agent shall give notice to the Owners of the Bonds 30 days prior to such termination, expiration or replacement. See “THE LIQUIDITY FACILITY” herein.

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 Bond Committee Determination 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; and
- (ii) moneys furnished by the Liquidity Facility Provider to the Tender Agent.

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 Daily Interest Rate Period or Weekly Interest Rate Period must be delivered to the Tender Agent.

Redemption of the Bonds

Mandatory Sinking Fund Redemption

The Bonds maturing on June 15, 2023 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 June 15 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.

Bonds maturing June 15, 2023

<u>Year</u>	<u>Principal Amount of Mandatory Sinking Fund Redemption</u>
2003	\$5,110,000
2004	905,000
2005	950,000
2006	995,000
2007	1,045,000
2008	1,095,000
2009	1,145,000
2010	1,205,000
2011	1,260,000
2012	41,195,000
2013	43,205,000
2014	45,305,000
2015	47,515,000
2016	98,280,000
2017	11,280,000
2018	11,830,000
2019	12,410,000
2020	13,140,000
2021	13,780,000
2022	14,460,000
2023	15,165,000

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 Daily Interest Rate Period or a Weekly Interest Rate Period, the Bonds will be subject to optional redemption by the City, at any time, in whole or in part, at a redemption price equal to the principal amount thereof plus accrued interest, if any. On the day succeeding the last day of any BIT with respect to any Bond, such Bond shall be subject to optional redemption by the City, in whole or in part, at a redemption price equal to the principal amount thereof.

During any Long-Term Interest Rate Period, the Bonds shall be subject to optional redemption by the City on the first day thereof, in whole or in part, at the redemption price equal to the principal amount thereof, and thereafter, during the periods specified below (or if approved by Bond Counsel, during different periods and at different redemption prices specified in the notice of the City to the Tender Agent given in connection with an election that such Bonds shall bear, or continue to bear, interest at a Long-Term Interest Rate) in whole at any time or in part from time to time, at the redemption prices (expressed as a percentage of principal amount) hereinafter indicated (or specified in the notice of the City to the Tender Agent referenced above), plus accrued interest, if any, to the date fixed for redemption:

**Length of Long-Term
Interest Rate Period
(expressed in years)**

Redemption Price

greater than 15	after 10 years at 102%, declining by 1% every year to 100%
less than or equal to 15 and greater than 10	after 7 years at 102%, declining by 1% every year to 100%
less than or equal to 10 and greater than 7	after 5 years at 102%, declining by 1% every year to 100%
less than or equal to 7 and greater than 4	after 3 years at 101%, declining by 1% every year to 100%
less than or equal to 4	after 2 years at 100%

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, at a redemption price of par, plus accrued interest to the date fixed for redemption. Notwithstanding any other provision of the Variable Rate Securities Agreement, Purchased Bonds shall be redeemed prior to other Variable Rate Series 2003 Bonds.

Notice of Redemption

Notice of redemption of the Bonds shall be mailed by first class mail by the Tender Agent, not less than 30 days nor more than 60 days prior to the date fixed for redemption, to DTC and one or more Information Services (as defined in APPENDIX VIII - "FORM OF CONTINUING 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

<u>Fiscal Year Ending June 30</u>	<u>Aggregate Debt Service On Outstanding Bonds⁽¹⁾</u>	<u>Aggregate Debt Service On Series 2003 Bonds⁽²⁾</u>	<u>Total Debt Service</u>
2003	\$127,150,898	\$ 9,128,468	\$136,279,367
2004	141,223,071	17,907,658	159,130,729
2005	141,079,801	17,911,752	158,991,553
2006	141,637,238	17,913,812	159,551,050
2007	141,633,799	17,918,838	159,552,637
2008	141,638,729	17,921,604	159,560,333
2009	141,630,204	17,922,110	159,552,314
2010	141,615,873	17,930,356	159,546,229
2011	141,605,423	17,930,890	159,536,313
2012	101,525,536	57,808,938	159,334,474
2013	101,873,429	57,956,924	159,830,353
2014	101,835,636	58,104,058	159,939,694
2015	101,899,498	58,266,272	160,165,770
2016	53,661,463	106,883,594	160,545,057
2017	59,640,166	15,441,338	75,081,504
2018	59,645,922	15,481,482	75,127,404
2019	41,351,630	15,526,766	56,878,396
2020	40,964,598	15,695,834	56,660,432
2021	40,959,073	15,741,906	56,700,979
2022	40,964,254	15,799,050	56,763,304
2023	40,965,138	15,850,458	56,815,596
2024	40,967,459		40,967,459
2025	40,964,503		40,964,503
2026	40,968,147		40,968,147
2027	40,965,950		40,965,950
2028	40,967,900		40,967,900
2029	40,967,000		40,967,000
2030	40,963,000		40,963,000
2031	40,963,625		40,963,625
2032	<u>40,964,125</u>		<u>40,964,125</u>
	\$2,413,193,089	\$601,042,108	\$3,014,235,197

⁽¹⁾ Giving effect to the issuance of the Series 2003 Refunding Bonds.

⁽²⁾ Interest calculated at fixed swap rate; actual results may vary.

Book-Entry Only System

General. DTC will act as securities depository for the Bonds. The Bonds initially will be issued as fully-registered securities registered in the name of Cede & Co. (DTC's partnership nominee) or such other name as may be requested by an authorized representative of DTC. One fully-registered Bond certificate will be issued for each maturity of the Bonds, in the aggregate principal amount of such maturity, and will be deposited with DTC.

DTC, the world's largest 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 million issues of U.S. and non-U.S. equity issues, corporate and municipal debt issues, and money market instruments from over 85 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, Government Securities Clearing Corporation, MBS Clearing Corporation, and Emerging Markets Clearing Corporation, (NSCC, GSCC, MBSCC, 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.

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 the 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 the City as soon as possible after the record date. The

Omnibus Proxy assigns Cede & Co.'s consenting or voting rights to those Direct Participants to whose accounts the Bonds are credited on the record date (identified in a listing attached to the Omnibus Proxy).

Redemption proceeds, distributions, and dividend payments on the Bonds will be made to Cede & Co., or such other nominee as may be requested by an authorized representative of DTC. DTC's practice is to credit Direct Participants' accounts upon DTC's receipt of funds and corresponding detail information from the City, on the 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 Trustee, or the City, subject to any statutory or regulatory requirements as may be in effect from time to time. Payment of redemption proceeds, distributions, and dividend payments 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 Trustee, disbursement of such payments to Direct Participants shall be the responsibility of DTC, and disbursement of such payments to the Beneficial Owners shall 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 Trustee. Under such circumstances, in the event that a successor securities 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 transfers through DTC (or a successor securities depository). In that event, Bond certificates will be printed and delivered.

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.

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." 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 Salomon Brothers Holding Company, Inc., as the swap provider, and the Bond Insurer.

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. The figure of \$4,994,000 has been reduced to \$4,137,590 by administrative agreement through Fiscal Year 2003. 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) transfer to the City the amount necessary to pay General Obligation Bonds issued for the Water and Wastewater Systems; (vii) transfer to the Rate Stabilization Fund the amount determined by the Water Commissioner; (viii) 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 (ix) 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.

In estimating debt service requirements on any bond or bonds bearing interest at a variable rate (the “Variable Rate Bonds”) for purposes of 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 twenty-four (24) consecutive calendar months preceding the date of calculation or (ii) if the Variable Rate Bonds were not outstanding during the entire twenty-four (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 (as defined in the General Ordinance).

Rate Covenant

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.

In addition to the rate covenant described above, for each fiscal year ending on or after June 30, 2003, the City has agreed with the Fiscal Agent, for the benefit of Financial Guaranty Insurance Company ("FGIC"), for so long as the Series 1993 Bonds insured by FGIC are outstanding, and for the benefit of Financial Security Assurance Inc. ("FSA"), for so long as the Series 2003 Bonds insured by FSA 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, 2003 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 and FSA only and may be amended or waived by FGIC and FSA in their sole discretion without the consent of holders of the Bonds.

The City has also agreed with the Fiscal Agent, for the benefit of the Bond Insurer, for so long as the Bonds insured by the Bond Insurer are outstanding, to provide the same covenant described above for the benefit of 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 such additional Bonds are to be issued; provided that if interest on such additional 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” for a discussion of the circumstances under which such additional Bonds may be issued under the General Ordinance.

Transfer to an Authority

The City is authorized under the General Ordinance, upon the satisfaction of the conditions specified in the General Ordinance, to convey and assign to a municipal authority or another entity 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.”

BOND INSURANCE

Bond Insurance Policy

Concurrently with the issuance of the Bonds, Financial Security Assurance Inc. (“Financial Security”) will issue its Municipal Bond Insurance Policy for the Bonds (the “Bond Insurance Policy”). 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 Bond Insurance Policy, a specimen copy of which is attached to this Official Statement as APPENDIX VI.

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 is a New York domiciled 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, the Liquidity Facility Provider under

the Liquidity Facility for the Bonds. Dexia, S.A., through its bank subsidiaries, is primarily engaged in the business of public finance in France, Belgium and other European countries. No shareholder of Holdings or Financial Security is liable for the obligations of Financial Security.

At September 30, 2002, Financial Security's total policyholders' surplus and contingency reserves were approximately \$1,728,433,000 and its total unearned premium reserve was approximately \$972,390,000 in accordance with statutory accounting principles. At September 30, 2002, Financial Security's total shareholders' equity was approximately \$1,928,564,000 and its total net unearned premium reserve was approximately \$814,684,000 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. Financial Security makes no representation regarding the Bonds or the advisability of investing in the Bonds. Financial Security makes no representation regarding the Official Statement, nor has it participated in the preparation thereof, except that Financial Security has provided to the City the information presented under this caption for inclusion in the Official Statement.

THE LIQUIDITY FACILITY

Capitalized terms used in this section and not otherwise defined in this Official Statement shall have the meanings assigned to them in the Standby Bond Purchase Agreement.

General

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 owners thereof at a price of 100% of the principal amount plus accrued interest. Any Tendered Bonds that are not remarketed are required to be purchased, subject to certain conditions, by the Liquidity Facility Provider pursuant to the Standby Bond Purchase Agreement among the City, the Tender Agent and the Liquidity Facility Provider (the "Liquidity Facility"). During the term of the Liquidity Facility, the Liquidity Facility will provide funds for the purchase of Bonds which are delivered to the Tender Agent but not remarketed by the Remarketing Agent. In addition, the Liquidity Facility will provide funds for the mandatory purchase of Tendered Bonds (i) upon certain changes in interest rate periods, (ii) upon the expiration (without extension) of the Liquidity Facility, (iii) except as otherwise provided in the Variable Rate Securities Agreement, upon the replacement of the Liquidity Facility with an Alternate Liquidity Facility and (iv) at the direction of the Liquidity Facility Provider following the occurrence of certain Events of Termination or Events of Default, described below, under the Liquidity Facility. The Liquidity Facility will expire on April 1, 2010, unless extended or terminated as described herein. The City has the right and may elect to terminate the Liquidity Facility in its discretion.

Under certain circumstances the obligation of the Liquidity Facility Provider to purchase bonds tendered by the owners thereof or subject to mandatory tender may be terminated or suspended without a purchase by the Liquidity Facility Provider. In such an event, sufficient funds may not be available to purchase Bonds tendered by the Owners thereof or subject to mandatory purchase. In addition, the

Liquidity Facility does not provide security for the payment of principal of or interest or premium, if any, on the Bonds. The Liquidity Facility provides for the purchase of Tendered Bonds only.

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”). For details regarding the Liquidity Facility Provider, see APPENDIX VII – “DESCRIPTION OF LIQUIDITY FACILITY PROVIDER.”

Limitations of Liquidity Facility

The ability to obtain funds under the Liquidity Facility or any substitute facility therefor in accordance with its terms may be limited by federal or state law. Bankruptcy, conservatorship, receivership and similar laws governing financial institutions or any issuer of a liquidity facility may prevent or restrict payment under the Liquidity Facility or any substitute facility therefor. To the extent the short-term rating on the Bonds depends in any manner on the rating of the Liquidity Facility Provider, the short-term ratings on the Bonds could be downgraded or withdrawn if the Liquidity Facility Provider encounters financial difficulties or refuses to perform under the Liquidity Facility.

The obligation of the Liquidity Facility Provider under the Liquidity Facility to purchase Bonds that are not remarketed is subject to the conditions and limitations set forth therein, and is also subject to all rights and defenses available to contracting parties generally. The Liquidity Facility is not a guaranty to pay the purchase price of Bonds tendered for purchase. The Liquidity Facility is a general contract, subject to certain conditions and limitations, and is not a letter of credit. Purchasers of the Bonds should consult their legal counsel for an explanation of the differences between a general contract and a letter of credit or guaranty.

The Liquidity Facility Provider may seek to have any future dispute resolved in court and appealed to final judgment before it performs under the Liquidity Facility. Further, even if the City were to prevail against the Liquidity Facility Provider, a court would not necessarily order the Liquidity Facility Provider to perform under the Liquidity Facility; it could instead award damages for breach of contract to the City. Any such award would not necessarily be in an amount sufficient to pay the purchase price of the Bonds.

Events of Termination, Events of Default, Remedies

The following events constitute Events of Termination or Events of Default under the Liquidity Facility the remedy for which may be the immediate termination or suspension of the Liquidity Facility with no obligation to purchase Bonds under the Liquidity Facility:

Events of Termination. Each of the following shall constitute an “*Event of Termination*” under the Liquidity Facility:

- (i) 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
- (ii) 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 is not valid and binding on the Bond Insurer, or any court or governmental authority 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

(iii) Either (A) the occurrence of a Bond Insurer Event of Insolvency, which includes the occurrence and continuance of one or more of the following events: (I) 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; (II) 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; (III) the consent of the Bond Insurer to any relief referred to in the preceding clause (II) in an involuntary case or other proceeding commenced against it; (IV) the making by the Bond Insurer of an assignment for the benefit of creditors; (V) 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 (a) that is being contested in good faith or (b) 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 (VI) the initiation by the Bond Insurer of any actions to authorize any of the foregoing, or (B) the withdrawal by S&P, Moody's and Fitch of the financial strength rating of the Bond Insurer or the reduction of such rating, in the case of S&P, below BBB-, in the case of Moody's, below Baa3, and in the case of Fitch, below BBB-; or

(iv) 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 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

(v) The Bond Insurer shall fail to maintain a financial strength rating by Moody's of Aa3 (or its equivalent) or higher or by S&P of AA- (or its equivalent) or higher or by Fitch of AA- (or its equivalent) or higher for a period of thirty (30) consecutive days.

Events of Default. Each of the following shall constitute an 'Event of Default' under the Liquidity Facility.

(vi) 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

(vii) Non-payment of certain amounts payable under 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

(viii) Non-payment of any other fees or amounts payable under the Liquidity Facility (together with interest thereon at the Default Rate) within twenty (20) days after written notice thereof to the City, Tender Agent and the Bond Insurer by the Liquidity Facility Provider; or

(ix) The breach by the City of any of the terms or provisions of Section 6.01(c)(i) (in respect of proceeds from the purchases of Bonds under the Liquidity Facility), (g) (in a material respect), (i), (j)(i) (with respect to the Remarketing Agent only) and (l) of the Liquidity Facility; or

(x) 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

(xi) (A) The City shall commence any case, proceeding or other action (I) 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 (II) 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 (B) there shall be commenced against the City any case, proceeding or other action of a nature referred to in clause (A) above which (I) results in an order for such relief or in the appointment of a receiver or similar official or (II) remains undismissed, undischarged or unbonded for a period of sixty (60) days; or (C) 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 (D) 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 (A), (B) or (C) above; or (D) the City shall generally not, or shall be unable to, or shall admit in writing its inability to, pay its debts; or

(xii) Any material provision of the Liquidity Facility, the General Ordinance, the Ninth Supplemental Ordinance, the Bond Committee Determination, the Variable Rate Securities Agreement or the Remarketing Agreement 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 prior written consent of the Liquidity Facility Provider; or

(xiii) The occurrence of any “event of default” as defined in the General Ordinance, the Ninth Supplemental Ordinance, the Bond Committee Determination, the Variable Rate Security Agreement, the Remarketing Agreement or the Bond Insurance Policy (which is not waived pursuant to the terms thereof) which is not otherwise described above, other than the failure of the Liquidity Facility Provider to provide funds for the purchase of tendered Bonds when required by the terms and conditions of the Liquidity Facility; or

(xiv) The City shall have defaulted in the payment or performance of any obligation of a principal amount of \$5,000,000 or more, which constitutes Debt, and such default permits the acceleration of the payment of moneys.

Remedies. If any Event of Termination or Event of Default shall have occurred and be continuing:

(xv) In the case of an Event of Termination specified in clauses (i), (iii) or (iv) above, the Available Commitment and Purchase Period (both as defined in the Liquidity Facility) and the obligation of the Liquidity Facility Provider to purchase Bonds shall immediately terminate without notice or demand (a “*Termination Event*”), and thereafter the Liquidity Facility Provider shall be under no obligation to purchase Bonds. Promptly upon the Liquidity Facility Provider’s obtaining knowledge of such Events of Termination, the 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 Dexia’s obligation to purchase Bonds pursuant to the Liquidity Facility.

(xvi) In the case of an Event of Termination specified in clause (v) or an Event of Default specified in clauses (vii), (viii), (ix) (as it relates to amending the Liquidity Facility), (xi), (xii) or (xiv) above, the Liquidity Facility Provider may terminate the Available Commitment and Purchase Period 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 Purchase Period shall terminate, which date, the Purchase Termination Date, shall be not less than thirty (30) days from the date of receipt of such notice by the Tender Agent. On and after the Purchase Termination Date, the Liquidity Facility Provider shall be under no further obligation to purchase Bonds hereunder.

(xvii) In the case of an Event of Termination specified in clause (ii) above, 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 below. Promptly upon the Liquidity Facility Provider obtaining knowledge of any such Event of Termination specified in clause (ii), 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). Notwithstanding the foregoing, if, upon the earlier of the Stated Expiration Date (as defined under the Liquidity Facility) or the date which is three (3) years after the effective date of suspension of the Liquidity Facility Provider’s obligations, litigation is still pending and a judgment regarding the validity of the Bond Insurance Policy as is the subject of such 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.

(xviii) During the pendency of an Event of Termination described in clause (iii) above (with respect to an order described in clause (a) of the definition of Bond Insurer Event of Insolvency under the Liquidity Facility) or in clause (iv) above (prior to the expiration of the thirty (30) day period specified in clause (iv)) (each a “*Potential Event of Termination*” under the Liquidity Facility), 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. 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; 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 a 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).

(xix) In addition to the rights and remedies set forth in clauses (xv), (xvi), (xvii) and (xviii) above, in the case of any Event of Termination or Event of Default, upon the election of the Liquidity Facility Provider: (i) all amounts payable hereunder (other than payments of principal and redemption price of and interest on the Bonds or payments of Excess Bond Interest) 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 General Ordinance, the Ninth Supplemental Ordinance, the Bond Committee Determination, the Variable Rate Security Agreement, the Remarketing Agreement or 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 hereunder due and payable except as expressly provided herein, or to accelerate the maturity date of any Bonds except as provided in the Variable Rate Securities Agreement. Without limiting the generality of the foregoing, the Liquidity Facility Provider has agreed 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.

Extension, Reduction, Adjustment or Termination of the Liquidity Facility.

The Liquidity Facility will expire on April 1, 2010 unless earlier terminated or, with the consent of the Liquidity Facility Provider in its sole and absolute discretion, extended for an additional period or periods, in each case in accordance with the provisions of the Liquidity Facility.

Upon (i) any redemption, defeasance or other payment of all or any portion of the principal amount of the Bonds or (ii) any purchase by the Liquidity Facility Provider of Bonds tendered or deemed tendered in accordance with the terms of the Variable Rate Securities Agreement, the purchase commitment of the Liquidity Facility Provider under the Liquidity Facility with respect to principal of Bonds shall automatically be reduced by the principal amount of the Bonds so redeemed, defeased or otherwise paid or purchased, as the case may be. The commitment of the Liquidity Facility Provider with respect to interest shall be equal to one hundred and eighty-five (185) days' interest on the principal amount of Bonds (assuming an interest rate of fifteen percent (15%) per annum). The commitment with respect to interest will be adjusted downward by an amount in proportion to the reduction of the commitment as to principal because of the redemption, defeasance or other payment of Bonds or the

purchase by the Liquidity Facility Provider of Bonds tendered or deemed tendered in accordance with the terms of the Variable Rate Securities Agreement.

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." 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 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, 2002 AND 2001” 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:

Kumar Kishinchand was appointed Water Commissioner in January 1992. He is a registered professional engineer and holds a B.S. degree in metallurgical engineering from the University of Maryland. Mr. Kishinchand has served in a variety of positions in government and industry encompassing research and development. Since joining the Water Department in 1968, he has served in increasingly responsible management positions, including Deputy Commissioner, General Manager of the Operations Division and General Manager of the Planning and Engineering Division. From March 2000 to July 2001, Mr. Kishinchand served as the interim President and Chief Executive Officer of the Philadelphia Gas Works reporting to the Philadelphia Facilities Management Corporation Board. He returned to the Water Department in July 2001. Commissioner Kishinchand serves on the Board of Directors of the Association of Metropolitan Sewerage Agencies and is a past President of that organization.

Bernard Brunwasser was appointed Deputy Water Commissioner in August 1999 after serving as 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.

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.

Richard E. Roy was appointed Deputy Water Commissioner in January 1992. He is principally responsible for managing the Water Department's Operations Division. He received a B.S. in Civil Engineering from Worcester Polytechnic Institute and began his employment with the Water Department in 1968. Since his initial appointment, Mr. Roy has held a number of increasingly responsible engineering and managerial positions including service as the manager of the Water Pollution Abatement Program, which included responsibility for the design and construction of the City's three large wastewater treatment plants. Mr. Roy served as Acting Water Commissioner from March 2000 to July 2001 while Kumar Kishinchand served as President and CEO of the Philadelphia Gas Works. He has also served as manager of the Construction Branch in the Planning and Engineering Division.

Stephen J. Ballay was appointed Manager of the Water Department's Information Science & Technology Division in June 2002. He received a B.S. degree in Civil Engineering from Villanova University and an M.S. degree in Civil Engineering from Drexel University, and is a Registered

Professional Engineer. He joined the Water Department in 1964 and worked as a Systems Analyst in both the Engineering Computing Center and Data Management Unit prior to being named Director of Data Management. His most recent positions were Director of the Water Information Center and Manager of Operations and Technical Support.

Joseph S. Clare, III was appointed Administrative Services Director and Assistant General Manager of Finance and Administration in September 1998. Previously, Mr. Clare served 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.

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.

Thomas J. Kulesza, Acting General Manager of Planning and Engineering since January 1992, is a registered professional engineer and holds a B.S. degree in Chemical Engineering, an M.S. in Water Resources Engineering from Villanova University, and an M.B.A. from Temple University. He has held a number of increasingly responsible positions since joining the Water Department in 1968, including Chief of the Industrial Waste Unit, Manager of the Water Treatment Plants and Manager of the Wastewater Treatment Plants. Prior to joining the Water Department, Mr. Kulesza served as an Engineer in the Philadelphia Health Department's Air Management Services Division.

Personnel

As of January 12, 2003, the Water Department employed approximately 2,112 persons, of whom 1,637 are represented by District Council 33, and 269 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 221 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, 2000, each of which will terminate on June 30, 2004.

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. These 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 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 2001, the City paid \$14,920,881 to the Water Department, which represented 3.6% of the Water Department's total revenues for that year. For Fiscal Year 2002, the City's charges from the Water Department were \$18,191,182 which represents 5.0% 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 \$20,412,000 for Fiscal Year 2003. 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 2001 were \$51,660,439. Of this amount, \$42,370,352 was disbursed on a direct appropriation basis throughout Fiscal Year 2001 and \$9,290,087 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 2002 are \$52,260,093. The Engineering Report projects interdepartmental charges to rise from \$47,224,000 in Fiscal Year 2003 to \$54,819,000 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. 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 September 2002, the Water System served approximately 474,000 retail customer accounts through 3,300 miles of mains and provided fire protection through more than 27,800 fire hydrants. In addition, there were, as of November 2002, 16,865 water/wastewater accounts in non-service status due to service shutoffs for non-payment.

The City obtains approximately 56% 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 540 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 million gallons ("MG"). In Fiscal Year 2002, the Water System distributed 95,995 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 2002 was 333.6 MG and occurred on August 9, 2001.

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 their confidence: 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.

Fortunately new industry information has been released that an alternate treatment technology is available for inactivation of *Cryptosporidium*. Researchers have found that low levels of ultraviolet (UV) light tie up certain portions of the protozoan DNA, thus preventing them from replicating. This renders the *Cryptosporidium oocysts* non-infective. With this news, the Water Department changed its research course to investigate ozone for ancillary benefits instead of *Cryptosporidium* inactivation. Although the Water Department continues to conduct UV research on inactivation through its participation in an AWWARF sponsored project, data from water operations, and from source water assessment seem to indicate that the Water Department will be able to meet regulations relative to *Cryptosporidium* without ozone or UV inactivation.

The Water Department is also investigating the biostability of its distributed water and how it controls it. 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 amount of chlorine used 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 also continues to improve its filter performance. The filter 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). 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.

As inspections are completed, a condition history of each infrastructure asset is created and subsequently updated with each re-inspection. CFAP enables the Water Department to gather detailed knowledge about the condition of its capital assets. This assists the plant manager’s decisions in maximizing preventive maintenance, minimizing emergency capital expenditure and planning into the future for capital outlay.

Now that the pilot phase has been completed, development of CFAP at the Baxter Water Treatment Plant and the Southwest Water Pollution Control Plant has begun. The Belmont Water Treatment Plant and the Northeast Water Pollution Control Plant will follow these facilities.

The Pumping Unit is in the process of implementing the Water Department's computerized maintenance management system software to schedule O&M and capital inspections for its 16 pumping stations. Pumping is entering each of their facilities assets into the software and will be completing this over the next two years. Once each facility is completed, CFAP inspections will be identified and an inspection schedule will be developed for each.

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. Each training session includes one day of classroom and one day of "in the tank" identification of concrete structural defects. To date, Southeast Water Pollution Control Plant, Queen Lane Water Treatment Plant and employees at the Facilities Management Unit have participated in these sessions and are implementing this beginning step in the assessment of CFAP infrastructure at the respective facilities. The remaining facilities will be phased into CFAP with full implementation achieved in 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 August 2002, the Wastewater System served approximately 474,000 retail customer accounts.

The Wastewater System consists of three water pollution control plants ("WPCPs"), 16 pumping stations, approximately 2,960 miles of sewers, and a centralized solids 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. 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 remain in effect for a five-year period. These new permits with PaDEP provide flexibility to treat additional flows resulting from efforts to control combined sewer overflows.

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 their high levels of treatment such that they have been recognized by awards from the Association of Metropolitan Sewerage Agencies (“AMSA”). The Northeast WPCP received a Platinum Award for zero NPDES permit violations for five consecutive years for the period of 1997 through 2001. Northeast WPCP has thus joined Southwest WPCP in reaching this milestone. Southwest and Southeast WPCPs received their second consecutive Gold Awards for their performance in calendar year 2001.

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 2003. This has occurred despite wage increases. Optimization in the use of treatment chemicals, electricity usage, staffing levels and improved maintenance management practices have all contributed to this cost containment.

The wastewater improvement program has had the effect of significantly improving the water quality of the Delaware River, thereby fostering the 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 U.S. Environmental Protection Agency (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 EPA’s issuance of permits under the NPDES permitting program. 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 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.

During the development of the renewed operating permit, the Water Department conducted a comprehensive study of air emissions. This study was the basis for a Title V Air Permit, issued by Philadelphia Air Management Services (the "PAMS"), under which the Water Department operates its Southwest plant and the BRC as a potential major source of Volatile Organic Compounds (the "VOCs") and for nitrous oxides (the "Nox"), for which the city is in severe non-attainment. Estimates of emissions are provided annually to PAMS. This air permit also stipulates standards for odor nuisances and violations of the odor standards occur on an infrequent basis.

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 has submitted all necessary information to renew the registration for a new five-year period, the approval of which is pending. 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.

The Water Department also has coverage of its EarthMate 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 EarthMate 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.

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 2003 for the Biosolids Recycling Center are estimated to be approximately \$17,800,000, 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.

The Water Department remains committed to the production and marketing of its biosolids compost as its most environmentally responsible and socially acceptable approach to biosolids management. The Water Department anticipates steady production of the high value screened compost. It is focused on ensuring a consistently good quality compost product for sale in the Delaware Valley, and employs a staff agronomist for compost quality control. A concession contract for compost marketing is held by a marketing company that purchases compost for \$5.00 per ton from the Water Department. This concession contract expires at the end of calendar year 2003, and will be rebid prior to expiration.

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 Committee for Organics Recycling in Pennsylvania (the “CORP”) of the Professional Recyclers of Pennsylvania (the “PROP”).

The Water Department is a pilot agency for the NPB Environmental Management System for Biosolids. This is a comprehensive management structure based both on the Deming model for continual improvement and on the ISO 14001 model for Environmental Management Systems, and modified to be applicable to the unique aspects and impacts of biosolids. To bring itself into conformance with this program, the Water Department is undertaking a variety of activities, including: updating Standard Operating Procedures at the BRC, instituting new internal and external performance auditing systems, expanding public outreach and communication, and developing record and document controls, including documentation of corrective actions. The Water Department’s EMS for Biosolids, when completed in 2004, will be subject to a third-party audit by a specially accredited, independent registrar assigned to the Water Department by the NBP. The certification of the Water Department’s biosolids program is anticipated to significantly improve the credibility and trust by which its biosolids program is held by the public.

While the Water Department has been successful in using Class B biosolids over the last fifteen years, the future viability of Class B programs is in doubt. Over the past two years, agricultural use of biosolids has expanded, but the program for mine reclamation has significantly declined. The mine reclamation program has been affected adversely by public concerns, in part arising from odor nuisance complaints.

Pressure is building on the Water Department and wastewater agencies in Pennsylvania and in some other states to improve the quality of their biosolids. Several local governments have passed ordinances prohibiting the use of Class B biosolids for fertilizer in their jurisdictions. The PaDEP and the EPA provide less public support for land application of Class B biosolids than was the case in the past. These actions have the effect of restricting options for use of Class B biosolids and of urging utilities to move toward production of Class A products meeting stricter pathogen reduction requirements.

The Water Department has begun a formal process to move to Class A biosolids processes. It has entered into a contract with the engineering consultant firm Camp, Dresser & McKee (“CDM”) to assist with procurement of facilities and services for Philadelphia to produce Class A biosolids products. Alternative processes include, for example, fully enclosed composting systems and various heat drying technologies. These alternatives will require new facilities and substantial investment. Based on a limited survey of other utilities, the capital costs for new systems would likely exceed \$60 million. A common factor is that these technologies are new to the Water Department, and present some risk in technology or other operating failures in the selection of any one of them.

In the recent past, the Water Department has had success with technical projects using public/private partnerships to make capital improvements and achieve savings in operations. The

Cogeneration/Backup Power project, which has been in place since 1992, utilized private capital and contract services to save the Water Department \$15 million during the last decade. A private company, O'Brien Energy, built the power stations at two facilities using its funds. It has provided all operating services and has taken the financial risk that the equipment will work when required. In 1997, the Water Department contracted with Itron, Inc. to provide automatic meter reading technology and data retrieval services. Under the terms of that contract, Itron is paid only if it and the meter reading technology perform. Prices for meter reading services are set for a twenty-year period. The Itron system is performing well, and the department anticipates savings of \$25 million over conventional in-house meter reading services. Both projects, while generally very successful, have had problems that could have been serious if the City had played a more traditional role in the management.

The Water Department believes a similar approach can be followed at the BRC facility utilizing a private contractor to operate and make capital improvements to the facility under a long term contract, which would achieve both a Class A product and a cost savings to the department, with the procurement process necessary to select a qualified private contractor. This process is expected to take fifteen months following the completion of the contract with CDM.

Source Water Protection Program. The Water Department's Office of Watersheds Source Water Protection Program (see below, "Office of Watersheds") has completed a source water assessment survey of the Schuylkill and Delaware River watersheds. 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 Philadelphia Suburban Water Company (which, as of a January 1, 2001 merger, is now the Pennsylvania Suburban Water Company) 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 is working together with upstream stakeholders to form new pollution prevention partnerships to address priority issues and areas. 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
- Cleanup of the most polluted detention pond in the city via a partnership with BJ's Wholesale Club in Northeast Philadelphia
- 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 and the American Water Works Association's 2003 Exemplary Source Water Protection Award. 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 newly established organization to combine resources to realize the common goal of watershed protection. The Office of Watersheds is working to formulate watershed management plans for the City's receiving waters through the establishment of watershed partnerships. The 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.

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 178 CSO points in its collection system.

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.

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 PWD'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.

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.

Storm Water 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) hire four crews to locate improper cross connections; (2) inspect at least 2,500 homes per year for cross connections; (3) bear all costs in repairing the cross connection if it is a residential property; and (4) abate all cross connections within 120 days after they have been identified or initiate 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 has chosen to extend the initial permit administratively rather than to issue a new one. The reason for the delay is so that the state can evaluate the new federal Phase II stormwater regulations which will impact most of the surrounding suburban communities starting in 2003, and ensure that there is consistency between the various municipal storm water permits. All of the programs put in place as a result of the initial permit and subsequent Consent Order and Agreement are being continued accordingly.

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_x") 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_x 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 2002, AMS has issued three odor violations at the SW/BRC facility and eighteen violations at the Northeast facility. Due to the high level of 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 \$2 million in 2003 for the addition of odor control chemicals. 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. This past year the Southeast plant was delisted from the Risk Management Plan "RMP" requirements because sodium hypochlorite disinfection was permanently brought on-line.

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 is in the process of eliminating the use of chlorine at its Northeast and Belmont facilities, with sodium hypochlorite becoming the replacement disinfectant (this has already taken place at Southwest).

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 2004 to 2008 and the Water Department 2003 capital budget described below were approved by City Council as part of the City's capital program and capital budget on May 2, 2003. 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 vender payment system, and the plant maintenance management system. The users will also be able to 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 is being 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 2003 through 2008.

**Fiscal Years 2003-2008
Capital Improvement Program**

	<u>Fiscal Year 2003</u> <u>(Budgeted)</u>	<u>Fiscal Year 2004-2008</u> <u>(Planned)</u>
Engineering and Administration	\$18,291,000	\$100,025,000
Improvements to Treatment Plants	\$50,000,000	\$250,000,000
Conveyance System (new and reconstruction)	\$25,090,000	\$125,450,000
Collector System (new and reconstruction)	\$26,120,000	\$130,600,000
Storm Flood Relief	\$4,000,000	\$20,000,000
Vehicles	\$4,000,000	\$20,000,000
Large Meter Replacement	<u>\$300,000</u>	<u>\$1,500,000</u>
Total	<u>\$127,801,000</u>	<u>\$647,575,000</u>

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 January 1, 2004. 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.”

Commonwealth Grants

Pursuant to the Pennsylvania Contribution By Commonwealth to Cost of Abating Pollution Act (“Act 339”), the Water Department receives annual grants from the Commonwealth toward the costs of operating, maintaining, repairing and replacing the Wastewater System equal to 2% of the total cost for the acquisition and construction of eligible wastewater treatment facilities. Costs funded by EPA grants and other reimbursed federal and Commonwealth grant programs are deducted in the calculation of the costs of acquisition and construction. Applications for Act 339 payments are filed on a calendar year basis, and are included in non-operating revenue of the Water Department.

The Act 339 grant is administered by PaDEP. For each calendar year grant application, the PaDEP makes a determination as to the total grant dollars it will pay the Water Department based upon what it deems to be 2% of the Water Department’s eligible Act 339 costs. The Water Department received \$8,034,097.14 in Act 339 grants for calendar year 2001. Calendar year 2001 payments were approved on January 9, 2003 for the Southeast Water Pollution Control Plant and on January 9, 2003 for the Northeast Water Pollution Control Plant and on January 9, 2003 for the Southwest Water Pollution Control Plant. Payments totaling \$7,893,056.94 for these grants were received on January 9, 2003 and January 15, 2003. \$141,040.20 in payments are still due and will be paid in July 2003 when additional appropriations are available.

Calendar year 2000 payments were approved on March 6, 2001 for the Southeast Water Pollution Control Plant and on June 5, 2001 for the Northeast Water Pollution Control Plant and on May 14, 2001 for the Southwest Water Pollution Control Plant. Payments totaling \$7,913,859 for these grants were received on August 2, 2001.

There are currently no appeals or determinations before Pennsylvania’s Department of Environmental Protection for review or adjudication.

On March 4, 2003, Pennsylvania Governor Edward G. Rendell presented his proposed fiscal year 2003-2004 budget to the state legislature. The budget proposal included the elimination of Act 339 annual grants for wastewater systems in the Commonwealth. Both houses of the state legislature have passed the portions of the Governor’s proposed budget that include the elimination of Act 339 funding, however, the Governor has stated publicly that he intends to veto the budget bill as it now stands, either in whole or by line-item. While it is unknown at this time whether the Governor or the legislature will restore Act 339 funding, either in whole or in part, in a new budget bill or through supplemental legislation, Act 339 appropriations have been restored by the legislature in previous years. If Act 339 funding is not restored, non-operating revenue of the Water Department will be reduced by nearly \$8 million annually and projected rate increases beyond Fiscal Year 2004 will need to be adjusted accordingly.

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. On October 11, 2001, the City of Philadelphia reopened its 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 departments and agencies. The Water Department remains in contact with federal, state, and local law enforcement and emergency personnel. The Water Department is currently performing a vulnerability analysis of its entire potable water system. The work is being funded by the EPA and the Water Department is on schedule to deliver its report to the

EPA by 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.

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 general purpose financial statements of The City of Philadelphia contained in The City's Comprehensive Annual Financial Report for Fiscal Years 1997, 1998, 1999, 2000 and 2001 and The City of Philadelphia's basic financial statements for fiscal year 2002. 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)

Operating Revenues:

	<u>1997(a)</u>	<u>1998(a)</u>	<u>1999(a)(b)</u>	<u>2000(a)(b)</u>	<u>2001</u>	<u>2002</u>
1. Sales to General customers	\$287,777	\$285,048	\$289,504	\$294,937	\$318,236	\$308,940
2. Service (Sales) to Other Municipalities	26,247	25,732	26,194	26,132	25,506	24,106
3. Services to Other Philadelphia City Agencies (Includes Fire Protection)	19,071	23,172	19,309	20,033	15,265	18,860
4. Private Fire Connections	834	818	654	662	637	910
5. Industrial Sewage Surcharge	4,810	5,185	6,305	7,195	6,902	5,338
6. Other Operating Revenue	<u>3,548</u>	<u>3,158</u>	<u>2,744</u>	<u>2,339</u>	<u>43,47</u>	<u>4,001</u>
7. Subtotals – Water	111,783	116,984	116,233	119,752	126,104	123,133
8. Wastewater	<u>230,504</u>	<u>226,129</u>	<u>228,477</u>	<u>231,546</u>	<u>244,789</u>	<u>239,022</u>
9. Total Operating Revenue	<u>342,287</u>	<u>343,113</u>	<u>344,710</u>	<u>351,298</u>	<u>370,893</u>	<u>362,155</u>

Operating Expenses:(c)

10. Water	89,748	90,966	92,966	95,583	101,899	101,934
11. Wastewater	<u>124,642</u>	<u>125,163</u>	<u>128,249</u>	<u>130,996</u>	<u>140,718</u>	<u>140,765</u>
12. Total Operating Expenses	<u>214,390</u>	<u>216,129</u>	<u>220,775</u>	<u>226,579</u>	<u>242,617</u>	<u>242,699</u>
13. Excess of Operating Revenues over Operating Expenses	127,897	126,984	123,935	124,719	128,276	119,456

Non-Operating Revenues:

14. Interest on Investments	20,240	33,774	26,570	21,629	26,439	18,917
15. Reimbursements – Pennsylvania Clean Streams Grant	18,730	17,572	8,327	4,708	7,996	7,914
16. Other Non-Operating Revenues	<u>2,704</u>	<u>4,197</u>	<u>1,184</u>	<u>2,970</u>	<u>71</u>	<u>640</u>
17. Total Non-Operating Revenues	<u>41,674</u>	<u>55,543</u>	<u>36,081</u>	<u>29,307</u>	<u>34,506</u>	<u>27,471</u>
18. Excess of Revenues over Expenses before Interest Expenses and Principal Payments on Bonded Indebtedness	169,571	182,527	160,016	154,026	162,782	146,927

Interest Expenses:

19. General Obligation Bonds	646	458	301	168	71	12
20. Revenue Bonds	83,115	80,834	96,779	89,298	88,690	83,730
21. Less: Interest Capitalized						
22. Pennvest Loan	<u>1,135</u>	<u>1,125</u>	<u>1,227</u>	<u>1,267</u>	<u>132</u>	<u>148</u>
23. Total Interest Expenses	<u>84,896</u>	<u>82,417</u>	<u>98,307</u>	<u>90,733</u>	<u>88,893</u>	<u>83,890</u>
24. Excess of Revenues over Expenses Exclusive of Debt Principal Payments	84,675	100,110	61,709	63,293	73,889	63,037
25. Add: Unencumbered Funds Available for Appropriation at Beginning of Fiscal Year	0	0	0	0	0	0
26. Deduct: Debt Principal Payments on Bonded Indebtedness During Fiscal Year	<u>40,993</u>	<u>48,320</u>	<u>51,404</u>	<u>58,999</u>	<u>61,500</u>	<u>63512</u>
27. Net Unapplied Project Revenues	43,682	51,790	10,305	4,294	12,389	-475
28. Deduct: Funds Transferred to General Fund	4,138	4,138	4,138	4,138	4,138	4,138
29. Deduct: Funds Transferred to Residual Fund		1,876	6,023	6,592	6,974	6,608
30. Deduct: Funds Transferred to Capital Account	<u>14,797</u>	<u>15,048</u>	<u>15,560</u>	<u>15,923</u>	<u>15,868</u>	<u>16,050</u>
31. Transfer (TO)/FROM The Rate Stabilization Fund	(20,781)	(30,728)	15,416	22,359	39,369	26,321
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>	<u>0</u>

Debt Service Coverage Ratio:

33. Total Debt Service	1.03	1.04	1.06	1.06	1.07	1.07
34. Revenue Bond Debt Service	1.20	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 1997, 1998, 1999, 2000, 2001 and 2002 (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, 2002 and 2001.”

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

Fiscal Year 1997 includes \$50,807,000.
Fiscal Year 1998 includes \$45,095,000.
Fiscal Year 1999 includes \$44,472,000.
Fiscal Year 2000 includes \$44,949,000.
Fiscal Year 2001 includes \$51,660,000
Fiscal Year 2002 includes \$52,260,000

Analysis of Comparative Statement of Revenues and Expenses

Fiscal Year 1997

Revenues. Total Fiscal Year 1997 Revenues increased by \$6.3 million to \$384 million primarily due to the receipt of \$18.7 million in Clean Stream Grant funds from the Commonwealth for calendar years 1993, 1994 and 1995. During Fiscal Year 1997, the Water Department agreed to reimburse the Philadelphia Housing Authority the sum of \$3.8 million for rescinding the 25% billing discount formerly given to this non-profit agency in settlement of a challenge to the procedures used to reduce this discount in 1994.

Expenses. Fiscal Year 1997 Operating Expenses increased by \$7.3 million to \$214.4 million due to the payment of a one-time \$2 million payroll bonus, \$1.4 million increase in fringe benefit outlays, an additional \$3 million for wastewater plant digester cleanings, as well as additions to the computerized maintenance management system.

In Fiscal Year 1997, a deposit of \$20.8 million was made to the Rate Stabilization Fund from the Revenue Account and a payment of \$14,797,318 was made to the Capital Account from the Revenue Account.

Fiscal Year 1998

Revenues. Total Fiscal Year 1998 Revenues were \$398.7 million due in part to the receipt of \$17.6 million in Clean Streams Grant funds of which \$10 million represented settlement of previous claims. Interest Income for the year rose to \$33.8 million, an increase of \$13.4 million from the previous year.

Expenses. Fiscal Year 1998 Operating Expenses increased by \$1.7 million because of annualized wage and benefit increases, the development of a new billing system and additional costs related to treatment chemicals, fire hydrants and water main valves.

A deposit of \$30.7 million was made to the Rate Stabilization Fund from the Revenue Account and a deposit to the Capital Account from the Revenue Account of \$15,048,295 for Fiscal Year 1998.

Fiscal Year 1999

Revenues. Total Fiscal Year 1999 Revenues decreased by \$2.4 million due to a drop of \$7.2 million in interest income, and a reduction of \$9.2 million in Clean Stream Grant funds from the Commonwealth to reflect the dropping out of settlement claims paid by the Commonwealth the previous year. Offsetting these reductions was a transfer of \$15.4 million from the Rate Stabilization Fund. A discount that the Water Department had provided to the Philadelphia Housing Authority was restructured by City Council in June 1998, which had the result of increasing revenues by more than \$1.5 million in Fiscal Year 1999.

Expenses. Total Fiscal Year 1999 Operating Expenses decreased by \$1.6 million because there was no deposit to the Rate Stabilization Fund. Debt service payments increased by \$19 million as a result of the \$350 million revenue bond sale of November 1997. The Water Department continued to benefit from electric rate reductions begun in Fiscal Year 1996 and the implementation of additional energy conservation initiatives.

In Fiscal Year 1999, as stated above, a withdrawal of \$15.4 million was made from the Rate Stabilization Fund to the Revenue Account. Deposits of \$15.6 million to the Capital Account and \$6 million to the Residual Account were made from the Revenue Account.

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.

Development of Adopted Fiscal Year 2003 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 has presented his operating budget proposal to City Council in January in each of the last eleven fiscal years. 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 2003 in September 2001, 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 2001. 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 2001. The Mayor approved the Water Department's Operating Budget and included it as part of his proposed budget to City Council in January, 2002. After holding public hearings, City Council adopted the Fiscal Year 2003 budget on May 2, 2002.

Development of Proposed Fiscal Year 2004 Budget

As of the date of this printing, the Water Department's Fiscal Year 2004 Operating Budget has followed the same pattern as the Fiscal Year 2003 Operating Budget. The Mayor has approved the Water Department's proposed Fiscal Year 2004 Operating Budget and included it as part of his proposed budget presented to City Council on January 28, 2003. 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 early in the ensuing fiscal year. The Fiscal Year 2003 Operating Budget includes an adjustment to the estimated fund balance at the close of Fiscal Year 2003 due to cancellation of commitments encumbered and not expended in Fiscal Year 2003.

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 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 2003 through Fiscal Year 2008, under the stipulations of the General Ordinance.

TABLE A
PROJECTED REVENUE AND REVENUE REQUIREMENTS
(in thousands of dollars)

Line No.		Fiscal Year Ending June 30					
		2003	2004	2005	2006	2007	2008
OPERATING REVENUE							
1	Water Service - Existing Rates	127,954	129,210	128,918	128,260	127,603	126,945
2	Wastewater Service - Existing Rates	241,223	241,992	242,662	241,557	240,383	239,352
3	Total Service Revenue - Existing Rates	369,177	371,202	371,580	369,817	367,986	366,297
Additional Service Revenue Required:							
	Year	Percent Increase	Months Effective				
4	FY 2004	7.0%	12	25,984	26,011	25,887	25,759
5	FY 2005	6.2%	12		24,651	24,534	24,412
6	FY 2006	6.2%	12			26,055	25,926
7	FY 2007	6.2%	12				27,533
8	FY 2008	6.2%	12				29,106
9	Total Additional Service Revenue Required	0	25,984	50,662	76,476	103,630	132,261
10	Total Water and Wastewater Service Revenue	369,177	397,186	422,242	446,293	471,616	498,558
11	Transfer From (To) Rate Stabilization Fund	8,554	49,718	35,961	23,374	8,685	571
12	Other Operating Revenue (a)						
12	Other Operating Revenue (b)	50,125	12,978	12,935	12,893	12,849	12,807
13	Construction Fund Interest Income	5,400	6,179	7,042	5,029	2,989	4,143
14	Debt Reserve Fund Interest Income	1,035	439	703	703	703	999
15	Operating Fund Interest Income	1,562	1,593	1,616	1,655	1,688	1,692
16	Rate Stabilization Interest Income	3,991	3,103	1,799	895	407	266
17	Revenues	439,844	471,196	482,298	490,842	498,937	519,036
OPERATING EXPENSE							
18	Water & Wastewater Operations	200,368	214,258	219,827	226,274	232,900	239,711
19	Direct Interdepartmental Charges	47,224	54,342	49,517	50,942	52,411	53,921
20	Total Operating Expense	247,592	268,600	269,344	277,216	285,311	293,632
21	NET REVENUES AFTER OPERATIONS	192,252	202,596	212,954	213,626	213,626	225,404
DEBT SERVICE							
Senior Debt Service							
Revenue Bonds							
22	Outstanding Bonds (c)	159,825	159,845	159,876	160,436	160,436	160,446
23	Pennvest Parity Bonds	384	384	384	384	384	384
24	Projected Future Bonds (d)		8,601	17,201	17,201	17,201	27,006
25	Total Senior Debt Service	160,209	168,830	177,461	178,021	178,021	187,836
26	Total Senior Debt Service Coverage	1.20x	1.20x	1.20x	1.20x	1.20x	1.20x
Subordinate Debt Service							
27	Pennvest Subordinate Bonds	1,227	1,227	1,227	1,227	1,227	1,227
28	Total Debt Service on Bonds	161,436	170,057	178,688	179,248	179,248	189,063
29	CAPITAL ACCOUNT DEPOSIT	16,287	16,645	17,003	17,361	17,719	18,077
30	TOTAL COVERAGE (L21/(L28+L29))	1.08x	1.08x	1.08x	1.08x	1.08x	1.08x
RESIDUAL FUND							
31	Beginning of Year Balance	20,600	15,452	11,512	8,803	5,795	2,424
32	Interest Income	323	166	47	0	0	0
Deposits							
33	End of Year Revenue Fund Balance	14,529	15,894	17,244	16,992	16,629	18,214
34	Deposit for Transfer to City General Fund (e)	4,138	4,994	4,994	4,994	4,994	4,994
Less							
35	Transfer to Construction Fund	20,000	20,000	20,000	20,000	20,000	20,000
36	Transfer to City General Fund	4,138	4,994	4,994	4,994	4,994	4,994
37	End of Year Balance	15,452	11,512	8,803	5,795	2,424	638
RATE STABILIZATION FUND							
38	Beginning of Year Balance	135,309	126,755	77,037	41,076	17,702	9,017
39	Deposit From (To) Revenue Fund	(8,554)	(49,718)	(35,961)	(23,374)	(8,685)	(571)
40	End of Year Balance	126,755	77,037	41,076	17,702	9,017	8,446

- (a) Includes other operating and nonoperating income, including interest income on funds and accounts transferable to the Revenue Fund.
(b) Includes a \$28,990,000 net up-front payment on December 9, 2002, as a result of a Swaption agreement related to the Water Department's outstanding Series 1993 and 1995 Bonds.
(c) Assumes a variable rate of 4.00% over the life of the Variable Rate Series 1997B Bonds.
(d) Assumes 5.50% interest, term of 30 years, with level annual principal and interest payments.
(e) Transfer of interest earnings from the Bond Reserve Account must first go to the Residual Fund as shown in Line 34 to satisfy the requirements for the Transfer to the City General Fund, with the balance included in Line 14 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, 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 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 August 24, 2001 the Water Commissioner in his Rate Determination directed that there be a three-phase rate increase. Beginning on September 4, 2001 rates increased an average of approximately 6%. The second phase of the increase took place on July 1, 2002 when rates increased an average of 7%. The third phase of the increase will take place on July 1, 2003 when rates will increase an average of 7%. 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 10.0 thousand cubic feet (Mcf) of water per year, which, based on the current rate schedule, results in an annual charge of \$189.26 for water service and \$315.62 for sewer service, for a total of \$504.88 per year.

On July 1, 2003 these charges will increase to \$207.36 for water service and decrease to \$306.20 for sewer service, for a total of \$513.56 annually.

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 2002 were \$14,920,881. The City is the largest customer of the Water Department, accounting in Fiscal Year 2002 for 5.0% of the Water Department's total revenues. The Water Department projects that the amount billed to the City in Fiscal Year 2003 will be \$17,490,000, which represents 4.7% of total projected revenues. Fiscal Year 2004 payments from the City under then existing rates are estimated to remain stable at \$17,490,000. See APPENDIX IV – "CERTAIN INFORMATION CONCERNING THE CITY OF PHILADELPHIA."

Charges for metered water sales 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 2002 were approximately \$2,560,000. Fiscal Year 2003 payments are projected to be \$3,032,000. The contract for water sales to the Authority expires in 2011.

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 Pennsylvania Suburban Water Company (PSW), 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. During Fiscal Year 2002 this contract resulted in revenues of \$175,835. The Cheltenham interconnection is expected to become operational in March 2003. PSW can draw up to 2.0 MGD on average per day through this point. Sale of water to PSW is expected to generate a total estimated annual revenue of \$2,287,000 under the adopted rates applicable to Fiscal Year 2004.

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 1999 payments totaled \$23,494,000 for operating expenses, depreciation and return on investment for all ten wholesale wastewater customers. Fiscal Year 2000 payments from these wholesale wastewater customers were \$23,512,000, while Fiscal Year 2001 payments were \$21,455,000. Fiscal year 2002 payments were \$19,446,590. Beginning in late Fiscal Year 2003, the Delaware County Regional Sewer Authority is expected to divert approximately 7 MGD of annual average day flow from the Water Department's Southwest WPCP Plant to its own wastewater treatment plant in Delaware County. This is expected to be a permanent diversion with a resultant loss of approximately \$900,000 in annual revenue. Capital contributions from wholesale wastewater customers received by the Water Department as of December 31, 2002 have totaled \$71,254,461.

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

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 and 85.1% in Fiscal 2002. 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. Under an agreement reached in 1992, the head of the Water Revenue Bureau (at that time a Deputy Finance Director) was jointly supervised by the Finance Director and the Water Commissioner. In February 2003, oversight of the Water Revenue Bureau was placed back 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, and to locate the addresses of former owners or customers who have moved and left unpaid balances on their water accounts.

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 455,000 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.

In January 2002 the City decided to halt work on the Customer Data Information System ("CDIS") which was being developed jointly by the Water Department and the Water Revenue Bureau. The City is instead exploring the feasibility of moving to a city-wide Customer Information System ("CIS") which would also have billing capabilities. 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 1997, 1998, 1999, 2000, 2001 and 2002 the Water Department met the new bond coverage requirements with revenue bond debt coverage ratios of 1.20 each year, and total debt service coverage ratios of 1.03, 1.04, 1.06, 1.06, 1.07 and 1.07 respectively. Net revenues after operating expenses exceeded the amounts necessary to manage the senior debt service coverage requirements in Fiscal Years 1997 and 1998, resulting in large deposits to the Rate Stabilization Fund totaling \$51,509,000. Senior debt coverage requirements for Fiscal Years 1999, 2000, 2001 and 2002 resulted in

drawdowns of moneys in the Rate Stabilization Fund of \$15,416,000, \$22,359,000, \$39,368,570 and \$26,321,000, 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 1996 through 2002, 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.

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, 2002, 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 \$4.5 million in Fiscal Year 1997, \$5.3 million in Fiscal Year 1998, \$4.5 million in Fiscal Year 1999, \$4.8 million in Fiscal Year 2000, \$4.2 million in Fiscal Year 2001 and \$3.5 million in Fiscal year 2002. The Water Fund budget for Fiscal Year 2003 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") imposes certain requirements that must be met at and subsequent to the issuance and delivery of the Bonds for interest thereon to be and remain excluded from gross income under section 103 of the Code. These requirements include, but are not limited to, requirements relating to the use and expenditure of gross proceeds of the Bonds, yield and other restrictions on investments of gross proceeds, and the arbitrage rebate requirement that certain excess earnings on gross proceeds be rebated to the federal government. Noncompliance with such requirements could cause the interest on the Bonds to be included in gross income for federal income tax purposes retroactive to the date of issue of the Bonds. The City has covenanted to comply with the applicable requirements of the Code.

In the opinion of Kleinbard, Bell & Brecker LLP and Evans & Borden Evans, LLC, Co-Bond Counsel, under existing law and assuming compliance with the aforementioned covenant, interest on the Bonds is excluded from gross income under section 103 of the Code. Co-Bond Counsel is also of the opinion that the interest on the Bonds will not be treated as a preference item for purposes of computing the alternative minimum tax. Interest on the Bonds owned by certain corporations will, however, be taken into account in the calculation of adjusted current earnings for purposes of calculating the alternative minimum tax imposed on such corporations. Corporate purchasers of the Bonds should consult their tax advisors concerning the computation of any alternative minimum tax.

Prospective purchasers of the Bonds should be aware that ownership of, accrual or receipt of interest on (including accrual of original issue discount) or disposition of tax-exempt obligations may have collateral federal income tax consequences for certain taxpayers, including financial institutions, certain subchapter S corporations, United States branches of foreign corporations, property and casualty insurance companies, individual recipients of Social Security or Railroad retirement benefits, taxpayers eligible for the earned income credit and taxpayers who may be deemed to have incurred or continued indebtedness to purchase or carry tax-exempt obligations. The foregoing is not intended as an exhaustive list of potential tax consequences. Prospective purchasers should consult their tax advisors as to any possible collateral consequences in respect of the Bonds. Co-Bond Counsel expresses no opinion regarding any such collateral consequences.

Co-Bond Counsel has not undertaken to advise in the future whether any events occurring after the date of issuance of the Bonds may affect the tax status of interest on the Bonds. The Internal Revenue Code has been continuously subject to legislative modifications, amendments and revisions and proposals for further changes are regularly submitted by leaders of the legislative and executive branches of the federal government. No representation is made as to the likelihood of such proposals being enacted or if enacted, the effective date of any such legislation and no assurances can be given that such proposals or amendments will not materially and adversely affect the economic value of the Bonds or the tax consequences of ownership of the Bonds.

In the opinion of Co-Bond Counsel, under the laws of the Commonwealth as enacted and construed on the date of issuance of the Bonds, interest on the Bonds is exempt from Pennsylvania personal income tax and corporate net income tax and the Bonds are exempt from personal property taxes in the Commonwealth.

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 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 \$999,239.25 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

Salomon Smith Barney Inc. is the Underwriter of the Bonds. Salomon Smith Barney Inc. is also the initial Remarketing Agent for the Bonds. The Bonds are being issued by the City in conjunction with an interest rate swap agreement between the City and Salomon Brothers Holding Company Inc., an affiliate of Salomon Smith Barney Inc.

The scheduled payment of principal of and interest on the Bonds when due will be guaranteed under an insurance policy to be issued currently with the delivery of the Bonds by Financial Security Assurance Inc. ("FSA"), the Bond Insurer. If any or all of the Bonds cannot be remarketed, such remarketed Bonds are required to be purchased, subject to certain conditions precedent, with funds advanced pursuant to the Standby Bond Purchase Agreement by Dexia Credit Local, acting through its New York Agency ("Dexia"), or the Liquidity Facility Provider. Dexia is a subsidiary of the Dexia Group which acquired Financial Security Assurance Holding's Ltd., the holding company for FSA in 2000.

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 Investors Service, Inc. ("Moody's"), Standard & Poor's Ratings Services ("S&P") and Fitch Ratings ("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 Kleinbard, Bell & Brecker LLP and Evans & Borden Evans, LLC, 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 Law Offices of Denise Joy Smyler, both of Philadelphia, Pennsylvania.

FINANCIAL ADVISORS

P.G. Corbin & Company, 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.

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 entireties together with all foregoing statements in this Official Statement.

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

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 of 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 the Fiscal Agent for the Bonds 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 VIII – “FORM OF CONTINUING DISCLOSURE AGREEMENT” for the detailed provisions of the Continuing Disclosure Agreement.

ADDRESSES OF PRINCIPAL PARTIES

City: The City of Philadelphia
Treasurer’s Office
640 Municipal Services Building
1401 J.F. Kennedy Boulevard
Philadelphia, Pennsylvania 19102-1681
Attention: Finance Director
Telephone: (215) 686-2303
Telecopy: (215) 686-3815

and

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
Telecopy: (215) 568-1947

Financial Office of
Water Department

The City of Philadelphia
Water Department
Aramark Tower
1101 Market Street, 5th Floor
Philadelphia, Pennsylvania 19102
Attention: Deputy Commissioner for Finance
Telephone: (215) 685-6106
Telecopy: (215) 685-4915

Trustee, Tender Agent, Paying
Agent, Registrar and Escrow
Agent:

Wachovia Bank, National Association
123 South Broad Street, 11th Floor
Philadelphia, Pennsylvania 19109
Attention: Corporate Trust Department
Telephone: (215) 670-6303
Telecopy: (215) 670-6337

Liquidity Provider:

Dexia Credit Local, New York Agency
445 Park Avenue, 8th Floor
New York, New York 10022
Attention: First Vice President and Manager, Public Finance
Telephone: (212) 515-7003
Telecopy: (212) 753-5516

Remarketing Agent:

Salomon Smith Barney Inc.
390 Greenwich Street, 5th Floor
New York, New York 10013
Attention: Short-Term Tax-Exempt Trading
Telephone (212) 723-7082
Telecopy: (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
Mayor

By: /s/ Jonathan A. Saidel
City Controller

By: /s/ Nelson A. Diaz
City Solicitor

Approved:

 /s/ Janice D. Davis
Director of Finance

APPENDIX I

**FINANCIAL STATEMENTS OF THE WATER FUND
FOR FISCAL YEARS ENDED JUNE 30, 2002 AND 2001**

[THIS PAGE INTENTIONALLY LEFT BLANK]

**CITY OF PHILADELPHIA
WATER DEPARTMENT**

**2002
FINANCIAL STATEMENTS**

TABLE OF CONTENTS

STATEMENTS

STATEMENT OF NET ASSETS	2
STATEMENT OF REVENUES, EXPENSES AND CHANGES IN FUND NET ASSETS	3
STATEMENT OF CASH FLOWS	4

SCHEDULES

BUDGETARY COMPARISON SCHEDULE -WATER OPERATING FUND	5
BONDED DEBT	6
RATE COVENANT COMPLIANCE	7

NOTES TO FINANCIAL STATEMENTS

Government of Philadelphia	8
Summary of Significant Accounting Policies	8-13
Accounts Receivable	13-14
Property, Plant & Equipment	14
Vacation	15
Sick Leave	15
Capitalized Leases	15
Rate Stabilization Fund	15
Deferred Compensation Fund	16
Arbitrage Rate	16
Defeased Debt	16
Pension Plan	16-19
Post Employment Benefits	19-20
Claims, Litigations, & Contingencies	20-21
Enhanced Security	21
New Accounting Standard	21-22
Interest Rate Swap	22

CITY OF PHILADELPHIA WATER DEPARTMENT

STATEMENT OF NET ASSETS, JUNE 30, 2002 AND 2001

(amounts in thousands)

2002.....2001.....
ASSETS		
Current Assets:		
Cash on Deposit and on Hand	\$38,464	\$39,472
Due From Other Governments	8,107	7,914
Accounts Receivable	170,669	170,321
Allowance for Doubtful Accounts	(106,803)	(107,511)
Inventories	13,347	14,255
Total Current Assets	123,784	124,451
Non-Current Assets		
Restricted Assets:		
Cash on Deposit and On Hand	413,306	271,314
Sinking Funds and Reserves	159,515	148,912
Receivables	6,076	865
Total Restricted Assets	578,897	421,091
Capital Assets:		
Land	5,919	5,919
Water Mains and Sewer Lines	1,507,326	1,447,993
Construction in Progress	101,755	109,582
Buildings and Equipment	1,310,241	1,311,408
Less: Accumulated Depreciation	(1,322,964)	(1,269,910)
Total Capital Assets, Net	1,602,277	1,604,992
Total Non-Current Assets	2,181,174	2,026,083
TOTAL ASSETS	2,304,958	2,150,532
 LIABILITIES		
Current Liabilities:		
Vouchers Payable	5,835	4,379
Accounts Payable	5,696	7,134
Salaries and Wages Payable	3,715	3,635
Construction Contracts Payable	4,162	9,313
Accrued Expenses	26,115	24,480
Deferred Revenue	5,758	5,824
Bonds Payable - Current	65,374	63,541
Total Current Liabilities	116,655	118,306
Non-Current Liabilities:		
Bonds Payable	1,816,791	1,629,197
Unamortized Discount and Loss	(148,486)	(156,804)
Other Non-Current Liabilities	8,636	5,379
Total Non-Current Liabilities	1,676,941	1,477,772
TOTAL LIABILITIES	1,793,596	1,596,078
 NET ASSETS		
Invested in Capital Assets, Net of Related Debt	116,236	165,051
Restricted For:		
Capital Projects	246,199	86,835
Debt Service	161,622	149,012
Rate Stabilization	136,283	153,036
Unrestricted	(148,978)	521
TOTAL NET ASSETS	\$511,362	\$554,455

CITY OF PHILADELPHIA WATER DEPARTMENT

**STATEMENT OF REVENUES, EXPENSES AND CHANGES IN FUND NET ASSETS
FOR THE FISCAL YEAR ENDED JUNE 30, 2002 AND 2001**

(amounts in thousands)

2002.....2001.....
OPERATING REVENUES:		
Charges for Goods and Services	\$346,138	\$331,026
Miscellaneous Operating Revenues	4,815	4,053
Total Operating Revenues	<u>350,953</u>	<u>335,079</u>
OPERATING EXPENSES:		
Personal Services	101,548	102,083
Purchase of Services	55,336	54,608
Materials and Supplies	25,181	22,924
Employee Benefits	40,385	40,002
Indemnities and Taxes	3,815	4,477
Depreciation and Amortization	82,326	86,201
Total Operating Expenses	<u>308,591</u>	<u>310,295</u>
Operating Income (Loss)	<u>42,362</u>	<u>24,784</u>
NON-OPERATING REVENUES (EXPENSES):		
Operating Grants	8,747	7,985
Interest Income	31,835	34,811
Debt Service - Interest	(96,948)	(90,694)
Other Expenses	(22,152)	(984)
Total Non-Operating Revenues (Expenses)	<u>(78,518)</u>	<u>(48,882)</u>
Income (Loss) Before Transfers	(36,156)	(24,098)
Transfers In		617
Transfers Out	(6,937)	(7,160)
Change In Net Assets	<u>(43,093)</u>	<u>(30,641)</u>
Net Assets - Beginning of Period	554,455	585,096
Net Assets - End of Period	<u><u>\$511,362</u></u>	<u><u>\$554,455</u></u>

CITY OF PHILADELPHIA WATER DEPARTMENT

STATEMENT OF CASH FLOWS, JUNE 30, 2002 AND 2001

(amounts in thousands)

Cash flows from Operating Activities:2002....2001....
Receipts from Customers	\$348,305	\$338,242
Payments to Suppliers	(84,157)	(84,607)
Payments to Employees	(140,738)	(133,740)
Internal Activity-Payments to Other Funds		
Claims Paid	(3,542)	(4,477)
Other Receipts (Payments)	995	(157)
Net Cash Provided (Used)	120,863	115,261

Cash Flows from Non-Capital Financing Activities:

Operating Grants Received	8,554	8,068
Operating Subsidies and Transfers (to) Other Funds	(6,936)	(4,138)
Net Cash Provided (Used)	1,618	3,930

Cash Flows from Capital and Related Financing Activities:

Proceeds from Sale of Bonds	230,581	
Contributions Received	3	
Acquisition and Construction of Capital Assets	(92,513)	(90,495)
Interest Paid on Debt Instruments	(83,890)	(88,893)
Principal Paid on Debt Instruments	(63,512)	(61,500)
Other Receipts	(995)	(9,417)
Net Cash Provided (Used)	(10,326)	(250,306)

Cash Flows from Investing Activities:

Interest and Dividends on Investments	28,930	34,811
Net Cash Provided (Used)	28,930	34,811

Net Increase (Decrease) in Cash and Cash Equivale	141,085	(96,303)
Balances - Beginning of the Year	310,685	406,988
Balances - End of the Year	451,770	310,685

Reconciliation of Operating Income (Loss) to

Net Cash Provided (Used) by Operating Activities:

Operating Income (Loss)	\$42,362	\$24,784
Adjustments to Reconcile Operating Income to Net Cash Provided (Used) by Operating Activities		
Depreciation Expense	82,326	86,201
Change in Assets and Liabilities:		
Receivable, Net	(1,249)	2,261
Inventories	908	(694)
Accounts and Other Payables	(3,484)	1,312
Accrued Expenses		1,397
Net Cash Provided by Operating Activities	\$120,863	\$115,261

CITY OF PHILADELPHIA WATER DEPARTMENT

BUDGETARY COMPARISON SCHEDULE

WATER OPERATING FUND

FOR THE FISCAL YEAR ENDED JUNE 30, 2002

(amounts in thousands)

	<u>BUDGETED AMOUNTS</u>			FINAL BUDGET TO ACTUAL FAVORABLE (UNFAVORABLE)
	<u>ORIGINAL</u>	<u>FINAL</u>	<u>ACTUAL</u>	
REVENUES:				
Locally Generated Non-Tax Revenue	\$361,680	\$357,093	\$350,546	(\$6,547)
Revenue from Other Governments	7800	9007	8554	(453)
Revenue from Other Funds	63,228	58,051	45,181	(12,870)
Total Revenues	<u>432,708</u>	<u>424,151</u>	<u>404,281</u>	<u>(19,870)</u>
EXPENDITURES AND ENCUMBRANCES				
Personal Services	97,825	97,225	93,124	4,101
Pension Contributions	15,400	15,400	14,842	558
Other Employee Benefits	25,969	25,969	24,366	1,603
Sub-total Employee Comper	<u>139,194</u>	<u>138,594</u>	<u>132,332</u>	<u>6,262</u>
Purchase of Services	69,751	70,351	64,438	5,913
Materials and Supplies	29,534	29,570	27,852	1,718
Equipment	4,544	4,508	3,333	1,175
Contributions, Indemnities and Taxes	6,522	6,522	3,737	2,785
Debt Service - Principal	63,825	63,825	63,512	313
Debt Service - Interest	93,557	93,557	83,890	9,667
Short-Term Interest	500	500		500
Payments to Other Funds	35,281	35,281	36,853	(1,572)
Total Expenditures and Encumbrance	<u>442,708</u>	<u>442,708</u>	<u>415,947</u>	<u>26,761</u>
Operating Surplus (Deficit) for the Year	<u>(10,000)</u>	<u>(18,557)</u>	<u>(11,666)</u>	<u>(6,891)</u>
Fund Balance Available for Appropriation July 1, 2	-	-	-	-
OPERATIONS IN RESPECT TO PRIOR FISCAL YEARS				
Commitments Cancelled - Net	10,000	10,000	11,668	1,668
Prior Period Adjustment			(2)	(2)
Adjusted Fund Balance, July 1, 20	<u>10,000</u>	<u>10,000</u>	<u>11,666</u>	<u>1,666</u>
Fund Balance Available for Appropriation June 30, 200	<u>\$-</u>	<u>(\$8,557)</u>	<u>\$-</u>	<u>\$8,557</u>

CITY OF PHILADELPHIA WATER DEPARTMENT

BONDED DEBT FOR THE FISCAL YEAR ENDED JUNE 30, 2003

(amounts in thousands)

Series	ORIGINAL AUTHORIZATION		Outstanding June 30, 2002	Maturities	Interest Rates	FISCAL YEAR 2003 Debt Service		Outstanding June 30, 2003
	Date	Issued				Interest	Principal	
Revenue Bonds:								
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	45,840	10/2001 to 10/2004	N.A.		15,335	30,505
Series 1993	8/1/93 *	1,157,585	773,210	6/2002 to 6/2023	5.00 to 10.00	45,722	34,835	738,375
Series 1995	04/15/95	221,630	201,465	8/2001 to 8/2018	5.30 to 6.75	11,785	7,210	194,255
Series 1997 (A)	10/15/97	250,000	237,660	8/2001 to 8/2027	5.00 to 5.125	11,951	4,500	233,160
Series 1997 (B)	11/25/97	100,000	94,600	8/2001 to 8/2027	Variable	3,210	2,000	92,600
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		33,040
Series 2001	11/15/01	285,920	285,920	11/2011 to 11/2024	3.800 to 5.500	14,566		285,920
Penn Vest	04/30/00	6,700	3,359	7/2002 to 6/2019	1.41 to 2.73	45	377	2,982
Total Revenue Bonds		\$2,524,330	\$1,870,679			\$96,028	\$64,257	\$1,806,422
General Obligation Bonds:								
Penn Vest	06/15/93	20,000	11,487	07/2000 to 06/2013	1.00	110	1,117	10,369
TOTAL BONDED DEBT			\$1,882,166			\$96,138	\$65,374	\$1,816,791

* Partially Refunded

ANNUAL BONDED DEBT SERVICE REQUIREMENT:

Fiscal Year	Interest	Principal	Total
2003	96,138	65,374	161,512
2004	93,423	68,085	161,508
2005	90,685	70,696	161,381
2006	85,473	76,482	161,955
2007	81,736	80,232	161,968

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

Capitalized Interest added to Construction in Progress in Fiscal 2002 was \$583,109.00.
Interest Expense was reduced by the same amount.

Note: The June, 30, 2003 Outstanding amount excludes any possible amounts for future bond issues after June 30, 2002, or refundings, defeasances, or other unanticipated debt transactions.

**SUPPLEMENTAL SCHEDULE OF RATE COVENANT COMPLIANCE FOR FISCAL YEAR ENDED
JUNE 30, 2002 (Legally Enacted Basis)**

(amounts in thousands)

Unaudited Amounts-----

LINE NO.2002...
1. Total Revenue and Beginning Fund Balance	390,819
2. Net Operating Expense	(242,942)
3. Transfer (To) From Rate Stabilization Fund	26,321
4. Net Revenues	<u>174,198</u>
 DEBT SERVICE:	
5. Revenue Bonds Outstanding	(145,165)
6. General Obligation Bonds Outstanding	(601)
7. Pennvest Loan	(1,636)
8. Total Debt Service	<u>(147,402)</u>
 9. Net Revenue after Debt Service	 26,796
10. Transfer to General Fund	(4,138)
11. Transfer to Capital Fund	(16,050)
12. Transfer to Residual Fund	(6,608)
13. Total Transfers	<u>(26,796)</u>
 14. Net Operating Balance for Current Year	 <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 into the Debt Reserve Account during such fiscal year; (iii) debt service on all General Obligation Bonds issued for the Water and Wastewater System payable in such fiscal year; (iv) debt service payable on Interim Debt in such fiscal year; and (v) the Capital Account Deposit Amount for such fiscal year, less amounts transferred from the Residual Fund to the Capital Account during such fiscal year. To ensure compliance with the rate covenant, the General Ordinance requires that the City review its rates, rents, fees and charges at least annually.

COVERAGE A:		COVERAGE B:	
Line 4	<u>\$174,198</u>	Line 4	<u>\$174,198</u>
/ Line 5	<u>(\$145,165)</u>	/ (Line 8 + Line 11)	<u>(163,452)</u>
= COVERAGE A:	<u><u>1.20</u></u>	= COVERAGE B:	<u><u>1.07</u></u>

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 recognized under this method approximate the amounts that would be recorded on the accrual basis.

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:

Water Fund	
Fund Balance-Legal Basis 6/30/02	\$ 0
Assets omitted from the legal basis:	
(1) Receivables from Other Governments or Funds	13,865
(2) Fixed Assets-Net of Depreciation	1,602,277
(3) Restricted Assets	<u>578,897</u>
	\$ <u>2,195,039</u>
Liabilities omitted from the legal basis:	
(4) Construction Contracts Payable	(4,162)
(5) Other Current Liabilities	(97,672)
(6) Bonds Payable and Other Long-Term Debt	<u>(1,676,940)</u>
	<u>(1,778,774)</u>
Fund Balance accounts included in the legal basis:	
(7) Reserve for Collectible Receivables	57,867
(8) Reserve for Inventories	13,347
(9) Reserve for Purchase Commitments	<u>23,883</u>
	<u>95,097</u>
Equity accounts omitted from the legal basis:	
(10) Invested in Capital Assets, Net of Related Debt	(116,236)
(11) Restricted for Capital Projects	(246,199)
(12) Restricted for Debt Service	(161,622)
(13) Restricted for Rate Stabilization	<u>(136,283)</u>
	<u>(660,340)</u>
Unrestricted Net Assets – GAAP Basis – 6/30/2002	(\$ <u>148,978</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. Contributed capital from the Environmental Protection Agency is reduced by the depreciation expense on those assets, which were financed by contributed capital. 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.

In the Water Fund, the \$5,000 cost is an increase from fiscal 2001 when capital assets had a cost of \$500 or more. This change results in the write-off to the "Other Expenses" account of \$10.6 million of capital assets in fiscal 2002.

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 2002 was \$583,109.

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, 2002 are included in accounts receivable. An amount for services rendered through June 30, 2002, but not billed, has not been accrued; management believes the net amount, which would be accruable at June 30, 2002 is immaterial, after consideration of the required adjustment for the previous year's accrual. Historically, billings and collections for general customers remain relatively constant, except for periods when there has been a rate change.

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 \$4,137,590 in any fiscal year in “excess interest earnings” as defined by the Rate Covenants under the Ordinance. In fiscal 2002, \$4,137,590 was transferred.

3.ACCOUNTS RECEIVABLE

Balances consisted of the Following:

FISCAL YEAR ENDED JUNE 30, 2002

Accounts Receivable:

Billed in the Last Twelve Months	\$ 50,914,776
Billed in 15-year Cycle Billing	73,448,517
Penalties on Receivables	35,099,835
Other Receivables	<u>11,206,518</u>

Total **\$170,669,646**

Bad Debts Written Off \$ 9,605,261

ALLOWANCE FOR DOUBTFUL ACCOUNTS:

Billed in the Last Twelve Months	\$ 0
Billed in 15-year Cycle Billing	68,164,861
Penalties on Receivables	30,627,648
Other Receivables	<u>8,010,309</u>

TOTAL **\$106,802,818**

FISCAL YEAR ENDED JUNE 30, 2001

Accounts Receivable:

Billed in the Last Twelve Months	\$ 57,156,914
Billed in 15-year Cycle Billing	70,246,692
Penalties on Receivables	31,871,563
Other Receivables	<u>10,658,560</u>

Total **\$169,933,729**

Bad Debts Written Off \$ 8,552,463

ALLOWANCE FOR DOUBTFUL ACCOUNTS:

Billed in the Last Six Months	\$ 0
Billed in 15-year Cycle Billing	70,246,692
Penalties on Receivables	29,028,168
Other Receivables	<u>8,235,800</u>

Total **\$107,510,660**

4.PROPERTY, PLANT AND EQUIPMENT

Property, plant and equipment at June 30, 2002 and 2001 consisted of the following:

Fiscal Years Ended	June 30, 2002	June 30, 2001
Land	\$ 5,919,160	\$ 5,919,160
Buildings and related improvements	1,188,750,548	1,170,056,171
Meters and other improvements	69,057,399	68,495,184
Equipment	52,432,231	72,855,263
Transmission and distribution lines	1,507,326,455	1,447,993,393
Construction in progress	<u>101,755,250</u>	<u>109,582,375</u>
Total	\$2,925,241,043	\$2,874,901,546
Less: Accumulated Depreciation	<u>(1,322,964,420)</u>	<u>(1,269,909,951)</u>
Total	<u>\$1,602,276,623</u>	<u>\$1,604,991,595</u>

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 2001 was \$9,033,745 and in 2002 was \$9,062,928. 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 \$2,529,705 in photocopier and computer equipment in Fiscal 2002. 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 2002 the fund had the following activity:

Balance at July 1, 2001	\$153,035,865
Deposit from Operating Fund	0
Transfer to Operating Fund	(26,321,007)
Interest Earnings	<u>9,568,854</u>
Balance at June 30, 2002	<u>\$136,283,712</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, 2001, 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 2002, \$0 was paid. As of June 30, 2002 the remaining arbitrage liability is \$5,518,698.

11. 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, \$245,540,000 of bonds outstanding are considered defeased.

In November, 2001, the City issued \$35.9 million of Water and Wastewater Revenue Refunding Series 2001B Bonds. The proceeds of these bonds were used to refund a portion of the 1993 Series Water and Wastewater Revenue Bonds maturing from 2012 through 2015 in the amount of \$35.7 million. The cash flows required by the new bonds are \$2.8 million less than the cash flow required by the refunded bonds. The economic gain on the refunding (the adjusted present value of these reduced cash flows) was \$1.6 million. This early extinguishment of debt resulted in an accounting loss of approximately \$3.5 million representing the difference between the reacquisition price of \$38.9 million and the amount of debt extinguished of \$35.7 million (less \$.3 million unamortized discount). The resulting loss will be amortized over the life of the refunded bonds at a rate of \$163,270 annually through June 2023.

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 employee's 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 in the plan as of July 1, 2001 was as follows:

Employee Group	Number
Retirees and beneficiaries currently receiving benefits	33,746
Terminated members entitled to benefits but not yet receiving them	709
Active members	<u>29,322</u>
Total Members	<u>63,777</u>

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)

The total required employer contribution for the current year was 14% of covered payroll of \$1,215.7 million.

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

(c) Annual Pension Cost

The actuarial valuation that was used to compute the current year’s required contribution was performed as of July 1, 2000. Methods and assumptions used for that valuation include:

- The 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

For the current year, the City contributed to the Annual Pension Cost of \$174.2 million. The Annual Pension Cost and related percentage contributed for the three most recent fiscal years are as follows:

<u>Fiscal Year</u> <u>Ended June 30</u>	<u>Annual</u> <u>Required</u> <u>Contribution</u> <u>(In Millions)</u>	<u>Percentage</u> <u>Contributed</u>
2000	\$164.5	100.00%
2001	163.5	100.00%
2002	174.5	100.00%

(d) 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 2,360 eligible retirees amounted to \$15.2 million and \$3.7 million respectively.

14. CLAIMS, LITIGATION AND CONTINGENCIES

A. 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 \$5.4 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 \$5.2 million.

B. 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.

The City is the defendant in the case Waterware Corp v City (Philadelphia Country Court of Common Pleas, November Term, 1999, No. 1382). Plaintiff is the prime contractor on the Water Department's Combined Sewer Overflow Monitoring project, which commenced in 1994, and is not yet complete. This suit seeks damages for wrongful default, extra work, and delay damages in connection with the project. The City believes that the plaintiff's wrongful default claim is unfounded, because the plaintiff's surety agreed to take over the project without protest, and because the City had good and

substantial reasons for its default. Plaintiff's other claims have been unsupported by plaintiff's discovery responses, leading the City to believe that plaintiff may have difficulty supporting its claims at trial. In response to discovery, plaintiff recently submitted its computation of damages in the amount of \$5.5 million. Some items of damage are the responsibility of the surety, while other items of damages are not legally recoverable against the City, limiting the City's potential exposure to significantly less than plaintiff's demand. This matter is in mediation and appears close to a settlement acceptable to the City.

15. ENHANCED SECURITY

In light of the events of September 11, 2001, 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, 2001, 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, 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.

16. NEW ACCOUNTING STANDARD

With this report, the City has changed its financial reporting to comply with The Government Accounting Standards Board's Statement No. 34 "Basic Financial Statements - and Management's Discussion and Analysis - for State and Local Governments." As part of the implementation of GASB Statement No. 34, the Water Fund has eliminated the following equity accounts used in the fiscal 2001 Balance Sheet:

Contributed Capital - Local Sources

Contributed Capital - Other Sources

Unreserved Retained Earnings

The fiscal 2002 Statement of Net Assets has added the following accounts:

Invested in Capital Assets, Net of Related Debt

Restricted for Capital Projects

Restricted for Debt Service

Unrestricted Net Assets

In conjunction with the implementation of GASB 34, the City has also implemented GASB Statement No 38, "Certain Financial Statement Note Disclosures" which rescinds some and modifies other financial statement disclosure requirements and GASB Statement No. 37,"Basic Financial Statements – and Management's Discussion and Analysis - for State and Local Governments: Omnibus – an amendment of GASB Statements No. 21 & No. 34" which clarifies certain provisions that, in retrospect, were not sufficiently clear for consistent application and modifies other provisions that the Board believes may have unintended consequences in some circumstances. Implementation of these GASB Statements did not result in a change in beginning fund balance as reported in the fund financial statements on the modified accrual basis of accounting.

Government-wide financial statements. The government-wide financial statements report information about the city as a whole using accounting methods similar to those used by a private sector business. The two statements presented are:

The statement of net assets which includes all of the city's assets and liabilities, with the difference between the two reported as net assets. Over time, increases and decreases in net assets are an indicator of whether the city's financial position is improving or deteriorating.

The statement of activities presents revenues and expenses and their effect of the change in the city's net assets during the current fiscal year. These changes in net assets are recorded as soon as the underlying event giving rise to the change occurs, regardless of when cash is received or paid.

17. INTEREST RATE SWAP

Approximately \$467 million of Water and Wastewater Series 1993 and 1995 Bonds are callable on March 18, 2003 and May 4, 2005 at 102% of par. A brokerage house agreed to pay an up-front premium for an interest rate "swaption" that represents savings of 5.5% of the refunded par amount of the bonds. An advance refund is not available since the bonds are subject to Alternative minimum Tax. Executing the swaption allowed the City to synthetically capture the debt service savings of the refunding. The brokerage house paid the City for the right, but not the obligation to swap the interest rates. The brokerage house must notify the City of their intention to exercise the swaption. The City realized 29.0 million from the transaction in December, 2002.

APPENDIX II
ENGINEERING REPORT

[THIS PAGE INTENTIONALLY LEFT BLANK]



BLACK & VEATCH

11401 Lamar Avenue
Overland Park, KS 66211 USA

Black & Veatch Corporation

Tel: (913) 458-2000

March 20, 2003

Ms. Janice D. Davis
Director of Finance
City of Philadelphia
Room 1330, Municipal Services Building
1401 John F. Kennedy Boulevard
Philadelphia, PA 19102-1693

Dear Ms. Davis:

Subsequent to the finalization of our Engineering Report update letter dated February 28, 2003, Pennsylvania Governor Edward G. Rendell presented his proposed fiscal year 2003-2004 budget to the state legislature. This budget included the elimination of Act 339 annual grants for wastewater systems in the Commonwealth. Both houses of the state legislature have passed those portions of the proposed budget that included the elimination of Act 339 grant funding. The Governor has not approved the budget as adopted and has threatened to veto it. For the Philadelphia Water Department, the revenues from Act 339, or the Clean Streams grants as they are commonly called, are reflected in our February 28 report in the amount of \$8,000,000 annually.

It is our understanding that there may be actions taken that will result in the restoration of Act 339 in the final budget for the Commonwealth, as there is an historic precedent for this course of action. However, in the event that Act 339 is not reinstated, we have prepared a revised financial projection for the period of fiscal years 2003 through 2008, the same period as covered in our February 28 report. This revised projection, which excludes the Clean Streams grant funds of \$8,000,000 in each of the fiscal years 2004 through 2008, is shown in the attached Table A. The result of this reduction in Clean Streams grant funds changes the annual revenue increases projected for fiscal years 2005 through 2008 from a level of 5.3 percent for each of these years to a level of 6.2 percent for each year.

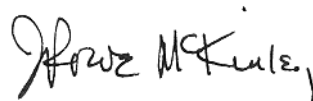
The typical bill for a residential customer with a 5/8-inch meter using 10 Mcf (thousands of cubic feet) per year amounts to \$513.56 annually under the water and wastewater rates that are scheduled to become effective on July 1, 2003. By the end of the projection period shown in the attached Table A, fiscal year 2008, the increase on this typical residential water and wastewater bill of potentially losing all of the Act 339 grant funding would amount to less than \$2.00 per month.

March 20, 2003

On the basis of this updated analysis regarding the potential loss in Act 339 funding, we offer the same statements and conclusions as set forth in our letter of February 28, 2003, with regard to the City's conformance with specific requirements which must be met for the issuance of the Series 2003 Bonds, as stipulated in the Act and the General Ordinance.

Very truly yours,

BLACK & VEATCH CORPORATION

A handwritten signature in black ink, appearing to read "J. Rowe McKinley". The signature is written in a cursive style with a prominent initial "J" and a trailing flourish.

J. Rowe McKinley
Director

JRM:jjt

Enclosure

TABLE A

PROJECTED REVENUE AND REVENUE REQUIREMENTS

(in thousands of dollars)

Line No.		Fiscal Year Ending June 30							
		2003	2004	2005	2006	2007	2008		
OPERATING REVENUE									
1	Water Service - Existing Rates	127,954	129,210	128,918	128,260	127,603	126,945		
2	Wastewater Service - Existing Rates	241,223	241,992	242,662	241,557	240,383	239,352		
3	Total Service Revenue - Existing Rates	<u>369,177</u>	<u>371,202</u>	<u>371,580</u>	<u>369,817</u>	<u>367,986</u>	<u>366,297</u>		
Additional Service Revenue Required:									
	Year	Percent Increase	Months Effective						
4	FY 2004	7.0%	12	25,984	26,011	25,759	25,641		
5	FY 2005	6.2%	12	24,651	24,534	24,412	24,300		
6	FY 2006	6.2%	12		26,055	25,926	25,807		
7	FY 2007	6.2%	12			27,533	27,407		
8	FY 2008	6.2%	12				29,106		
9	Total Additional Service Revenue Required			<u>0</u>	<u>25,984</u>	<u>50,662</u>	<u>76,476</u>	<u>103,630</u>	<u>132,261</u>
10	Total Water and Wastewater Service Revenue	<u>369,177</u>	<u>397,186</u>	<u>422,242</u>	<u>446,293</u>	<u>471,616</u>	<u>498,558</u>		
11	Transfer From (To) Rate Stabilization Fund	8,554	49,718	35,961	23,374	8,685	571		
	Other Income (a)								
12	Other Operating Revenue (b)	50,125	12,978	12,935	12,893	12,849	12,807		
13	Construction Fund Interest Income	5,400	6,179	7,042	5,029	2,989	4,143		
14	Debt Reserve Fund Interest Income	1,035	439	703	703	703	999		
15	Operating Fund Interest Income	1,562	1,593	1,616	1,655	1,688	1,692		
16	Rate Stabilization Interest Income	3,991	3,103	1,799	895	407	266		
17	Revenues	<u>439,844</u>	<u>471,196</u>	<u>482,298</u>	<u>490,842</u>	<u>498,937</u>	<u>519,036</u>		
OPERATING EXPENSE									
18	Water & Wastewater Operations	200,368	214,258	219,827	226,274	232,900	239,711		
19	Direct Interdepartmental Charges	47,224	54,342	49,517	50,942	52,411	53,921		
20	Total Operating Expense	<u>247,592</u>	<u>268,600</u>	<u>269,344</u>	<u>277,216</u>	<u>285,311</u>	<u>293,632</u>		
21	NET REVENUES AFTER OPERATIONS	<u>192,252</u>	<u>202,596</u>	<u>212,954</u>	<u>213,626</u>	<u>213,626</u>	<u>225,404</u>		
DEBT SERVICE									
Senior Debt Service									
Revenue Bonds									
22	Outstanding Bonds (c)	159,825	159,845	159,876	160,436	160,436	160,446		
23	Pennvest Parity Bonds	384	384	384	384	384	384		
24	Projected Future Bonds (d)		8,601	17,201	17,201	17,201	27,006		
25	Total Senior Debt Service	<u>160,209</u>	<u>168,830</u>	<u>177,461</u>	<u>178,021</u>	<u>178,021</u>	<u>187,836</u>		
26	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									
27	Pennvest Subordinate Bonds	1,227	1,227	1,227	1,227	1,227	1,227		
28	Total Debt Service on Bonds	<u>161,436</u>	<u>170,057</u>	<u>178,688</u>	<u>179,248</u>	<u>179,248</u>	<u>189,063</u>		
29	CAPITAL ACCOUNT DEPOSIT	16,287	16,645	17,003	17,361	17,719	18,077		
30	TOTAL COVERAGE (L21/(L28+L29))	1.08 x	1.08 x	1.08 x	1.08 x	1.08 x	1.08 x		
RESIDUAL FUND									
31	Beginning of Year Balance	20,600	15,452	11,512	8,803	5,795	2,424		
32	Interest Income	323	166	47	0	0	0		
Deposits									
33	End of Year Revenue Fund Balance	14,529	15,894	17,244	16,992	16,629	18,214		
34	Deposit for Transfer to City General Fund (e)	4,138	4,994	4,994	4,994	4,994	4,994		
Less									
35	Transfer to Construction Fund	20,000	20,000	20,000	20,000	20,000	20,000		
36	Transfer to City General Fund	4,138	4,994	4,994	4,994	4,994	4,994		
37	End of Year Balance	<u>15,452</u>	<u>11,512</u>	<u>8,803</u>	<u>5,795</u>	<u>2,424</u>	<u>638</u>		
RATE STABILIZATION FUND									
38	Beginning of Year Balance	135,309	126,755	77,037	41,076	17,702	9,017		
39	Deposit From (To) Revenue Fund	(8,554)	(49,718)	(35,961)	(23,374)	(8,685)	(571)		
40	End of Year Balance	<u>126,755</u>	<u>77,037</u>	<u>41,076</u>	<u>17,702</u>	<u>9,017</u>	<u>8,446</u>		

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

(b) Includes a \$28,990,000 net up-front payment on December 9, 2002, as a result of a Swaption agreement related to the Water Department's outstanding Series 1993 and 1995 Bonds.

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

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

(e) Transfer of interest earnings from the Bond Reserve Account must first go to the Residual Fund as shown in Line 34 to satisfy the requirements for the Transfer to the City General Fund, with the balance included in Line 14 going to the Revenue Fund



BLACK & VEATCH

11401 Lamar Avenue
Overland Park, KS 66211 USA

Black & Veatch Corporation

Tel: (913) 458-2000

February 28, 2003

Ms. Janice D. Davis
Director of Finance
City of Philadelphia
Room 1330, Municipal Services Building
1401 J.F. Kennedy Boulevard
Philadelphia, PA 19102-1693

Dear Ms. Davis:

In accordance with the requirements of The First Class City Revenue Bond Act (the Act), the Restated General Water and Wastewater Revenue Bonds Ordinance of 1989, and the amendments and supplements thereto as set forth in the First, Second, Third, Fourth, Fifth, Sixth, Seventh, Eighth, and Ninth Supplemental Ordinances (together the General Ordinance), we are submitting herewith our Engineering Report prepared in connection with the issuance of Water and Wastewater Revenue Refunding Bonds, Variable Rate Series 2003 (the Series 2003 Bonds). Unless otherwise indicated, capitalized terms used but not defined herein shall have the same meanings assigned to such terms in the General Ordinance.

This report provides an updated status of the operations and financial projections of the Water Department relative to our Engineering Report dated November 15, 2001, prepared in conjunction with the issuance of Water and Wastewater Revenue Bonds, Series 2001A and Water and Wastewater Refunding Bonds, Series of 2001B. This report, in conjunction with the aforementioned document, constitutes the Engineering Report for the issuance of the Series 2003 Bonds.

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 months of January and February 2003. 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 Engineering Report dated November 15, 2001. An updated summary table of projected revenues and revenue requirements for the Water Department for the six-year period of fiscal years 2003 through 2008 is included at the end of this report.

February 28, 2003

Organization and Management

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. However, starting in 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.

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 all 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. Initial decisions made by Water Department management include the elimination of 17 positions that will be retired as part of the DROP program in fiscal year 2004.

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.

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.

February 28, 2003

Office of Watersheds

Since it was created in 1999, the Water Department's Office of Watersheds has successfully implemented a comprehensive, environmental approach to water resources management. This approach integrates combined sewer overflow, stormwater, and source water protection programs with other partnerships on a watershed basis. Some of the more unique projects and programs being conducted by or in collaboration with the Office of Watersheds are briefly identified below.

- Source Water Assessment – This very large and significant project involves 50 surface water intakes on the Schuylkill and Delaware Rivers. The project, scheduled to be complete by September 2003, 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 is designing and re-constructing a fish ladder on the Schuylkill River expected to increase the number of fish above the dam by a factor of ten.
- Source Water Protection Early Warning System – Through a \$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 will be 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

February 28, 2003

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.

The Office of Watersheds' watershed management program has been recognized by both the PaDEP and the US EPA as a success on both a regional and national level, and 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. Some of the recent awards received are briefly highlighted below.

- Government Award - received from the Water Resources Association of the Delaware River Basin in April 2000 for outstanding efforts in programs to protect and preserve source waters and watersheds in the Delaware River Basin.
- Source Water Protection Award – received from US EPA Region III in 2002, for exemplifying good stewardship of the region's resources and drinking water supplies through implementation of innovative source water protection programs.
- AWWA Exemplary Source Water Protection Award – This award received in the large surface water system category, will be presented to the Water Department at the AWWA annual conference in June 2003.
- Clean Water Partner Award for the 21st Century – received from US EPA for extraordinary achievement in watershed protection, this award will be presented to the Water Department in February 2003.

The Office of Watersheds has been successful in acquiring substantial grant funds for its projects. Currently, their projects are funded at a level in excess of \$4,000,000 from outside sources. They have grant applications or plans to access an additional \$8,000,000 in outside funding over the next three years.

Information Science and Technology Division

The new Customer Billing System being developed by the Water Department's Information Science and Technology Division was discontinued late in 2001, by the Mayor's Office of Information Systems (MOIS). MOIS has been given the responsibility to review and approve all computer hardware and software acquisitions in the City, and may consolidate all City Information Processing into one department. MOIS plans to implement a City-wide Customer Information Work Order Management System that would include customer-billing capabilities to provide a uniform system for all City Departments. MOIS has selected the software that they intend to use, and are currently assessing how best to implement this

February 28, 2003

program. The Water Department continues to effectively utilize their existing billing system software.

The Geographic Information System (GIS) function in the Water Department was transferred to the Planning and Engineering Division in fiscal year 2003. This group had progressed from developing GIS capabilities and databases of information to the point where they are now able to provide services mainly supporting the Planning and Engineering and Operations Divisions. They are completing input of all distribution field data, and will be assisting the Operations Division in evaluating and pilot testing a hydraulic model during fiscal year 2004.

Public Affairs

The Public Affairs Division has been responsible for the Water Department's publications and extended outreach programs. They have 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. They have secured significant financial assistance from various organizations in the Delaware Valley in support of their efforts, including the US EPA, Delaware River Port Authority, and the Pennsylvania Departments of Environmental Protection and Conservation and Natural Resources.

Among the many projects developed and being implemented is the Fairmount Water Works Interpretive Center, scheduled to open in September 2003. The Center will trace the history of the Schuylkill River and illustrate the complicated relationship of human civilization and the river. The Center will be staffed by six environmentally trained personnel and feature: exhibits on the urban watershed; a Water Laboratory; a classroom and audio-visual theater; interpretive displays; a watershed technology center and will be able to accommodate 100,000 visitors yearly. 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.

In fiscal year 2003, the Philadelphia Inquirer newspaper will begin distribution of the Water Department's Consumer Confidence Report. This will more than double the number of consumers who will receive this report on Drinking Water Quality. Annual distribution of this report is required by the Safe Drinking Water Act, and this innovative method of printing and distributing it will save the Water Department approximately \$90,000 annually. A version of the report is also available in Spanish.

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.

February 28, 2003

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. During fiscal year 2002 the unit received 248,214 calls, an increase of 31.6 percent compared to fiscal year 2000, with an average wait time of only 11 seconds.

Security

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 created the need to undertake formidable efforts 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 and Biosolids Recycling Center, and at 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.

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 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 US 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, and it will be submitted to the EPA Administrator by March 31, 2003 as required. The Water Department will begin to implement operational recommendations in the Vulnerability

February 28, 2003

Assessment report, and budget for any Capital Improvements required to upgrade the facilities to meet the recommended upgrades or improvements.

CFAP

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.

Water System

The Water Department produced and distributed an average of 263 million gallons per day (mgd) during fiscal year 2002. This quantity is somewhat lower than that from fiscal year 2001 and continues the downward trend of recent years, reflecting the City's population decline, reduction in system leakage and a modest reduction in average residential usage. Although Philadelphia did not have any water supply problems during the drought experienced in the region during the summer and fall of 2002, the PaDEP required the Water Department to comply with the regional drought restrictions on water use. During this period, the Water Department supplied additional water to wholesale customers who were suffering severe supply problems.

The Water Department continues to consistently meet all requirements of the Safe Drinking Water Act. Since receiving Certification for Phase III in the Partnership for Safe Water Program at all three water treatment plants, the Water Department continues to make process changes and facility improvements, which enable it to achieve superior performance from each individual filter, thus exceeding the Partnership criteria. These improvements also enabled the Water Department to meet the requirements of the new Interim Enhanced Surface Water Treatment Rule, with its tightened turbidity performance criteria and required individual filter monitoring, optimized treatment reliability, and enhanced physical removal efficiencies to assure the removal of *Cryptosporidium* cysts from finished water.

The Water Department is also in full compliance with the new Stage 1 Disinfectants and Disinfection Byproducts Rule. The Partnership Program has recently finalized data collection and reporting requirements for Phase IV of their program to become certified in

February 28, 2003

the Excellence in Water Treatment category. The Water Department has begun the process of data collection to enable each of their plants to be certified in this highest performance category.

Based on their water quality database, the Water Department anticipates that they will be in full compliance with the next phase of the requirements of the proposed EPA Long Term 2 Enhanced Surface Water Treatment Rule and Stage 2 Disinfectants and Disinfectant Byproducts Rule. The Water Department continues to conduct pilot plant studies to optimize the treatment processes and reduce the levels of regulated parameters. Based on these pilot plant studies, new and modified chemical storage and feed systems have been designed and constructed to implement changes in the points of prechlorination. These changes will also optimize pH adjustment to further improve the removal of total organic carbon, reduce the levels of disinfection by-product precursors, and reduce the turbidity levels in their finished water.

The Water Treatment Section recently implemented an annual training program for operators and maintenance staff to update and improve their knowledge and capabilities of the new regulations, and the new processes and equipment that they are using. Instructors included Section management, Department trainers, and outside technical experts. The training program will be extended to include Wastewater Treatment Section staff in the spring 2003.

The Water Department completed their interconnection with Philadelphia Suburban Water Company near the Philadelphia International Airport in 2002, and this connection was used to supply water in excess of the contract limit during the drought experienced during 2002. An additional connection with Philadelphia Suburban Water in the northwest part of the City is expected to be completed in March 2003.

Construction of the new Belmont High Service facilities was completed in March 2002. This facility provides the capability to supply water throughout all of West Philadelphia from the Queen Lane and Baxter Water Treatment Plants if the availability of raw water supply from the Schuylkill River were compromised or if the plant should have to shut down for any reason. This facility provides redundancy in water delivery capability system wide.

Data gathered during extreme summer heat in 2002 validates the effectiveness of the hydrant Center Compression Lock (CCL) used by the Water Department. Despite several consecutive days of 100-degree heat, peak flows were contained to such moderate levels that no additional peak pumping was required. The Water Department has decided to purchase all new fire hydrants with a CCL device. Currently over 50 percent of the hydrants have locking devices installed, and this program will provide the extra security of having 100 percent of the hydrants with this protection when fully implemented.

After the successful two-year installation of Automated Meter Reading (AMR) devices at over 400,000 residential properties in 1999, the AMR program has steadily continued in its second phase of installations at residential properties not accessible in the first phase as well

February 28, 2003

as large (commercial, industrial) accounts and City properties. As of the end of fiscal year 2002, almost 70 percent of large meter accounts are now AMR active.

Leakage reduction efforts continued to be successful with results similar to those achieved in recent years. Since 1992 unbilled water in Philadelphia has been cut by more than one third as a result of the Water Department's aggressive leak detection and abatement efforts. The Water Department has also initiated a program to install water meters at all City facilities, which will further reduce non-revenue water quantities.

The Water Department repaired 522 main breaks in fiscal year 2002 (the second lowest total in the past 20 years) and over 2,400 leaks. In addition, 518 customers took advantage of the Water Department's assistance program to have repairs conducted on their leaking water service lines.

The City's Revenue Protection Program again made significant water and revenue recoveries in fiscal year 2002. In the three full years that this program has functioned, recoveries totaling over six million dollars have been achieved.

Wastewater System

The overall record of performance of the three water pollution control plants (WPCP) has continued to be outstanding. An exceptional record of no plant effluent permit violations, has allowed the Water Department to receive the Gold Award for all three plants from the Association of Metropolitan Sewerage Agencies (AMSA) for a number of years in succession. For year 2001 performance, Gold Awards were granted to both the Southeast and Southwest Plants, while the Northeast Plant earned a Platinum Award. The Platinum Award is given after five consecutive years of no effluent permit violations.

For year 2002, the Southeast and Northeast Plants again had no violations of their NPDES permits; however, in December 2002, the Southwest Plant encountered the first effluent violation of its permit since mid-1994. The 2002 performance record will again make the Southeast and Northeast Plants eligible for AMSA Gold Awards while the Southwest Plant will qualify for a Silver Award. The Water Department is currently investigating the cause of the Southwest Plant permit violation, focusing its review primarily on a certain industrial discharge event to the plant. Efforts to prevent re-occurrence of the permit violation are being made, including a comprehensive review of the industrial waste discharge permit and monitoring and communications protocols.

The Southeast Plant has eliminated its gaseous chlorine disinfection system and converted to liquid sodium hypochlorite. This has resulted in significant reduction of risk management planning, training and associated activities that had been required for gaseous chlorine. Plant staff installed a temporary liquid sodium hypochlorite system in early 2002, and the permanent system is currently under construction. The Southeast Plant has continued to achieve reductions in electrical power usage. Electrical power demand and power

February 28, 2003

consumption reductions in fiscal year 2002 over those in fiscal year 2001 were approximately seven percent and resulted in a savings of approximately \$100,000.

The Northeast Plant has switched from gaseous chlorine disinfection to liquid sodium hypochlorite. The new system is under construction and scheduled to be completed during the summer of 2003. The Water Department has had a long-standing commitment to managing odor emissions from the Northeast Plant. The odor minimization program is multi-faceted including: a proactive approach by plant staff in quickly addressing odor complaints; a good rapport with the neighboring community and with Air Management Services (AMS) staff; the use of odor control chemicals for treatment of odors and regular meetings of the Water Department's Odor Committee.

Due to increased odor violations at the Northeast Plant during 2002, the Water Department performed extensive pilot plant and full-scale testing at the plant to develop an effective strategy for minimizing odors from this facility. Sodium permanganate was selected for addition to the plant's aeration system, and the Water Department has committed to continuous operation of this new system from March 15 to November 15 annually, starting in March 2003. It is believed that the sodium permanganate will control odors at the plant, preventing them from becoming a nuisance beyond the property line. The estimated cost for the sodium permanganate is approximately 2.4 million dollars annually. The Water Department is also commissioning an independent study at the plant to determine the causes and mechanisms of odor formation including review of plant operations. The study is anticipated to commence in April 2003, and should be completed by December 2003.

Southwest Plant staff have implemented improvements to the plant's grit handling and scum collection systems which will make both of these process systems more efficient and will greatly reduce manual labor required to operate and maintain them. The Southwest Plant recently completed its digester heating system modification project allowing the Water Department to realize increased savings in fuel oil costs. Fuel oil savings associated with these latest improvements are estimated at \$100,000 annually.

The Biosolids Recycling Center (BRC) continues to recycle a high percentage of its biosolids into environmentally beneficial uses, such as strip mine reclamation, agricultural applications and commercial gardening. In fiscal year 2002, 76 percent of the biosolids were utilized in these programs. The Water Department continues to study industry trends for biosolids products and forecasts a greater demand for Class A biosolids. Conversion of BRC processing facilities to accommodate 100 percent Class A products would require major revamping and would be capital intensive.

An alternate approach is the privatization of the BRC operations under a long-term contract arrangement. To determine whether privatization offers financial advantages as well as biosolids processing and product utilization benefits, the Water Department will soon develop a Request for Qualifications and Proposals for interested private sector firms. Private sector firms will use the proposals to develop their plans for modifying and converting the

February 28, 2003

BRC facilities to enable full production of Class A biosolids products. The qualifications and proposal phase is estimated to take at least one year.

NPDES Permit Activities

The three WPCPs have continued to maintain an effective chlorine minimization program, which has reduced disinfection chlorine dosages, thereby decreasing the toxic affect on aquatic life in the receiving stream, while maintaining NPDES discharge limits. The reduced quantities of chlorine usage have also allowed the Water Department to achieve significant chemical cost reductions. In parallel to the chlorine minimization program, the current NPDES permits would require the plants' total residual chlorine (TRC) effluent concentrations to decrease substantially during years 3, 4 and 5 of the permits if the Water Department had decided not to conduct site-specific water quality studies. On January 2002, the Water Department submitted a report to PaDEP with its findings and requested that the NPDES permit TRC limit for the three WPCPs be set at 0.5 mg/l, a value both within the findings of the Water Department's water quality studies and also achievable by the plants' existing technology. At this time, the PaDEP has not yet responded to this request.

In accordance with the NPDES permit requirements, the Water Department performed a re-evaluation of the local limits of its industrial pretreatment program. The report related to these findings, submitted to EPA in July 2001, concluded that the local limits did not need further adjustment at this time. EPA has responded to the evaluation requiring some further assessments. Upon completion of these assessments, the Water Department believes that EPA will accept the assessment findings as fulfilling the permit requirements.

The Water Department continues to undertake the requirements of the CSO Program's Long Term Control Plan (LTCP). The Phase II capital improvement program has identified a series of projects with a total capital budget of approximately \$48,000,000. Some of these projects are completed and others are in progress. All projects are scheduled to be completed by the end of 2004. Significant activity is also being devoted to Phase III, based on watershed based planning and management of CSOs. In September 2002, the PaDEP inspected the Water Department's CSO program for the City's Southeast drainage district. No areas of non-compliance were found but PaDEP did request additional follow-up in three areas. These involved additional monitoring and maintenance of certain specific sites. The Water Department has since responded with a proposed approach for addressing PaDEP's requests.

Delaware River Basin Commission Requirements

The Delaware River Basin Commission (DRBC) is conducting modeling of the Delaware River basin and developing data and criteria, which will be the basis for the draft wasteload allocations (WLAs) for PCBs to be assigned to various dischargers, including the Water Department's three wastewater treatment plants. The WLA development process is complex as these constituents are derived from both point and non-point sources and because of the small quantification of measurable amounts. The DRBC is scheduled to develop the draft

February 28, 2003

WLAs by December 2003. At that time, the Water Department anticipates that it will be required to implement Best Management Practices (BMPs), which will further reduce or eliminate PCBs from the plant effluent discharges. In anticipation of this requirement, the Water Department has begun to implement studies focused on identifying specific areas where PCB sources exist and how the PCBs are transported to the sewerage system.

Stormwater Program

In October 2002, EPA Region III performed an audit of the Water Department's stormwater program. EPA is compiling its findings and is expected to issue a report in the near term future. The Water Department continues to make progress on the Consent Order and Agreement on the illicit connection abatement program. This abatement program mandates that sanitary sewer laterals discharging sewage into the storm system and receiving streams be identified and corrected. As of December 31, 2002, the Water Department had tested 16,691 houses, found 492 illicit connections, and repaired 430 of the connections. The Water Department performed sampling and analysis of the stormwater outfalls after the illicit connections were removed. Findings to date indicate that although the abatement of illicit connections is being successfully executed, the quality of the stormwater discharge continues to show the presence of fecal coliforms. The Water Department is committed to making the abatement program effective and is conducting further study of the drainage basins to better understand the significance of the storm drainage quality results.

Wastewater Collection and Pumping

The Wastewater Collection section has achieved favorable results in several key areas, including stormwater inlet cleaning and in the reduction of sewer system dry weather overflow (DWO) occurrences. As recently as fiscal year 1998, 16 percent of the work associated with inlet cleaning was derived from customer complaints. This number is currently down to approximately 10 percent. Similarly, DWOs have been dramatically reduced over the last decade, with 201 DWOs recorded in fiscal year 1992 and 35 recorded in fiscal year 2002. Real time continuous monitoring of the CSO structures is also currently being implemented.

The Wastewater Collection section engaged a consultant in April 2002 to organize and help implement a comprehensive sewer assessment program. This program will be vital to the Water Department, by establishing procedures and ratings to be utilized for assessing condition of sewers, defining production benchmarks for the inspection program, and in serving as the basis for the sewer system's re-construction program in the future. To date the consultant has inspected 70 miles of sewer, and completion of the pilot program is scheduled for June 2004. After the program is completed, the Flow Control unit will perform all sewer inspection work. It is projected they will perform inspections at the rate of 150 miles of sewer per year.

February 28, 2003

Capital Improvement Program

The Water Department's Capital Improvement Program (CIP) for the six-year period of fiscal years 2004-2009 totals \$704,075,000 in terms of fiscal year 2004 cost levels. Similar to the previous capital improvement program for the period of fiscal years 2003-2008, the focus of the program is in the areas of potable water treatment plant improvements; conveyance system rehabilitation; wastewater treatment plant rehabilitation and upgrade; collection system improvements; control of combined sewer overflows; and storm flood relief. During the past two years the CIP projects have met schedule and budget requirements. The peak CIP expenditures principally associated with water treatment plant process improvements and capital facility assessments will be reduced after 2003. Annual CIP expenditures during the period from 2004-2009 are projected to be less than the annual expenditures during 2001, 2002 or 2003. In addition, the Water Department will implement new information technology programs during 2003 to track and manage CIP projects. This initiative will allow for improved CIP prioritization, reporting and financial management.

The Capital Improvement Program adequately addresses the anticipated needs of the Water Department in continuing to provide both reliable water and wastewater service to its customers and also to comply with regulatory requirements.

Financial Requirements

An update of the evaluation of the adequacy of revenues to meet projected revenue requirements has been made for the fiscal years ending June 30, 2003 through June 30, 2008 and is summarized in Table A, attached at the end of this update letter. Table A is an update of the financial projections summarized in Table VI-8 of our Engineering Report dated November 15, 2001, which covered the period of fiscal years ending June 30, 2002 through June 30, 2007. Revenue projections in Table A for fiscal year 2003 are based on the existing schedules of rates for water and wastewater service, which became effective July 1, 2002. Revenue projections for fiscal year 2004, shown on Line 4 of Table A to reflect an overall increase over existing rate levels of 7 percent, are in fact based upon the schedules of rates previously adopted by the Water Department to become effective July 1, 2003. This rate increase is the third of a three-phase increase in water and wastewater rates adopted as a part of the rate hearing process that was culminated with the Rate Determination of the Water Commissioner dated August 24, 2001. The rates to become effective at the beginning of fiscal year 2004 are expected to generate an overall increase in revenues of 7 percent.

The financial data used in the analyses presented in Table A were obtained from the Water Department's historical financial statements through fiscal year 2002, the latest available estimates for fiscal year 2003, and the operating and capital budgets for fiscal year 2004 .

A description of material changes to the financial projections contained in our previous Engineering Report dated November 15, 2001 is summarized below:

February 28, 2003

- Total Operating Revenue under the rates adopted for fiscal years 2003 and 2004 are approximately equal to the projections from the previous report. The cumulative projected overall increases in revenues for the fiscal years 2005 through 2007 (the remaining overlapping years for Table A and Table VI-8) are reduced somewhat from the original projections shown in Table VI-8. The cumulative increase for the three-year period amounts to 20.1 percent in Table VI-8 (8%, 8%, 3%) while the cumulative increase in Table A amounts to 16.8% (5.3% each of the three years).
- The same assumptions for inflation in operation and maintenance expenses have generally been used in the update report, including reflection of the salary increases included in the current labor agreement of 3 percent in fiscal year 2003, and 4 percent in fiscal year 2004, with annual increases of 3 percent assumed thereafter. Electric power costs were previously assumed to remain stable; however, based upon discussions with Water Department staff, these costs are anticipated to increase at 2.5 percent annually throughout the projection period beyond fiscal year 2004. All other expenses are assumed to increase at 2.5 percent annually beyond the fiscal year 2004 level, the same as previously assumed.
- Using the fiscal year 2004 operating budget as a starting point for the projections beginning in fiscal year 2005 and beyond, the overall level of operation and maintenance expenses is approximately \$6-7 million higher than in the previous projections. The principal contributor to this increase is an estimated \$6 million expenditure in fiscal years 2004 through 2008 for a new billing system. This expenditure is reflected in the operating budget for the Water Revenue Bureau. Other increases of a much lesser significance are related to additional programs within the Water Department, including additional expenditures for odor control at the Northeast Water Pollution Control Plant, additional staffing in the Office of Watersheds, and other programs.
- In our Engineering Report dated November 15, 2001, and reflected in Table VI-8 therein, it was assumed that a revenue bond issue in the amount of \$355 million would be issued in January 2005. This bond issue is now projected for January 2004, with a total principal amount of \$250 million. The shift in the anticipated issuance date and magnitude of this bond issue may be attributed to the funds projected to be available in the construction fund as well as the current level of anticipated capital program expenditures over the projection period. A second bond issue in the study period of fiscal years 2003 through 2008, used in this update letter, is projected for January 2008, with a total principal amount of \$285 million. The previously assumed terms of debt issuance, i.e., maturity schedule (30 years), interest rate (5.5%), and debt service payment schedule (equal annual) from our Engineering Report dated November 15, 2001, are applicable to both the bond issue projected for January 2004 and the issue projected for January 2008.

February 28, 2003

- In fiscal year 2002, the Water Department used funds from the Residual Fund to defease approximately \$9.5 million in Series 1995 Bonds. The reduction in annual debt service payments as a result of this defeasance are recognized in Table A.
- The proceeds from the Series 2003 Bonds will be used to refund on a current basis certain of the Series 1993 Bonds. In addition, the Series 2003 Bonds are being issued as a part of a swap option agreement (the “Swaption”) which the City entered into in December 2002. The Swaption transaction, which was related to both the outstanding Series 1993 Bonds and Series 1995 Bonds, resulted in a net premium in the amount of approximately \$28.99 million being paid to the City which was transferred to the Revenue Fund of the Water Department. Table A recognizes the receipt of these revenues as described in footnote (b) of Table A.

Based on these updated 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 Series 2003 Bonds, as stipulated in the Act and the General Ordinance:

1. Based on onsite physical inspections and investigations of major system facilities, conducted in August 2001, combined with discussions with Water Department staff at that time, as supplemented with additional inspections, interviews, and discussions with staff in January and February 2003, 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 ensure that this goal is achieved.
2. Proceeds from the Series 2003 Bonds will be applied: (i) to refund a portion of the City's Water and Wastewater Revenue Bonds, Series 1993, and (ii) to pay costs of issuance relating to the Bonds.
3. Project Revenues pledged to secure the Series 2003 Bonds are to be derived from the following sources: all rents, rates, fees, and charges imposed or charged for the connection to, or use or product of or services generated by the Water and Wastewater Systems to the ultimate users or customers thereof, all payments under bulk contracts with municipalities, governmental instrumentalities or other bulk users, all subsidies or payments payable by Federal, State, or local governments or governmental agencies on account of the cost of operation of, or the payment of the principal of or interest on moneys borrowed to finance costs chargeable to the Water and Wastewater Systems, all grants, payments, and contributions made in aid or on account of the Water and Wastewater Systems exclusive of grants and similar payments and contributions solely in aid of construction and all accounts, contract rights, and general intangibles representing the foregoing.
4. Based on actual and estimated future annual financial operations of the Water and Wastewater Systems, it is our opinion that the Water and Wastewater Systems will

February 28, 2003

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 Series 2003 Bonds sufficient to meet the payment or deposit requirements of:

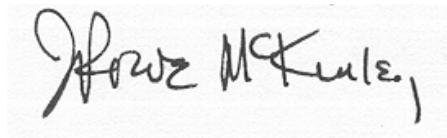
- a. All expenses of operation, maintenance, repair and replacement of the Water and Wastewater Systems;
- b. All reserve funds required to be established out of such Project Revenues;
- c. The principal or redemption price of and interest on all Bonds , as the same become due and payable, for which 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 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 Series 2003 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.

Very truly yours,

BLACK & VEATCH CORPORATION



J. Rowe McKinley
Vice President

Enclosure

TABLE A

PROJECTED REVENUE AND REVENUE REQUIREMENTS

(in thousands of dollars)

Line No.		Fiscal Year Ending June 30					
		2003	2004	2005	2006	2007	2008
OPERATING REVENUE							
1	Water Service - Existing Rates	127,954	129,210	128,918	128,260	127,603	126,945
2	Wastewater Service - Existing Rates	241,223	241,992	242,662	241,557	240,383	239,352
3	Total Service Revenue - Existing Rates	369,177	371,202	371,580	369,817	367,986	366,297
Additional Service Revenue Required:							
	Year	Percent Increase	Months Effective				
4	FY 2004	7.0%	12	25,984	26,011	25,759	25,641
5	FY 2005	5.3%	12		21,072	20,868	20,773
6	FY 2006	5.3%	12		22,084	21,974	21,874
7	FY 2007	5.3%	12			23,139	23,033
8	FY 2008	5.3%	12				24,254
9	Total Additional Service Revenue Required	0		25,984	47,083	68,943	91,740
10	Total Water and Wastewater Service Revenue	369,177	397,186	418,663	438,760	459,726	481,872
11	Transfer From (To) Rate Stabilization Fund	8,554	41,901	31,540	22,832	12,550	9,422
Other Income (a)							
12	Other Operating Revenue (b)	50,125	20,678	20,635	20,593	20,549	20,507
13	Construction Fund Interest Income	5,400	6,179	7,042	5,029	2,989	4,143
14	Debt Reserve Fund Interest Income	1,035	439	703	703	703	999
15	Operating Fund Interest Income	1,562	1,591	1,611	1,649	1,683	1,690
16	Rate Stabilization Interest Income	3,991	3,222	2,104	1,276	737	403
17	Revenues	439,844	471,196	482,298	490,842	498,937	519,036
OPERATING EXPENSE							
18	Water & Wastewater Operations	200,368	214,258	219,827	226,274	232,900	239,711
19	Direct Interdepartmental Charges	47,224	54,342	49,517	50,942	52,411	53,921
20	Total Operating Expense	247,592	268,600	269,344	277,216	285,311	293,632
21	NET REVENUES AFTER OPERATIONS	192,252	202,596	212,954	213,626	213,626	225,404
DEBT SERVICE							
Senior Debt Service							
Revenue Bonds							
22	Outstanding Bonds (c)	159,825	159,845	159,876	160,436	160,436	160,446
23	Pennvest Parity Bonds	384	384	384	384	384	384
24	Projected Future Bonds (d)		8,601	17,201	17,201	17,201	27,006
25	Total Senior Debt Service	160,209	168,830	177,461	178,021	178,021	187,836
26	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							
27	Pennvest Subordinate Bonds	1,227	1,227	1,227	1,227	1,227	1,227
28	Total Debt Service on Bonds	161,436	170,057	178,688	179,248	179,248	189,063
29	CAPITAL ACCOUNT DEPOSIT	16,287	16,645	17,003	17,361	17,719	18,077
30	TOTAL COVERAGE (L21/(L28+L29))	1.08 x	1.08 x	1.08 x	1.08 x	1.08 x	1.08 x
RESIDUAL FUND							
31	Beginning of Year Balance	20,600	15,452	11,512	8,803	5,796	2,425
32	Interest Income	323	166	46	0	0	0
Deposits							
33	End of Year Revenue Fund Balance	14,529	15,894	17,245	16,993	16,629	18,207
34	Deposit for Transfer to City General Fund (e)	4,138	4,994	4,994	4,994	4,994	4,994
Less							
35	Transfer to Construction Fund	20,000	20,000	20,000	20,000	20,000	20,000
36	Transfer to City General Fund	4,138	4,994	4,994	4,994	4,994	4,994
37	End of Year Balance	15,452	11,512	8,803	5,796	2,425	632
RATE STABILIZATION FUND							
38	Beginning of Year Balance	135,309	126,755	84,854	53,314	30,482	17,932
39	Deposit From (To) Revenue Fund	(8,554)	(41,901)	(31,540)	(22,832)	(12,550)	(9,422)
40	End of Year Balance	126,755	84,854	53,314	30,482	17,932	8,510

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

(b) Includes a \$28,990,000 net up-front payment on December 9, 2002, as a result of a Swaption agreement related to the Water Department's outstanding Series 1993 and 1995 Bonds.

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

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

(e) Transfer of interest earnings from the Bond Reserve Account must first go to the Residual Fund as shown in Line 34 to satisfy the requirements for the Transfer to the City General Fund, with the balance included in Line 14 going to the Revenue Fund.



BLACK & VEATCH

8400 Ward Parkway
P. O. Box 8405
Kansas City, MO 64114

Black & Veatch Corporation

Tel: (913) 458-2000

November 15, 2001

The Honorable Janice D. Davis, Director of Finance
City of Philadelphia
1401 John F. Kennedy Boulevard
Room 1330, Municipal Services Building
Philadelphia, PA 19102-1693

Dear Ms. Davis:

This letter reaffirms the findings of the Engineering Report dated November 6, 2001, prepared by Black & Veatch Corporation in conjunction with the issuance of The City of Philadelphia, Pennsylvania Water and Wastewater Revenue Bonds, Series 2001A, in the aggregate principal amount of \$250,000,000. Subsequent to the date of the Engineering Report, the City made the decision to also issue Water and Wastewater Revenue Refunding Bonds, Series 2001B, in the aggregate principal amount of \$35,920,000. The impact of this refunding is to lower the annual debt service requirement on currently outstanding Bonds relative to the requirements shown in Table VI-7 of the Engineering Report. Accordingly, given the level of revenues projected in Table VI-8 of the Engineering Report, with the issuance of the Series 2001B Bonds, the debt service coverage presently shown in Table VI- 8 would be increased.

The statements and conclusions contained in the Engineering Report regarding the City's compliance with specific requirements of the General Ordinance that must be met for the issuance of the Series 2001A Bonds and Series 2001B Bonds (together, the "Bonds") remain valid.

Very truly yours,

BLACK & VEATCH CORPORATION

J. Rowe McKinley
Vice President

JRM:jjt

Engineering Report

Water and Wastewater Revenue Bonds, Series 2001A

**Water Department
Philadelphia, Pennsylvania**



BLACK & VEATCH
C o r p o r a t i o n



BLACK & VEATCH

8400 Ward Parkway
P. O. Box 8405
Kansas City, MO 64114

Black & Veatch Corporation

Tel: (913) 458-2000

November 6, 2001

The Honorable Janice D. Davis
Director of Finance
City of Philadelphia
1401 John F. Kennedy Boulevard
Room 1330, Municipal Services Building
Philadelphia, PA 19102-1693

Dear Ms. Davis:

In accordance with our agreement with the City of Philadelphia (the City) and the requirements of The First Class City Revenue Bond Act (the Act), the Restated General Water and Wastewater Revenue Bonds Ordinance of 1989, and the amendments thereto as set forth in the First, Second, Third, Fourth, Fifth, Sixth, and Seventh Supplemental Ordinances (together 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 2001A (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 2002 through 2007 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 August 2001. The general physical condition of the Water and Wastewater Systems have 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.

November 6, 2001

- *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.

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 August 2001, 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 ensure that this goal is achieved.
2. Proceeds from the Series 2001A Bonds are to be used to finance major portions of the Water Department's capital improvement program for fiscal year 2002 through fiscal year 2007.
3. Project Revenues pledged to secure the Bonds are to be derived from the following sources: all rents, rates, fees, and charges imposed or charged for the connection to, or use or product of or services generated by the Water and Wastewater Systems to the ultimate users or customers thereof, all payments under bulk contracts with municipalities, governmental instrumentalities or other bulk users, all subsidies or payments payable by Federal, State, or local governments or governmental agencies on account of the cost of operation of, or the payment of the principal of or interest on moneys borrowed to finance costs chargeable to the Water and Wastewater Systems, all grants, payments, and contributions made in aid or on account of the Water and Wastewater Systems exclusive of grants and similar payments and contributions solely in aid of construction and all accounts, contract rights, and general intangibles representing the foregoing.
4. Based on actual and estimated future annual financial operations of the Water and Wastewater Systems, it is our opinion that the Water and Wastewater Systems will yield pledged Project Revenues (including projected revenue increases indicated in this 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:

November 6, 2001

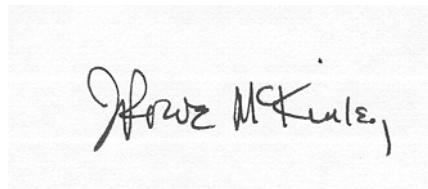
- a. All expenses of operation, maintenance, repair and replacement of the Water and Wastewater Systems;
- b. All reserve funds required to be established out of such Project Revenues;
- c. The principal or redemption price of and interest on all Bonds, as the same become due and payable, for which such 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 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.
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.

Very truly yours,

BLACK & VEATCH CORPORATION

A rectangular area 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
Vice President

lkm
Enclosure

Table of Contents

	<u>Page</u>
I. Introduction.....	I-1
A. Purpose.....	I-1
B. Scope.....	I-1
C. Black & Veatch Qualifications	I-1
II. Organization and Management	II-1
A. Overview.....	II-1
B. Operations Division	II-3
C. Planning and Engineering Division	II-6
D. Finance and Administration Division	II-8
E. Human Resources Division.....	II-9
F. Public Affairs Division	II-9
G. Information Science and Technology	II-11
H. The Office of Environmental Policy and Planning.....	II-11
I. Water Revenue Bureau	II-12
J. Conclusions.....	II-13
III. Water System.....	III-1
A. Introduction.....	III-1
B. Water Supply.....	III-1
1. System Capacity.....	III-3
2. Population	III-4
C. Water Quality	III-4
1. Historical Water Quality.....	III-4
2. Partnership for Safe Water.....	III-5
3. Regulatory Requirements	III-6
D. Water Treatment Plants.....	III-11
1. Baxter Water Treatment Plant	III-12
2. Queen Lane Treatment Plant	III-13
3. Belmont Treatment Plant	III-14

Contents (continued)

	<u>Page</u>
E. Water Conveyance	III-16
1. Distribution Unit/Emergency Support Services	III-16
2. Pumping Unit.....	III-17
3. Load Control Unit.....	III-18
F. Storage and Pumping	III-18
G. Demand Management Programs	III-20
1. Leak Detection.....	III-20
2. Loss Control.....	III-21
3. Water Meter Program	III-21
4. Ratio of Metered Water to Water Treated	III-22
IV. Wastewater System.....	IV-1
A. Introduction.....	IV-1
B. Wastewater System Overview	IV-1
C. Awards	IV-3
1. Water Pollution Control Plants (WPCPs).....	IV-3
2. Biosolids Recycling Center (BRC).....	IV-3
D. Wastewater Treatment Plant Discharge Limits.	IV-4
E. Storm Water Permit	IV-7
F. Clean Air Act	IV-9
G. Northeast WPCP	IV-10
1. Capacity	IV-10
2. Liquid Stream Process	IV-10
3. Sludge Stream Process.....	IV-11
4. Operation and Maintenance.....	IV-12
5. Odor Issues	IV-12
6. Cogeneration System	IV-13
H. Southeast WPCP	IV-13
1. Capacity	IV-13
2. Liquid Stream Process	IV-14
3. Sludge and Scum Stream Process.....	IV-16
4. Operation and Maintenance.....	IV-16

Contents (continued)

	<u>Page</u>
I. Southwest WPCP	IV-17
1. Capacity	IV-17
2. Liquid Stream Process	IV-17
3. Sludge Stream Process.....	IV-18
4. Operation and Maintenance	IV-19
5. Cogeneration System	IV-20
J. Biosolids Recycling Center.....	IV-20
1. Introduction.....	IV-20
2. Biosolids Process Operations.....	IV-21
3. Product Utilization.....	IV-23
4. Operation and Maintenance	IV-24
5. Odor Issues	IV-25
6. The Federal 503 Sludge Regulations	IV-25
7. Other Developments	IV-26
K. Wastewater Collection and Pumping.....	IV-27
1. Organization and Responsibility.....	IV-27
2. Sewer System Maintenance and Repair.....	IV-27
3. Combined Sewer Overflows.....	IV-28
4. Wastewater/Storm Pumping Stations	IV-30
L. Toxics Reductions and Control.....	IV-30
M. Bureau of Laboratory Services	IV-31
V. Capital Improvement Program	V-1
A. Overview	V-1
B. Fiscal Years 2002-2007 Capital Improvement Program.....	V-1
1. Engineering and Administration.....	V-2
2. Improvements to Treatment Plants	V-2
3. Reconstruction of Conveyance System	V-2
4. Reconstruction of Collector System	V-2
5. Storm Flood Relief.....	V-3
6. Expansion of Collector System.....	V-3
7. Expansion of Conveyance System.....	V-3

Contents (continued)

	<u>Page</u>
8. Large Meter Replacement Program.....	V-3
9. Vehicles	V-3
VI. Financial Requirements.....	VI-1
A. Overview	VI-1
B. Existing Rates and Rate Methodology.....	VI-1
C. Projected Revenues Under Existing Rates.....	VI-4
D. Capital Improvements Financing.....	VI-7
E. Projected Revenue Requirements	VI-11
1. Operating Expenses	VI-11
2. Debt Service Requirements	VI-13
3. Capital Account Deposit.....	VI-14
4. City General Fund Deposit	VI-15
F. Adequacy of Projected Revenues to Meet Projected Revenue Requirements Under General Ordinance Requirements	VI-15

List of Tables

		<u>Page</u>
Table III-1	Water System Capacities.....	III-4
Table III-2	Baxter Plant Daily Demands	III-12
Table III-3	Queen Lane Plant Daily Demands	III-14
Table III-4	Belmont Plant Daily Demands.....	III-15
Table IV-1	Current NPDES Effluent Limitations	IV-7
Table IV-2	Illicit Connection Consent Order And Agreement Property Testing Requirements.....	IV-9
Table IV-3	Sewer Maintenance Unit Work Order History.....	IV-28
Table IV-4	History of Blockages Cleared At CSO Structures	IV-29
Table V-1	Capital Improvement Program for Fiscal Years 2002-2007.....	V-2
Table VI-1	General Service Water and Wastewater Rates.....	VI-3
Table VI-2	Projected Revenue Under Rates Effective September 4, 2001	VI-5
Table VI-3	Capital Improvements Program	VI-8
Table VI-4	Capital Improvement Program	VI-9
Table VI-5	Projected Flow of Funds – Construction Fund Water Department.....	VI-10
Table VI-6	Projected Operation and Maintenance Expense.....	VI-12
Table VI-7	Future Debt Service Requirements	VI-14
Table VI-8	Projected Revenue and Requirements Water Department Operations 1989 General Ordinance	VI-16

List of Figures

Figure 1 – Organization Chart.....		II-2
Figure 2 – Water System Facilities		III-2
Figure 3 – Wastewater Service Areas		IV-2

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 Bonds Ordinance of 1989 and the amendments thereto as set forth in the First, Second, Third, Fourth, Fifth, Sixth, and Seventh Supplemental Ordinances (together 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.

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 engineering 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 2002 through 2007 are shown.

This report has been prepared in order to determine the feasibility of issuance of the Water and Wastewater Revenue Bonds, Series 2001A (the Bonds). Net bond proceeds of the Series 2001A Bonds, along with other sources of capital funds, are to be used to finance the Water Department's capital improvement program. 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 August 2001, including: the three wastewater treatment plants; the three water treatment plants; the Biosolids Recycling Center (BRC); Torresdale Raw Water Pumping Station; Torresdale 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. 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 condition to provide reliable operation in accordance with design parameters and require only routine maintenance or minor capital improvements. We also interviewed key members of the Water Department's Finance and Administration, Operations, Planning and Engineering, and Information Technology and Information Systems Divisions in August and September 2001, regarding financial planning, operation and maintenance issues and practices, and the various new programs and initiatives which have been put into place since our last report was completed in conjunction with the issuance of the Series 1998 and 1999 Bonds.

The financial feasibility review has been performed by personnel from Black & Veatch's Management Consulting Division 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, Seventh through Sixteenth Series, 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, 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. Management Consulting Division personnel also were involved in the recent water and wastewater rate hearings that concluded in July 2001. As

a result of these rate hearings, schedules of water and wastewater rates for both retail and wholesale service have been approved and are in place for the next three years, through the fiscal year ending June 30, 2004.

II. Organization and Management

A. Overview

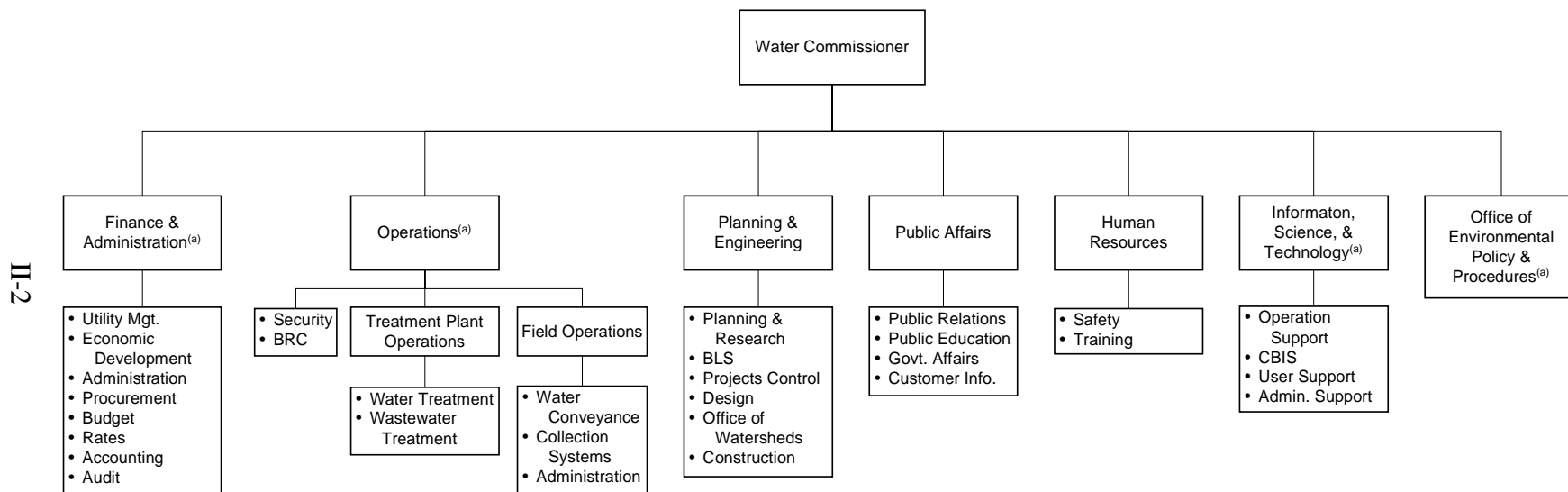
The water and wastewater systems are owned by the City of Philadelphia and are operated as a self-supporting utility by the Water Department established by the Philadelphia Home Rule Charter, approved April 17, 1951. The Water Department is responsible for the planning, construction, operation, and maintenance 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 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 four Deputy Water Commissioners. The Water Department is currently organized into six divisions: (1) Operations, (2) Planning and Engineering, (3) Finance, (4) Administration and 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 September 30, 2001, the Water Department had a total of approximately 2,127 employees. Of these, 1,749 are represented by District Council 33, and 204 are represented by District Council 47 of the American Federation of State, County, and Municipal Employees Union. The 174 upper management, supervisory, and senior engineering personnel are not eligible for union membership. In addition there are 236 employees in the Water Revenue Bureau whose positions are funded by the Water Department. Present labor agreements became effective July 1, 2000, and are due to expire June 30, 2004.

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 has resulted in focused efforts at cost cutting strategies and increased productivity. In 2001, the

Philadelphia Water Department
Organization Chart



(a) Division or Office includes a Deputy Commissioner.

Figure 1 – Organization Chart

Association of Metropolitan Water Agencies (AMWA) provided 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.

In light of the events of September 11, 2001, 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. 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, 2001. All finished water basins are completely covered; all plants are fenced in and topped by barbed wire; gates are secured; and the department continues to draw and conduct nearly one thousand tests on water samples from various locations each day.

B. Operations Division

Over the years, the Philadelphia water and wastewater systems have grown and today they 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 U.S. Environmental Protection Agency (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 published, 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 current organizational structure includes a Deputy Commissioner of Operations, who reports to the Water Commissioner, and seven sections under the direction of the Deputy Commissioner:

- (1) Treatment (Water, Wastewater, Facilities Services, and Industrial Waste).
- (2) Biosolids Recycling Center.
- (3) Water Conveyance.
- (4) Collection Systems.
- (5) Operations Administration.
- (6) Security.
- (7) Executive Assistant.

This division, responsible for the day-to-day operations and maintenance of the water and wastewater systems, relies on the support of the other six divisions to accomplish its mission and, as indicated previously, 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 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 staff places great emphasis on holding 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 also 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 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 is \$13,000.

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 \$13,000 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 now organized into six specialty related sections designed to support the needs of the Water Department. In fiscal year 2000, the Water Department expanded the structure of the Planning and Engineering Division to include the new Office of Watersheds. A brief description of all six sections is 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.
- (2) Office of Watersheds – The Office of Watersheds has been charged with integrating traditionally separately tasked programs, including the CSO program, the Storm Water Management program and the 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 is responsible for implementing planning and management strategies that foster practical and cost effective scientifically based solutions with effective public involvement.

- (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) Capital Projects Section - This group is responsible for developing, maintaining, and tracking the capital improvement program.
- (5) Design Section - This group performs evaluations and design of new and rehabilitation projects, provides input into maintenance, renovation, and reconstruction issues, reviews and coordinates work done by consultants, assists evaluation operations in and response to emergencies and disruptions in water and wastewater service, and assists in public education of various issues associated with the water and wastewater systems.
- (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 and handling payment requests for contractors.

Due to the close working relationship between the Planning and Engineering Division and the Operations Division, additional comments regarding the Planning and Engineering Division were included in the previous Section B of this chapter of the report.

In close cooperation with the Operations Division, the Planning and Engineering Division has developed various demand management and load management initiatives to reduce electrical power costs at all Water Department Facilities. This includes the development of cogeneration projects at the Northeast and Southwest Water Pollution Control Plants, further detailed in Chapter IV of this report, energy management programs to reduce electrical costs through off-peak operation, and the institution of load shedding and demand management programs at several Water Department facilities. From fiscal year 1993 to fiscal year 1998, these projects saved nearly \$1 million per year in electric costs and brought the Department a one-time EPA grant of \$7.5 million for innovative technology. In fiscal year 1999, the net savings from these projects increased to nearly \$1.8 million, when additional savings from deregulation of the electric industry and a negotiated PECO Energy electric rate reduction were factored into the project. In addition, at the Southeast plant, new operating procedures were implemented to minimize power usage during costly peak period hours, achieving recurring savings of over \$190,000 per year. Lighting upgrades recently implemented to improve working conditions will also reduce electric power costs by an estimated \$123,000 per year starting in fiscal year 2001.

The Water Department has also benefited from the City-wide electric rate reduction negotiated by the City's Municipal Energy Office with PECO Energy. This agreement provides the City with an 8.65 percent discount on its General Fund, non-Large Interruptible Load Rider Water Department accounts, and is saving the Water Department in excess of \$1 million per year in electric costs. Rate reductions from deregulation of the electric power industry in Pennsylvania have brought additional annual savings of approximately \$1 million to the Water Department since January 1999.

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, the general accounting of operating and capital funds, 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 and provision of support services in personnel administration, office management, word processing, and library and research assistance.

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; a Utility Financial Services Manager; and various unit managers in the following areas: general accounting, special accounting, rate analysis, budget and finance, audits and studies, and procurement. A new business development position within the Finance Division was established in 1997. One of the key roles of this position is to proactively market available water and/or wastewater treatment capacity of the Water Department to service areas located outside of the City. Another role is to coordinate 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 related 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.

One key area of progress for this Division has been the dramatic reduction in injury leave days used by Water Department employees realized in the past six years. The number of injury leave days exceeded 4,000 in the early to mid-1990s. This data is presented in the tabulation below for the past four fiscal years.

<u>Fiscal Year</u>	<u>Injury Leave Days</u>
1998	1,619
1999	1,486
2000	1,371
2001	1,432

This achievement record has resulted from 1992 changes in the City's collective bargaining agreement and a reform of the Pennsylvania State Workers' Compensation Regulations, together with increased coordination of claims management by the City's Risk Management Division, established in 1993, and the Water Department's Safety and Health Office.

Based upon discussions with various managers within the Water Department, it appears that the procedures for acquiring additional personnel to fill vacant positions are time consuming. The division is working with the appropriate City departments to streamline these procedures in order to fill available positions in a more timely manner.

F. Public Affairs Division

The Public Affairs Division supports and enhances the services performed by the Water Department's six 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. An important part of the program is the Fairmont Water Works Interpretative Center. Using private funds and grants, this center has been created and will be open Earth Day, 2002. During fiscal year 2001, more than 45,000 people toured Department facilities or were touched by the Department's outreach programs. Every year, water customers receive 12 separate communications regarding educational 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. Over 100 press releases are issued annually. 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 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. During fiscal year 2001, the Call Center received more than 218,000 complaints. Average waiting time for the customer to talk with a representative was 15 seconds. A great deal of emphasis is placed on obtaining input from the customer 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 its customers and increased customer service satisfaction.

G. Information Science and Technology

The Information Science & Technology (IS&T) Division was formed on May 22, 1996 by the Water Department to centralize its computer operations and application support and manage the hardware & software computer systems for the Water Department. The division is under the direction of a Deputy Water Commissioner.

The IS&T Division is divided into four sections:

- (1) Operations Support- This section is primarily responsible for maintaining computer equipment and networks.
- (2) Client Support - This section is responsible for ensuring that the computer systems of the treatment plants and laboratories of the Water Department are utilizing current software packages and programs.
- (3) Application Support - This section develops computer applications, modifies commercially available packages, and ensures that the data needs of the Department are accessible.
- (4) Administration Support - This section provides training and handles procurement.

Functions performed by the former Water Information Section under the Planning & Engineering Division are now administered by the IS&T Division. Two of the responsibilities of the former Water Information Section now being carried out by IS&T are the processing of customer water and wastewater bills and providing overall data processing to the Water Department and the Water Revenue Bureau. This support includes hardware, software, data communications networks, and staff assistance. Several projects in which the IS&T group is currently involved include development of the Capital Management Program (CAPMAN), development of a new customer billing system, and a City wide geographical information system.

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 executive staffs, and meetings between the Office of the Director of Finance, Water Commissioner, and other key personnel, serve to maintain communications and enable prompt and direct response to issues involving both the WRB and the Water Department.

The WRB and the Water Department are currently working on the implementation of a new customer billing information system. Within the past two years the two City agencies have successfully completed a City-wide Automatic Meter Reading (AMR) project for residential customers.

J. Conclusions

The Water Department is organized in a manner which provides for efficient accomplishment of its operational and maintenance tasks. 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 been developed among divisions to help coordinate and execute all phases of the Water Department's responsibilities.

Senior management positions are staffed with highly qualified and trained personnel. The staff is committed to a program of identifying and eliminating any system concerns as promptly as is practicable.

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, two high-pressure, non-potable pump stations for fire protection, 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, which provides for the supply of treated water to Bucks County at a rate of up to 35 million gallons per day (mgd). The service to Montgomery and Delaware Counties is provided under a new agreement with the Philadelphia Suburban Water Company, which provides for the supply of treated water at a rate up to 11 mgd. Over the past four years, approximately 58 percent of the City's water supply was obtained from the Delaware River and 42 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. As part of drought emergency planning, the Water Department has never been required to ration water to its customers.

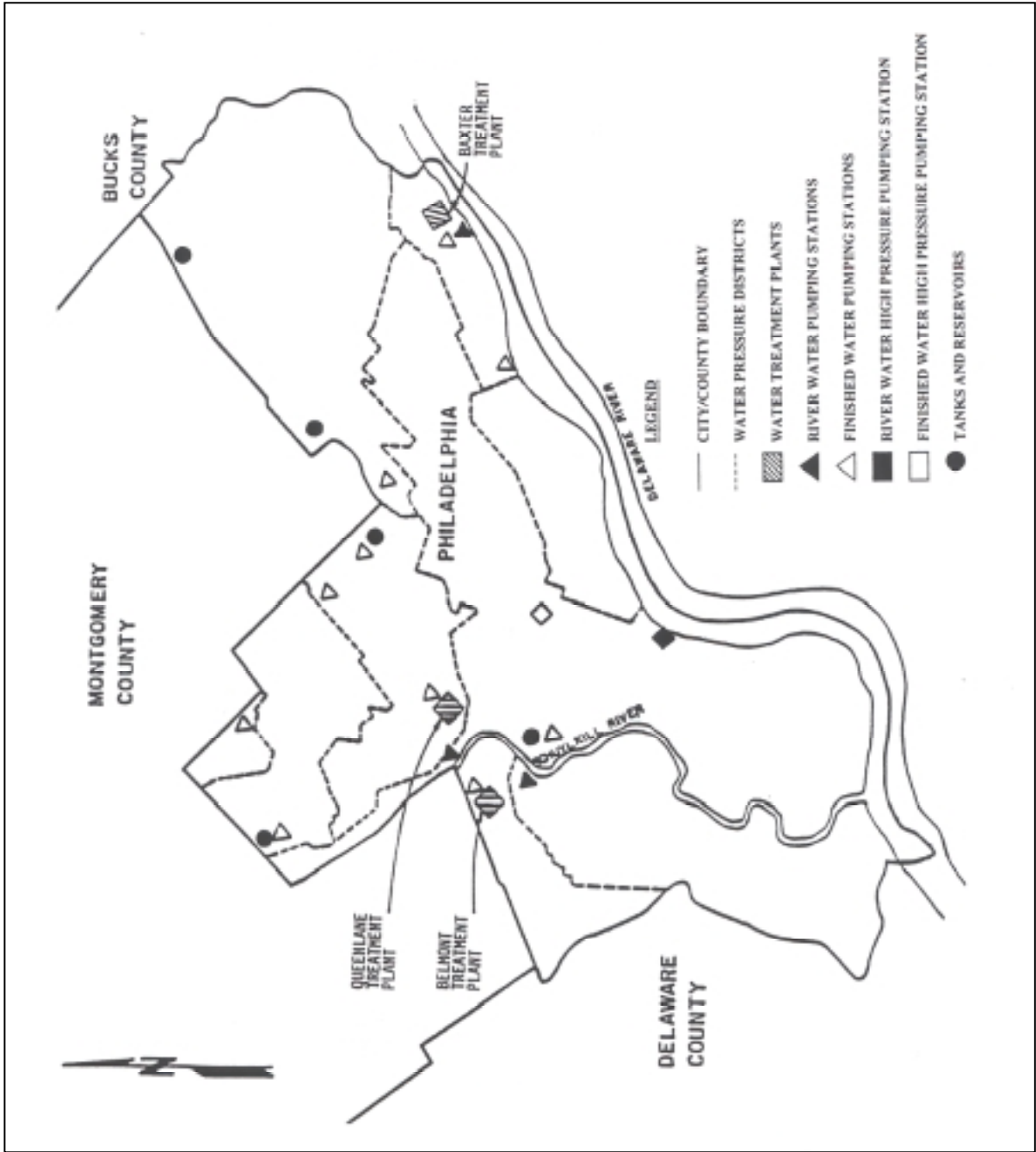


Figure 2 – Water System Facilities

A 1984 Agreement among the states dependent on the Delaware River established patterns of division for the Basin's resources during drought periods. The reservoirs providing water to New York City are the controls, since releases from these reservoirs influence 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.

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.

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. The salinity level, and the River Mile 98 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 circumstances 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 below. The summary includes the treated water storage capacity with completion of the East Park Reservoir rehabilitation. Compared with these capacities, the average daily treated water delivery in fiscal years 1998, 1999, 2000, and 2001 was 276.1 mgd, 283.6 mgd, 275.3 mgd and 270.2 mgd, respectively.

Table III-1 Water System Capacities

	Average Daily Water Entitlement mgd	Raw Water Intake Capability mgd	Treated		Treated Storage mg
			Rated mgd	Water Peak mgd	
Schuylkill Supply	258	---	---	---	---
Queen Lane Plant	---	207	140	150	85
Belmont Plant	---	140	80	110	42
Delaware Supply	390 ^(a)	---	---	---	---
Baxter Plant	---	480	320	423	207
In-System	---	---	---	---	271
TOTAL	<u>648</u>	<u>827</u>	<u>540</u>	<u>683</u>	<u>605</u> ^(b)

^(a) Average daily water entitlement permitted by DRBC. The average daily water entitlement permitted by PaDEP is 423 mgd.

^(b) 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 assume that the total population in the present service area will stabilize at approximately these levels over the next decade.

Per capita rates of water customer usage have also been stable in the years since 1970, which 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 years to come.

In summary, the water treatment, storage, and distribution facilities are of adequate capacity to provide for the present and foreseeable future, even if population growth within the City should occur. The present water system has averaged 70.5 percent of its maximum day capacity during the past four fiscal 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 existing drinking water regulations. The EPA has proposed several new regulations and the Water Department is in the planning stages of meeting the requirements

of these proposed regulations. 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 US EPA to participate in the Partnership for Safe Water Program (the Partnership), the Department has been committed to reduced “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 substantial costs to the water system facilities. Through these efforts, the turbidity of Philadelphia’s drinking water in fiscal year 2001 was eight to ten times cleaner than 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 had to increase 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 all processed at the Department’s wastewater treatment plants.

In fiscal year 1999, Philadelphia became the first major city in the U.S. to have multiple drinking water plants 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’s goal is

to achieve the Partnership's "Excellence in Water Treatment" (Phase IV) award for all three of its drinking water plants over the next four years. While the Water Department's association with the Partnership has resulted in overall lower turbidity of its finished drinking water, this compliance has also positioned the Water Department for meeting the requirements of both the Interim Enhanced Surface Water Treatment Rule and the proposed Long Term 2 Enhanced Surface Water Treatment Rule in terms of both finished water turbidity goals and its ability to continuously monitor filter 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 become effective in January 2002. The Filter Backwash Recycling Rule was promulgated in May 2001 and becomes effective in May 2004. The Groundwater Disinfection Rule (GWR), the Long Term 2 Enhanced Surface Water Treatment Rule Stage and the 2 Disinfectants/Disinfection Byproducts Rule are still under development, along with revised regulations for Radionuclides and Arsenic. Currently, drinking water standards have been established for 87 contaminants, along with a number of required treatment techniques. 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) samples approximately 1000 sets of drinking water samples each month from the water treatment plants, reservoirs and distribution system. The Water Department's Planning and Engineering Division staff is at the forefront in tracking the development of regulations, and in providing 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 90 percent lead level to 0.009 mg/L and the 90 percent copper level to 0.3 mg/L.

b. Surface Water Treatment Rule

The Surface Water Treatment Rule requires water systems using surface water and ground water under the direct influence of surface water to provide filtration and disinfection for protection against waterborne disease outbreaks. This rule also mandates disinfection into and throughout the distribution system.

Compliance Status: The Water Department provides filtration and disinfection for all its water sources and exceeds certain requirements of the SWTR. Under the requirements of the rule, a 0.50 NTU turbidity of the filtered water must be maintained. Through its agreement with the Partnership, 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.

c. 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.

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

This rule will control levels of disinfectants and disinfection by-products. Stage 1 of the rule was promulgated in December 1998 and will become effective on January 1, 2002. Stage 2 of this Rule is still being developed by USEPA. These rules contain maximum residual disinfectants levels (MRDLs), MCLs for disinfection by-products and a treatment technique for total organic carbon (TOC) removal. The Stage 1 Rule reduced the MCL for total trihalomethanes (TTHM) from 100 ug/L to 80 ug/L and established an MCL of 60 ug/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), chloramine (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: Based on current water quality data and the extensive pilot plant studies conducted by the Department, the Stage 1 MCLs are currently being met without any major modifications to existing facilities. The average level of TTHMs in Fiscal Year 2000 for the Department's three water treatment plants was 37 – 51 ug/L, and for HAA5s was 20 – 35 ug/L. The Water Department has modified the treatment processes at each plant to provide enhanced coagulation. Construction and start-up of all new and modified chemical storage and feed facilities required for this treatment technique are either already available or will be on line by the end of 2001. One possible exception is at the Belmont plant, where facilities will not be available until early 2002. The Department has already discussed a variance at this plant with the PaDEP to extend the start of compliance until the improvements are completed, which would enable the Department to be in compliance with the requirements of the Stage 1 requirements. The Department has always operated well below the MRDL for chloramines, with a maximum monthly average of 2.2 mg/L in fiscal year 2000, and will be in compliance with this part of the Rule as well.

Compliance Status with Stage 2: While the Water Department is in compliance with all current standards, the new limits may require modifications to present operations of the Water Department's three treatment plants. The Stage 2 phase of the D/DBPR is currently anticipated to be proposed in mid-2002 and the final rule promulgated in mid-2003. Therefore compliance limits under this regulation have not yet been established and it is too early to estimate the potential cost impact of these regulations on the Water Department. The pilot plant research studies that the Department has conducted over the past few years have provided insights on the capability of existing and alternative processes to meet the various requirements that are being discussed for inclusion in this regulation. The Department has

budgeted Capital Funds for the most likely improvements anticipated in this regulation, and is prepared to move forward with design of required improvements once the requirements are known.

e. Information Collection Rule (ICR)

This rule was finalized in May 1996 and became effective in July 1997. The rule was intended to provide EPA with additional data for setting of the Enhanced Surface Water Treatment Rule (ESWTR) and Stage 2 of the Disinfectants/Disinfection By-products Rule (D/DBPR). Large water systems, those serving a population greater than 100,000, were required to monitor for microbiological contaminants (coliforms, giardia, cryptosporidium, and cultural viruses) and disinfection by-products.

Compliance Status: The Water Department complied with the ICR's monitoring requirements and submitted samples and reports as required. The Water Department's Bureau of Laboratory Services was certified to monitor the two most critical parameters of this Rule, cryptosporidium and giardia. Monitoring for these parameters has continued past the time period required by this Rule to provide continuing information on the level of these microbial contaminants in the Departments source water and confirm that they are not present in its treated water.

f. Interim Enhanced Surface Water Treatment Rule (ESWTR)

This rule was promulgated in December 1998 and becomes effective on January 1, 2002. This Rule lowered the turbidity MCL to 0.3 NTU in 95 percent of the samples, down from the current 0.5 NTU. It also set a maximum turbidity of 1.0 NTU in the finished water and required that individual continuous turbidity monitors be install on each filter. The Rule requires that operating procedures be revised and follow-up investigations conducted if individual filters are found to exceed certain monitoring criteria. Capital costs to comply with this rule include additional turbidity monitors for filters that currently are not monitored. Additionally, if certain individual filters are found to consistently produce high turbidity water, the filter media and/or underdrain in these filters may need to be replaced.

Compliance Status: As discussed previously, the Water Department's participation in the Partnership has already demonstrated that they are 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.

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

The draft agreement for this rule would require the Department to conduct additional microbial monitoring (2 years of monthly cryptosporidium and E. coli monitoring) that will be used to place the treatment plants in different "bins" based on their average source water cryptosporidium level. Systems in the different "bins" will have a "toolbox" of options that they can choose to implement to obtain the additional removal and/or inactivation credits required to meet the revised removal levels of this Rule.

This rule may include lower filter effluent turbidity as one of the treatment technique options to achieve increased microbial removal credit. Its most significant impact is projected to be in the area of source water quality and disinfection in order to provide public health protection from cryptosporidium. It is unclear at this time what additional disinfection, if any, will be needed at Water Department facilities. The current draft of the LT2ESWTR lists several options being considered for implementation, including source water quality, treatment process performance, and source protection. There is a possibility that the Department may have to provide additional operational enhancements or additional disinfection capabilities to comply with this Rule. They are collecting the necessary water quality and process performance data, including pilot plant studies of alternative treatment processes, to enable them to make an informed decision on how best to proceed once the proposed Rule developed.

h. Consumer Confidence Reports Rule

The 1996 SDWA Amendments require the Water Department to issue an annual report on its treated water quality to its consumers. The Department has done this annually in the format required by the Rule.

i. Filter Backwash Water Rule (FBRR)

EPA promulgated this rule in May 2001 and it will be effective in May 2003. The recycle streams regulated by the FBRR are filter backwash water, sludge thickener supernatant, and liquids from dewatering processes. The recycle streams are to be returned to the treatment process prior to coagulation. 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 backwash wastewater at the Baxter water treatment plant. This waste stream 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 this new rule.

j. Source Water Protection Program

The 1996 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 Department was selected by PaDEP to lead a joint effort with Philadelphia Suburban Water Company 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. The study is funded by a \$500,000 grant from PaDEP and will assess the susceptibility to pollution of the Schuylkill River watershed. The outcome of the assessments will detail the major issues within the watershed threatening the quality of drinking water supply and become a major influence on future implementation funds for source water protection/restoration efforts by the Commonwealth of Pennsylvania. The Department is also involved in a similar process for seven surface water intakes along the tidal section of the Delaware River.

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 have occurred 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 50 percent complete and substantial progress has been made 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.

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 capacity of 423 mgd. Recent water demands are shown on Table III-2.

Table III-2 Baxter Plant Daily Demands

<u>Year</u>	<u>Average Daily Output</u> mgd	<u>Maximum Daily Output</u> mgd
1998	160	246
1999	168	226
2000	158	214
2001	155	201

As with all the plants, the rapid sand filters continue to be converted to dual media with 58 of the 94 filters having been converted to date. 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 has resulted in greatly reducing 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 operations have been modified to only use backwash water from the backwash storage tanks to provide a more uniform backwash.

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

- In 2000 the old sludge lagoon was closed using 30,000 cubic yards of material previously dredged from the raw water basin under a \$5,500,000 project.

- As part of the conversion of the treatment process to enhanced coagulation, the lime system was modified to use hydrated lime and the feeders were replaced with a slurry tank and pump system to allow lime to be added at multiple feed points, including the filter influent conduit.
- On-line turbidimeters and a computerized monitoring system (SCADA) at all filters were installed. This work was completed in September 1998.
- 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 pilot plant is currently testing UV disinfection and is expected to continue through the year 2002.
- 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 2002.

Staffing at Baxter treatment plant has recently increased from 51 to 52 budgeted positions in fiscal year 2000, to provide the additional manpower needed to comply with Federal Laboratory Certification and testing requirements.

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.

Table III-3 Queen Lane Plant Daily Demands

<u>Year</u>	<u>Average Daily Output</u>	<u>Maximum Daily Output</u>
	mgd	mgd
1998	68	105
1999	72	110
2000	73	100
2001	71	96

Other projects either planned or ongoing at the Queen Lane plant include:

- The Water Department continues a program of replacing existing underground chemical storage tanks to comply with current regulations. The Queen Lane plant has the largest number of buried tanks and therefore is impacted the most by these regulations. The sodium hypochlorite and ammonia tanks were replaced in 1998. A second project to replace the existing fluoride, polymer and sulfuric acid tanks as well as associated electrical facilities was completed in 1998.
- The on-line turbidimeters and a computerized monitoring system (SCADA) at all filters was installed in 2001.
- The Queen Lane plant has been included in the Water Department's Capital Facilities Assessment project. Findings from this project are intended to be extended to the other two plants in the future. The assessment project is scheduled to begin during 2002.
- Design of a potassium permanganate system for the plant's raw water basin influent channel was completed and bid in 2001, and completion of the project is scheduled for Fall 2002.
- All chemical sampling lines throughout the plant are to be replaced. This project will be completed in 2004.

Staffing at Queen Lane has remained at a budgeted 52 positions from fiscal year 1998 through fiscal year 2001.

3. Belmont Treatment Plant

The Belmont Water Treatment Plant draws water from the Schuylkill River and serves as the source of supply for western Philadelphia. The Belmont plant is rated at 80 mgd. Recent water demands are shown on Table III-4.

Table III-4 Belmont Plant Daily Demands

<u>Year</u>	<u>Average Daily Output</u>	<u>Maximum Daily Output</u>
	mgd	mgd
1998	48	57
1999	44	62
2000	44	67
2001	44	49

Residuals from the flocculation and sedimentation basins are sent to the Southwest Water Pollution Control Plant (WPCP), as is the filter backwash. A final discharge permit for the Belmont plant residuals flow was issued by PaDEP 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 PaDEP has not reviewed it, the plant continues to operate and monitor under the same conditions as required by the permit.

The grouting and concrete repair work at the plant finished water basin and the grouting, concrete repair and installation of a HDPE roof liner on the Monument Road storage tank was completed in fiscal year 1999. Construction of the new high service pumping station was completed in 2001.

Other projects either recently completed at the Belmont plant include:

- The Filter building ceiling replacement and rehabilitation was completed in fiscal year 1998.
- An electrical system upgrade project, which included the replacement of existing transfer switches, raw water basin electrical panel and emergency battery backup systems, was completed in June 1998.
- Installation of on-line turbidimeters and a computerized monitoring system (SCADA) at all filters was completed in June 2000.
- All chemical sample lines throughout the plant were replaced in August 2000.
- An evaluation and repair project of the finished water storage basin roof drainage system was completed during fiscal year 2000.
- Repair of cracks in the North filtered Water Basin was completed in June 2001.

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

- Full scale plant testing of potassium permanganate at plant intake.

- Pilot plant testing to address both EPA's enhanced coagulation rule and other studies to optimize treatment including rapid mix and sedimentation process evaluations continues. The pilot plant testing is expected to continue through the year 2002.

Staffing requirements at Belmont has remained at a budgeted level of 47 positions.

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 focussed on overall customer satisfaction. The Water Conveyance Section's responsibility is to deliver water to the Water Department's customers. The section is now composed of four units, including: Distribution and Emergency/Support Services, Headquarters, Pumping, and the Load Control Center. Previously, Distribution and Emergency/Support Services were two separate units. The Water Department believes that they gain flexibility and increased level of service by merging the two units.

The Water Department continues its participation in a "benchmarking" research project being conducted by the American Water Works Association. The data and information collected will be useful in future Water Department operational and planning efforts as internal performance standards are set. The information will also allow the Water Department to compare themselves with other similar utilities.

The Water Conveyance Section has recognized the need to lessen the gap between the engineering and analysis of the water distribution system, and its associated maintenance. The Distribution, Maintenance, Information System (DMIS) has been developed to provide new ways of reporting the maintenance symptoms and results. The result of this improved record keeping is improvements in evaluating performance and setting targets. This, in turn, improves the efficiency and effectiveness in terms of identifying the timing for system upgrades and maintenance.

1. Distribution Unit/Emergency Support Services

The mission of this unit is to repair the distribution system, construct service connections, provide 24-hour per day emergency response and effect local control of the water distribution and transmission system. Additionally, it is intended to provide a reliable water supply, cost effectively, while being responsive to the customers needs.

The Distribution portion of this unit maintains pipelines and infrastructure that requires excavation, including maintenance and repair of below grade valves and hydrants. A preventive maintenance program that involves both field investigations as well as

systematic scheduling of repairs and replacements is in place. Portions of mains removed from service are examined at the Bureau of Laboratory Services to determine extent and depth of corrosion and possible causes of breaks. All identified breaks in mains, typically 500 to 1,000 per year, are corrected. In fiscal year 1998 a total of 433 main breaks were recorded, in fiscal year 1999 there were 637 main breaks, in fiscal year 2000 there were 828 main breaks and in fiscal year 2001 the number of breaks was 701. Mains having joints with iron-oxide-sulfur (“leadite”) have been prone to failure and have been replaced systematically.

A computerized valve maintenance information system (VMIS) has been implemented and has proven useful in updating data and scheduling maintenance on smaller valves. A corrosion control study to identify stray traction currents from SEPTA subway trains as a potential contributing cause to pipeline corrosion is ongoing. The Water Department has retained the services of a corrosion consultant to provide testing and design services on an individual project basis. The unit oversees and monitors corrosion control designs of its pipeline projects.

Large valves not requiring excavation are maintained by the Emergency and Support part of this unit. Approximately 30 valves are replaced annually as part of the Water Department's overall system upgrading effort. During 2001, 24 large valves (16 inches and larger) were replaced and 5 valves had major repairs. The unit also tracks repairs to all hydrants through a new computer system, and provides a shut-off group for discontinuing service to delinquent accounts.

Programs have been implemented that result in more efficient staff utilization. A computerized fire hydrant maintenance system has been established, and the Fire Department now reports on the status of all hydrants. Installation of tamper-proof, center-compression locks has nearly been completed in the areas most subject to fire hydrant abuse. Totals of 831, 893, 588 and 1,207 locks were installed in fiscal years 1998, 1999, 2000 and 2001, respectively. The number installed during fiscal year 2001 was higher to catchup on a backlog from fiscal year 2000, when materials were not available to install all of the locks scheduled for installation.

2. *Pumping Unit*

The mission of the Pumping Unit is to maintain and repair all raw water, potable water, and high pressure pumping systems, grounds, intakes, reservoirs and tank areas in the pumping unit. Additionally, this unit maintains the reliability and availability of the pumping equipment to achieve the highest possible pump efficiency.

The staffing level for the trade classes in the Pumping Unit has been increased to a level that enables the unit to return to performing maintenance in a predictive mode rather

than the reactive mode of recent years. The Water Department emphasizes the importance of an aggressive maintenance program and the unit's goal is to be fully in the predictive mode in the near future. Predictive maintenance is the most advanced mode that includes close coordination of a predictive maintenance schedule with a cost-effective operations schedule.

3. *Load Control Unit*

The mission of the Load Control Unit is to operate the water distribution load control center and water transmission system; and conduct hydraulic investigations and leak detection to ensure a reliable, cost-effective water supply to the City of Philadelphia.

The Load Control Unit performs operations engineering for the Water Conveyance Section. All pumps are automatically controlled by the unit. Other functions of the Load Control Unit include electronic/operational maintenance for the Supervisory Control and Data Acquisition (SCADA) system, investigations into the areas of leak detection, main gauging, fire flow tests, and disinfection of water mains. The unit has historically managed data and coordinated the resolution of special problems within the Distribution Unit. The Load Control Unit coordinates all in-house and capital improvement program work in the conveyance system.

The Load Control Unit's fiscal year 2002 electrical power budget for water system pumping is \$7,060,000. This compares to the fiscal year 1997 budget for electric power of \$10,405,000. Over the past 5 years (1997-2001) the average day demand has been 280.5 mgd, as compared to the average day demand for the previous 10 year period (1987-1996) of 336.3 mgd, a decrease of 16.6 percent. Decreases in the electric power budget reflect this reduced demand for water service as well as the reduction in system leakage. In addition, the Water Department has been successful in negotiating favorable electric power rates with its power supplier.

The Load Control Unit's updated SCADA system has been in operation since 1994 and has proven to be a valuable tool. This system provides for more efficient and cost-effective operation of water system pumping and conveyance. The Load Control unit is planning to expand the system capabilities to connect security systems into the SCADA network and monitor security from load control to provide expanded security monitoring systems for additional Water Department facilities.

F. Storage and Pumping

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

A separate high pressure, non-potable fire system, consisting of two pumping stations and an independent distribution network, serves Center City and nearby portions of north central Philadelphia. Water for this system can be provided from the potable water supply system or directly from the Delaware River. The pumping stations are located at Delaware and Race (Station No. 1) and 7th and Lehigh (Station No. 2).

By utilizing reservoir storage capacity and pumping capabilities, through the Load Control Unit, the Water Department is able to provide water during periods of water shortage. Since the northeast basin at East Park Reservoir was covered and placed in service, the northwest basin capacity is not required and that basin has been temporarily deactivated. The south basin is no longer in use.

The East Park basins provide important reserve storage. Because of their location in the system, they can supply both the Schuylkill and the Delaware Divisions as needed. They can also support alternate supply and routing to allow the Water Department to respond to breaks, and to conduct systematic removal of facilities from service as part of the conveyance and treatment repair and replacement programs. Connections are in place that allows the East Park Reservoir to be filled from the Baxter plant. These connections give the City the ability to preserve service to nearly all customers if the availability of raw water supply from the Schuylkill River should be compromised. A new Belmont High Service Pump Station

has been constructed and will be in service by late 2001 that will enable the Belmont High Pressure District along City Line Avenue to also have this capability. The only portion of the City that would be left without service is in Roxborough. Under strict conservation measures, an 8-day supply for this area can be made available. During this 8-day period, emergency plans can be implemented to provide additional piping and pumping so that the entire City can be supplied from the Delaware River if necessary. With the upgrade at East Park Booster Station and operation of the new Belmont High Service Pumping Station, redundancy in water delivery capability will be available system wide. The operation of the new Belmont High Service Pumping Station will insure that regulations for contact time are met in the distribution system.

The unavailability of raw water from the Delaware River is more critical because the Queen Lane and Belmont plants together cannot fully satisfy citywide water delivery requirements. If Delaware River water was to become unavailable, plans are to direct water stored at the Baxter plant to areas that presently cannot be served by the Belmont and Queen Lane plants. Simultaneously, the Water Department would maximize production at the Belmont and Queen Lane plants. Full customer usage would be met for a period of days. These measures would then satisfy approximately 70 percent of the citywide water delivery requirement. The Water Department would also mount a media campaign emphasizing the need for emergency water conservation measures.

G. Demand Management Programs

The Water Department maintains programs to improve metering and reduce the loss of finished water from the distribution system. These include leak detection, loss control, installation of new meters, and continued examination of the ratio of metered water to total treated water. The Water Department has established a Water Accountability Committee to minimize losses of metered water. The mission of this Committee is to re-examine the direction that the City has been taking regarding lost water and to define the level of effort required for implementing both short and long term initiatives that will emphasize better management, operations, and accountability.

1. Leak Detection

The Leak Detection Survey program operates within the Water Conveyance Section. During fiscal year 1998, approximately 1,072 miles of pipeline were surveyed for leak detection, 1,396 miles were surveyed in fiscal year 1999, 1,395 miles were surveyed in fiscal year 2000, and in fiscal year 2001, there were 1,832 miles of pipeline surveyed. This activity level represents an effort to increase preventive repair work, as well as reorganization of the crews from 3 persons to 2 persons each. The entire distribution system of Philadelphia

consists of approximately 3,300 miles of pipeline. It is estimated that through the Leak Detection Survey Program that 4.59 mgd, 4.21 mgd, 6.11 mgd, and 9.17 mgd in leaks were abated in the fiscal years 1998, 1999, 2000, and 2001, respectively. The estimated payback period for these repairs in fiscal year 2001 is 1.43 years.

2. *Loss Control*

The Water Department has implemented a fire hydrant lockout program in problematic areas of the City and has installed tamper-proof locks in those areas most susceptible to fire hydrant abuse. Approximately 11,954 of the City's 28,000 hydrants (43%) now have center compression locks. A computerized hydrant tracking system is beneficial in controlling water loss through hydrant abuse, as is the cooperation of the Fire Department in this matter.

3. *Water Meter Program*

The Water Department's water meter program includes two major initiatives: an Automatic Meter Reading (AMR) program encompassing the large majority of residential meters, 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 one of the largest and most significant water automatic meter reading endeavors to be implemented in the country. Implementation of this program was in July 1997 when a contract was signed with Itron, Inc. (Itron). This program is substantially complete with 95 percent (about 441,000) residential and commercial customers having AMR capability. The Department has now begun to focus on the installation of AMR for its large meter commercial and industrial customers. Significant improvements in customer service have already become apparent as a result of this program. Customer billing complaints in fiscal year 2000 decreased by nearly 25 percent as compared to the previous two fiscal years. The project also provided benefits in the areas of leak detection and theft reduction. As a result of the issuance of twelve bills per year with actual meter readings, a result of AMR, versus the previous situation where many of the water bills contained estimated consumption amounts, in fiscal years 1999 and 2000 there was a slight improvement in the timing of the collections of billings. Additionally, AMR will help achieve the following important benefits for the Department:

- Reduced intrusion into individual homes, resulting in greater customer convenience and security.
- Accurate and reliable meter readings will be obtained each month.
- More accurate bills will reduce complaints associated with estimated bills.
- 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 at 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. As a result of the recently enacted rate increases, the Water Department has had an increase in the number of requests to downsize those larger meters. 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. *Ratio of Metered Water to Water Treated*

The ratio of customer metered water to the total water treated during fiscal year 2001 indicates that approximately 88.5 mgd, or 32.8 percent of the total 270.2 mgd of water delivered to the distribution system, is unmetered. A portion of this water is used for authorized purposes such as water for fire fighting, street cleaning, and water system maintenance. Other amounts are lost through illegal hydrant use and theft of water, or are metered inaccurately. Water is also lost through water system leaks and customer leaks before it is metered. The water industry is in the process of establishing standards for calculating unmetered and unaccounted for water losses. Water accountability for fiscal

years 1998, 1999, 2000 and 2001, as measured strictly by the ratio of metered water to water delivered, was 70.2, 65.8, 67.2, and 67.2, respectively.

The Water Department has expanded its leak detection program and continues to develop new initiatives to increase accountability for unmetered water and improve the metering system. The program to control unaccounted water use includes:

- Hydrant lock and abuse reduction programs.
- Hydrant repair and tracking of hydrant repair activities.
- Improvements in tracking and managing water main breaks.
- Expansion of leak detection surveys by both outside consultants and Water Department staff. Large meter replacement program.
- AMR Program.
- Increased rate of water main replacement.

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 2,960 miles of sewers, 84,710 manholes, 175 combined sewer regulating chambers, 89 tide gates, 26 storm relief structures, 78,136 stormwater inlets, and 24 metering chambers to monitor flows from surrounding townships. There are 586 miles of sanitary sewer, 622 miles of storm sewer, 1,597 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. Suburban wastewater treatment contractual limits, and average daily flows in fiscal year 2001 are as follows:

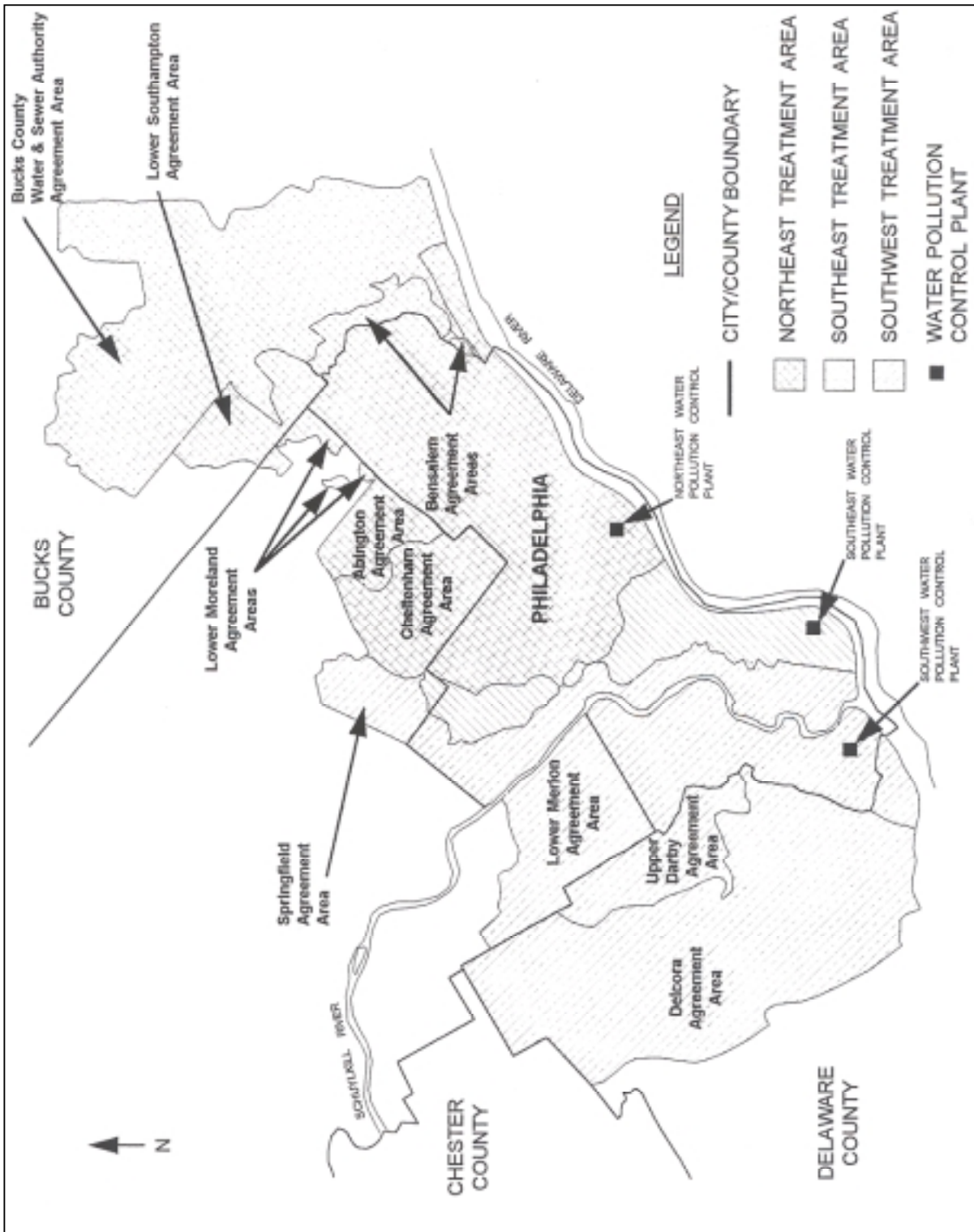


Figure 3 – Wastewater Service Areas

	Annual Average Daily Flow <u>Maximum (mgd)</u>	Average Daily Flow in Fiscal <u>Year 2001 (mgd)</u>
Northeast Plant	54.9	38.1
Southeast Plant	1.0	0.6
Southwest Plant	<u>84.7</u>	<u>55.9</u>
Total	140.6	94.6

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.

C. Awards

1. *Water Pollution Control Plants (WPCPs)*

The three WPCPs have been operating regularly with an outstanding performance record. This record has endured for a consecutive number of years with no violations of the plant effluent discharge permits. 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 six consecutive Gold Awards from 1995 through 2000.
- *Northeast WPCP* – Has been awarded four consecutive Gold Awards from 1997 through 2000.
- *Southeast WPCP* – Has been awarded Gold Awards for five of the last six years. The facility had one violation of its permit in 1999, and thus missed a Gold Award. That year the plant earned a Silver Award.

2. *Biosolids Recycling Center (BRC)*

In 1998, the Water Department received a Special National Award from the EPA for “sustained excellence in the use of biosolids for stripmine reclamation.” In 1999, the Department received the first annual “Beneficial Use of Biosolids Award,” sponsored by PaDEP and the Pennsylvania Water Environment Association. The BRC recycled 74 percent of its biosolids into environmentally beneficial uses, such as strip mine reclamation,

agricultural applications and community gardening in fiscal year 1999, by far the highest percentage in the Department's history.

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. By an order of the DRBC issued in 1969, the City of Philadelphia is required to satisfy treatment standards more stringent than those defined for secondary treatment by the Federal Water Pollution Control Act of 1972. These standards have been established in response to the special problems of water quality protection applicable to the Delaware River estuary.

New NPDES permits for the Northeast, Southeast, and Southwest WPCPs became effective August 2000. These permits will remain in effect for a five-year period. The current NPDES permit limitations are included in Table IV-I. 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 new permits are summarized below.

- *Industrial Pretreatment Program.* The Water Department will need to re-evaluate its local limits; however, no additional requirements have been imposed since the Water Department has already been complying with all aspects of the federal pretreatment regulations. 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.* 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 are to be completed by 2004. Completion of Step 3 is dependent on the program elements and outcomes of the first two steps.
- *NPDES Permit Requirements.* The permits identify monitoring requirements for various pollutants. The Water Department is already meeting these requirements. This information is used by the DRBC in the determinations of waste load effects on the Delaware River.

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.

Table IV-1 Current NPDES Effluent Limitations

<u>Effluent Characteristic</u>	<u>Discharge Limitation</u> (Average Monthly)
CBOD ₅ (mg/l)	25 ^{(1) (2)}
CBOD ₅ (lbs/d)	36,430 ⁽¹⁾ , 19,800 ⁽²⁾
CBOD ₅ (% removal)	86 ⁽¹⁾ , 89.25 ⁽²⁾
CBOD ₅ (% removal at flows > MDF)	See footnote 5
BOD (mg/l)	30 ⁽³⁾
BOD (lbs/d)	19,650 ⁽³⁾
BOD (% removal)	86 ⁽³⁾
BOD (% removal at flows > MDF)	See footnote 6
TSS (mg/l)	30
TSS (lbs/d)	52,540 ⁽¹⁾ , 50,040 ⁽²⁾ , 23,025 ⁽³⁾
TSS (% removal)	85
TSS (% removal at flows > MDF)	See footnote 7
pH	6-9
Fecal Coliform	200/100 ml ⁽⁴⁾
Total Residual Chlorine (permit years 1 & 2)	1
Total Residual Chlorine (permit years 2, 3 & 5)	0.3 ⁽¹⁾ , 0.2 ⁽²⁾
Average Monthly Flow - AMF (mgd)	monitor/report
Maximum Daily Flow – MDF (mgd)	monitor/report
Maximum Daily Flow – MDF recognized for calculating % removals at high flow day events (mgd)	315 ⁽¹⁾ , 300 ⁽²⁾ , 168 ⁽³⁾

⁽¹⁾ Northeast WPCP

⁽²⁾ Southwest WPCP

⁽³⁾ Southeast WPCP

⁽⁴⁾ Geometric mean

⁽⁵⁾ If a calendar month includes one or more days where flows exceed the MDF, a value of 86 % and 89.25 % respectively at the Northeast WPCP and the Southwest WPCP may be used for those days for calculating CBOD₅ percent removal.

⁽⁶⁾ 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.

⁽⁷⁾ 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

CBOD₅ Carbonaceous Biological Oxygen Demand

BOD Biochemical Oxygen Demand

TSS Total Suspended Solids

AMF Average Monthly Flow

MDF Maximum Daily Flow

E. Storm Water Permit

In 1990, the USEPA promulgated Storm Water Regulations that required permits for storm water discharges from municipalities defined by USEPA as those with populations greater than 250,000 with separate storm water systems. These initial permits, targeting large

municipalities, were identified as Phase I. The Water Department was issued its first storm water permit in September 1995, by PaDEP. The permit covered 434 storm water outlets and had a five-year term. Although the Water Department applied for renewal in March 2000, the permit expired in September 2000. However, the permit has been administratively extended with no re-issue date projected. It is anticipated that the permit will not be re-issued until PaDEP first issues Phase II storm water permits to the smaller municipalities. The time frame for the Phase II permits is 2003. It is noted that the Water Department regularly complies with the permit's quarterly and annual reporting requirements.

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. Although the Water Department has made progress with all aspects of its storm water permit, complicated technical and policy issues associated with the illicit connection program resulted in the Department entering into a Consent Order and Agreement with PaDEP in June 1998 for correction of illicit connections. The term "illicit" is taken from the EPA Storm Water Guidelines. The plumbing regulations of the City of Philadelphia hold the property owners responsible for the upkeep and maintenance of the house and storm drains and sanitary and storm laterals; however, the Consent Order and Agreement requires the Water Department to initiate, test and manage the abatement of these illicit connections (property owner laterals). The abatement program is required in order to remove unwanted sanitary sewage discharge into the storm water system and receiving streams.

The Consent Order and Agreement details the testing and resolution program to be undertaken regarding the illicit connections. Some of the more pertinent requirements of this document are highlighted below:

- *Staffing.* The Water Department shall hire or contract four crews to perform the sampling, and inspection activities necessary to identify, confirm and verify the presence of illicit connections.
- *Task Identification.* This task calls for data collection, including field screening, testing, and notification to the property owner.
- *Prioritization.* A prioritization of sewersheds based on factors such as contamination levels and impacts on receiving streams is required.
- *Work Crews.* After the sewersheds are prioritized, appropriate numbers of field crews must be allocated to the highest priority sewershed areas.
- *Minimum Testing Requirements.* Table IV-2 below identifies a specific number of properties per year for seven years, that must be tested for illicit connections.

Table IV-2 Illicit Connection Consent Order And Agreement Property Testing Requirements

<u>Fiscal Year</u>	<u>Cumulative No. of Properties</u>
1999	2,500
2000	5,000
2001	7,500
2002	10,000
2003	12,500
2004	15,000
2005	17,500

- *Abatement Program.* The Water Department shall create an abatement program to fully fund the costs associated with correcting the illicit connections.
- *Reporting.* Quarterly and annual reports on progress shall be submitted to PaDEP.
- *Penalties.* Failure to submit reports carries a penalty of \$100 dollars per day while failing to meet testing requirements carries a penalty of \$1,000 per day.

The Water Department has staffed up appropriately to carry out the illicit connection abatement program. All aspects of the Consent Order and Agreement are being complied with and the Department is ahead of schedule regarding the testing program. Through June 2001, the Water Department had tested 12,837 houses, found 319 illicit connections and repaired 311 of these connections. Quarterly and annual reports are provided to the PaDEP.

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. In part, as a result of the RMPs, the Water Department will eliminate the use of

gaseous chlorine at some of its facilities, with sodium hypochlorite becoming the replacement disinfectant. 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 NO_x 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.

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. During fiscal year 2001, the plant treated an average of approximately 196 mgd. As a requirement of the CSO Program Long Term Control Plan, the plant was stress tested in 1999.

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 chlorination. Key activities or improvements that have recently been made or are currently in progress include the following:

- (1) Projects recently completed:
 - Converted the secondary treatment system from the existing rotating biological contactor/activated sludge process to a new "anaerobic selector" suspended growth activated sludge system.
 - Rehabilitated primary tanks (Set One) and final setting tanks (Set Two).
 - Installed a new plant-wide security system, including new perimeter chain link fence, modifications to the plant's vehicle entrance gate and outdoor lighting.

- A chlorine minimization program has been implemented. Chlorine usage at the plant has dropped from approximately 1,100 tons per year in Fiscal Year 1994 to approximately 255 tons per year in Fiscal Year 2001. This program has resulted in both cost savings and water quality benefits.
 - A phosphoric acid chemical feed system has been installed and made operational. This system supplements the incoming wastewater with nutrients when required and ensures that the secondary treatment system performance is not impaired.
- (2) Projects either planned or ongoing include:
- Replacing the existing gaseous chlorine disinfection system with a new sodium hypochlorite system.
 - Rehabilitating the secondary treatment aeration system: This will allow for more efficient use of air and better control of the secondary treatment system.
 - Rehabilitating final settling tanks (section one) and return sludge pump variable frequency drives (VFDs).
 - HVAC improvements are underway at the Preliminary Treatment Building.

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 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.
- The digester cleaning project has been completed. This comprehensive project included all digester tanks at the plant.
 - Improvements were made to the mechanical components on the dissolved air flotation thickening system.
 - Barging improvements, including a new gangway at the pier, addition of spill rails on the barges and modified spill response procedures have been completed.
- (2) Projects either planned or ongoing include:

- A Closure Plan for the existing sludge lagoons is under review. The Water Department is assessing the impacts of the existing sludge lagoons on the water quality of the underlying groundwater aquifer. Periodic sampling and analysis of the lagoon contents, adjacent ground water wells, and the Frankford Creek is being conducted. The work is being performed in cooperation with PaDEP. A report will be provided to PaDEP at the end of 2001.
- A chiller replacement project for the Sludge Thickener Building is currently under design.
- A project to replace the digester gas piping is now being designed.

4. *Operation and Maintenance*

A process computer system is currently used for monitoring certain plant processes and for computing various process trends. The following unit processes are automated: return sludge, chlorine residual, primary pumping and portions 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. An on-site process control laboratory is also used to check and optimize plant operation.

As part of a Department-wide initiative, a new computerized maintenance management system was installed at the Northeast WPCP in July 2000. This new system known as MAXIMO, is being used to organize all plant maintenance activities and to help staff emphasize predictive and preventive maintenance. Data generated by the system will allow better management decisions and optimization of the maintenance program. Currently, planned maintenance accounts for approximately 70 percent of all the work orders.

The Northeast WPCP is operated seven days per week, three operating shifts daily. Approximately 120 total staff, including administrative, operations, and maintenance personnel are employed at the Northeast plant. Currently, there are 18 vacant positions. The Fiscal Year 2002 budget calls for 130 total staff positions.

5. *Odor Issues*

Improvements in operations and recently implemented capital facilities have aided plant staff in more effectively managing odor emissions. Additionally, plant staff has continued their proactive approach to minimizing odors and to address odor complaints quickly. As a result, odor violations have generally been reduced. For calendar year 2000 there were seven violations issued by the Philadelphia Air Management Services (AMS) and for the first eight months of 2001 only one violation has been issued. The Water

Department's commitment to odor prevention and minimization is further demonstrated by its creation of an Odor Committee which meets on a routine basis 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.
- Selective use of odor reducing chemicals.

Plant staff has strived to develop a good rapport with the neighboring community and with AMS staff.

6. 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. The facility was eligible and received \$2,810,000 for innovative/alternative funding from EPA. The facility came on-line on May 19, 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. Calpine is a large corporation that specializes in the construction and operation of natural gas-fired electric generating facilities.

The Cogeneration facility utilizes excess digester gas and generates electricity. Electricity generated at the Northeast plant will be used at the plant. As part of its agreement, approximately 10 percent of the treatment plant's electrical demand can be met by the cogeneration facility. The Northeast and Southwest WPCPs 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. The Water Department projects a total net power cost savings at the Northeast and Southwest plants of one million dollars annually.

H. Southeast WPCP

1. Capacity

The Southeast WPCP service area includes the eastern portion of Center City, the eastern portion of South Philadelphia, the majority of North Philadelphia, the majority of

Bridesburg/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 22.3 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 136 mgd of 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. As a requirement of the CSO Program Long Term Control Plan, the plant was stress tested in 1999 and early 2000. The average daily flow to the plant in fiscal year 2001 was 92.7 mgd. Historical data shows a decline in both wastewater volume and strength to the Southeast plant. This, coupled with full operation of the secondary facilities, has enabled the plant to achieve average annual effluent concentrations of less than 10 mg/l for BOD and TSS. Total pounds of BOD and TSS discharged to the Delaware River have declined by a factor of 10 since the mid-1970s. Sludge from the Queen Lane Water Treatment plant is discharged to the Southeast plant.

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.

In recent years, because of low secondary loadings, plant staff have been able 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 purge blowers for aeration. This change in operations has allowed the Water Department to stay in compliance of effluent permit limits and has resulted in significant power cost savings.

A number of process and operations modifications have been instituted since 1995, which have resulted in substantial cost reduction. These modifications have contributed to a decrease of approximately one million dollars in the total operating budget allocated to the Southeast plant since 1995. Some of these modifications are presented below:

- A chlorine minimization program has been implemented. In accordance with the plant's NPDES permit, the effluent residual chlorine concentration must not exceed 0.2 mg/l in years 3, 4 and 5 of the permit. The monthly average effluent residual chlorine concentration, for fiscal year 2001, was 0.15 mg/l. Chlorine usage at the plant has dropped 80 percent since the early 1990s. A chlorine feed system instrumentation modification involving a cascade feedback controller has contributed to

the drop in chlorine usage. This program has resulted in both cost savings and environmental benefits.

- The operation of the secondary treatment process on atmospheric air rather than cryogenic oxygen has resulted in: electrical power savings of approximately \$53,000 per month, savings in specialized technical service contracts, and reductions in maintenance support staff. Both of the two cryogenic oxygen facilities have been "mothballed."
- An energy management program has also been implemented. This program has focused on electrical cost savings through off-peak operations, load shedding and process modification and operational changes, even while increased wet weather flows are being diverted to the plant as a result of the goals and objectives of the CSO control program. Thus far the plant has realized an electrical cost savings of \$16,000 per month due to demand management changes. Since the early 1990's the plant has experienced a 35 percent reduction in electrical costs.
- Recently a building energy conservation program was instituted at this plant. This program included replacement of lighting systems throughout the plant with low energy fixtures.
- A program designed to handle comprehensive predictive maintenance is also in place at the Southeast plant. This program maintains plant reliability and reduces maintenance related costs.

Other projects either completed, ongoing or planned at the Southeast plant include the following:

- Replacement of the low voltage switchgear and battery system is complete.
- Mechanical repairs to influent pumps are complete.
- The sluice gates at diversion chambers have been replaced.
- Installation of a new plant security system has been completed. This system includes closed circuit television cameras at entry points, a new automated facility entry gate, and alarms at key entry doors.
- Replacement of the existing gaseous chlorine disinfection system with a sodium hypochlorite system is scheduled to be completed during 2003.
- Upgraded plant personnel communications system with the use of new radio systems equipped with repeaters.
- Replaced three process aeration blowers.

- Design modifications to the rotating scum pipes on the final clarifiers are currently being performed.
- Process control system utilizing distributed control is nearly complete.
- Electrical switchgear enclosure is under construction.
- Primary sludge pump replacement project is under construction.
- Grit screw rehabilitation project has recently been completed.
- Actuators and telescoping valves on the final clarifiers are being replaced with new equipment by plant staff.
- Addition of a phosphoric acid feed system has been completed.

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 and portions of the scum collection system on the final clarifiers. The laboratory houses equipment to evaluate plant biological and chemical processes and to generate regulatory reports. A new computerized maintenance management system (CMMS) known as MAXIMO has been purchased and installed. The staff has been trained and is using and refining the system. Planned maintenance work is averaging approximately 80 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 Southeast plant was one of three Water Department major facilities where a Capital Facilities Assessment Plan (CFAP) was implemented. The CFAP identified critical systems within the plant that need to undergo detailed inspection. Several of the systems

identified included the influent conduit, bar racks, chlorine mixing chamber and the effluent conduit. This work represents the beginning of a facility asset management program.

The Southeast WPCP is operated seven days per week, three shifts daily. There are 72 staff budgeted for fiscal year 2002, including administrative, operations and maintenance personnel.

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. It has been expanded and improved in recent years to handle a 200 mgd average annual design flow and a 400 mgd peak flow.

The fiscal year 1999 average flow to the Southwest WPCP was approximately 173 mgd, the fiscal year 2000 average flow was about 194 mgd, and the fiscal year 2001 flow was about 191 mgd. The Water Department's sewerage system facilities plan found that the Southwest WPCP can handle its present and projected future dry weather flow for the next 20 years. As a requirement of the CSO Program Long Term Control Plan, the plant was stress tested in 1999.

The Southwest plant also receives residual discharges from the Belmont Water Treatment Plant and is the only wastewater plant that still receives septage flows. Septage is hauled to the plant from regional suburban areas.

2. Liquid Stream Process

The plant processes include: influent pumping, screening, grit removal, pre-aeration/flocculation, primary clarification, secondary treatment using a pure oxygen activated sludge system, secondary clarification, effluent pumping, and chlorination. Due to the prohibitive costs associated with upgrading the grit and scum incineration equipment to meet Clean Air Act Regulations, the scum, grit, and screenings are currently being landfilled.

A chlorine minimization program has been implemented. Plant staff have developed and implemented process control systems and techniques to minimize chlorine used for effluent disinfection. The residual chlorine concentration has steadily trended downward from 0.5 mg/l in Fiscal Year 1999 to 0.25 mg/l in Fiscal Year 2001.

Key improvements and activities that have recently been completed, are currently in progress, or will soon be underway include the following:

Completed Projects

- All five of the effluent pumps have been rebuilt. Additionally, PLC based controls were also added to automate the effluent pumping station.

- Furnished and installed VFDs and PLC based controls for automation of the return sludge pumps.
- A new sodium hypochlorite disinfection facility has been constructed and made operational, replacing the previous gaseous chlorine disinfection facility.
- A new PC based process control computer has replaced the original Leeds and Northrop computer equipment.
- The second sludge storage tank has been rebuilt and placed into operation.
- The Sludge Thickener Building electrical switchgear has been rehabilitated.
- The HVAC system serving the south side of plant has been replaced and upgraded.
- Grit removal system piping and valves have been replaced at the Preliminary Treatment Building.

Ongoing Projects:

- The return sludge system valves and actuators are being replaced.
- A repair/replacement program is underway on the final clarifier launders.
- The final clarifier scum collection system is being repaired/replaced.
- The digester complex valves and actuators are being replaced.
- The cryogenic oxygen facility pneumatic controls are being refurbished.
- The influent pumping station is being rehabilitated.
- The HVAC system serving the north side of the plant is scheduled to be rehabilitated starting January 2002.

Planned Projects:

- An inspection and follow-up repair project is planned for the return sludge lines.
- The primary clarifier tanks will be rehabilitated.
- Power supply upgrades at various locations throughout the plant are being planned.

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 improvement projects that have been recently completed or are in progress include the following:

- Recent modifications were made to the digester heating system. These improvements will allow winter digester temperatures to stay within the limits required to provide a higher quality sludge to the Biosolids Recycling Center. These improvements will help maintain the mix of beneficial use products produced at the Biosolids Recycling Center and will also reduce sludge processing and recycling costs.
- Modifications are planned for both the primary and secondary clarifier scum collection systems.
- Modifications to a minor residuals processing pad located adjacent to the digester complex are ongoing. The minor residuals include:
 - Grit, screenings, and scum from all three wastewater plants.
 - Screenings and grit from all remote pumping stations.
 - Sewer cleaning debris.

Every two weeks, approximately 300 tons of minor residuals are mixed, limed and prepared for landfilling. This project will improve plant aesthetics and aid in minimizing odor generation. Improvements to the pad are scheduled to be completed by approximately June 2002.

- A Closure Plan for the existing sludge lagoons is under review. The Water Department is assessing the impacts of the existing sludge lagoons on the water quality of the underlying groundwater aquifer. Periodic sampling and analysis of the lagoon contents and adjacent ground water wells, is planned. The work is being performed in cooperation with PaDEP. A report is scheduled to be provided to PaDEP by the spring of 2003.

4. *Operation and Maintenance*

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 the effluent pumping station, digester tank feeding, effluent hypochlorite dosing, aeration tank oxygen feed, activated sludge wasting and the return sludge pumping system. In the near future, dissolved air flotation thickening and secondary scum collection will also be automated.

An on-site process control laboratory is used to check operating parameters. A process engineering staff analyzes data, determines operating set points, and establishes operations procedures.

Plant staff is utilizing a newly installed computerized maintenance management system (MAXIMO) to plan and schedule all maintenance activities. Plant staff have placed great emphasis on proactive maintenance. For fiscal year 2001, 85 percent of the maintenance work orders were planned. 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, vibrational analysis, infrared thermography, as well as others.

Plant Staffing levels have trended downwards in recent years. In fiscal year 1995, a total of 183 positions were budgeted. Currently 134 positions are budgeted, 49 fewer than in fiscal year 1995. A number of factors have made this reduction in staff possible, including new facilities and systems brought on-line, increased automation of systems, greater attention to maintenance, and increased experience of the staff. The budgeted staff level for fiscal year 2002 is adequate for the efficient operation and maintenance of the plant.

5. 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. This project received \$4,035,000 in innovative/alternative funding from EPA. These two facilities provide total savings in excess of one million dollars in electric power costs to the Water Department. Under special arrangements the cogeneration system can provide backup power to the plant if PECO power is lost.

J. Biosolids Recycling Center

1. Introduction

Philadelphia terminated the ocean disposal of sludge, now known as biosolids, in 1980, one year earlier than the federal deadline. 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. From the storage tanks, the liquid biosolids is pumped to the dewatering facility which houses 10 solid-bowl centrifuges. To enhance dewatering, polymer is mixed with the biosolids prior to the centrifuges. After processing through the centrifuges, the dewatered biosolids is ejected onto a horizontal belt conveyor and moved to a mixing building. The centrate from both the Southwest and the Northeast plant biosolids is pumped back to the Southwest plant.

The percent solids concentration in the liquid biosolids conveyed to the centrifuges has a significant effect on the performance of the units influencing such factors as: number of centrifuges required in service, polymer dosage, and biosolids cake dryness. In turn, these factors affect power costs, chemical costs, and labor costs. The solids concentration in the biosolids being delivered from the Northeast and Southwest plants has been lower than optimum. The Water Department recognizes the impact on cost to process thin biosolids and continues to undertake studies and evaluations aimed at increasing sludge thickness feed to the centrifuges.

Woodchips are mixed with the dewatered biosolids to make compost. This operation takes place in the mixing building which houses a system of belt conveyors and pug mills. The pug mills discharge the mixture of biosolids and woodchips outside the mixing building where it is moved by front-end loaders and dump trucks to the composting area and formed into piles. Blowers and air headers suck air into the static piles to establish the composting process. The process air drawn through the piles is passed through bio-filters, composed of finished compost, which reduce the odor and volatile organic compounds in the air stream. The composting process typically requires about 21 days.

Front-end loaders and dump trucks move the piles of composted biosolids to the curing area, located adjacent to the composting area. The composted biosolids is arranged in rows and the curing process proceeds naturally, typically taking a minimum of 30 days without any additional aeration.

After curing, the compost is again moved by front-end loaders and dump trucks to the drying area located adjacent to the curing area. The drying area is protected from the weather by a canopy structure. The duration of the drying operation is two weeks.

After drying, the cured finished compost is transported by front-end loaders to a screening system that separates woodchips from the compost. Eight trommel type screens are available to separate out the woodchips. The woodchips are then recycled back to the front of the process and mixed with freshly dewatered biosolids. The screened compost is placed in temporary storage, and samples are tested to ensure that regulatory parameters for

this product are met. It is also noted that to further enhance product quality, a windrow machine is now available and can be utilized at any stage of the compost process, following curing.

Key activities or improvements that have recently been made or are currently either in progress or planning, include the following:

- Engineering design of biosolids cake silos is complete and the silos are currently scheduled for construction in 2005. The silos will provide for more efficient operations in support of the biosolids land application program. The silos will also result in reduced VOC odor emissions.
- All centrifuge biosolids feed pumps, including VFDs, macerators and other appurtenances are being replaced. Project completion is scheduled for spring 2002.
- All polymer solution pumps are being replaced. Pump VFDs are also being replaced with speed controllers. The project is scheduled for completion by summer 2002.
- The centrate collection system was recently rebuilt and enlarged in order to increase centrifuge-processing capacity. The project has achieved objectives and the equipment is operating satisfactorily.
- A new dry polymer silo is under design and is currently scheduled for construction by late 2002. This system will eliminate materials handling problems associated with bagged polymer, and reduce polymer costs.
- A distributed control computer system is under design and is currently scheduled for construction by late 2002. This system will control the biosolids dewatering and mixing operations.
- The temperature monitoring system for the compost area will be upgraded during the next two years. Temperature monitoring and recording will be accomplished automatically and should result in reduced staffing needs.
- Replacement of the live bottom hoppers in the mixing building is currently under design.
- The control system for the stationary compost screens will be upgraded and improved. The new control system will consist of both electrical and electronic components. The project is in the design phase.
- All exposed steel in the processing area will be repainted in fiscal year 2002. The work, which is being undertaken by plant staff, has already begun and will serve to extend the life of the equipment.

- A plant-wide security system is under construction. The system includes new automated entrance gate, fencing, and closed circuit television at gates and process areas.
- Construction of a new vehicle wash building has been completed.
- Paving and drainage of the major process areas on the site improvements were completed during 1999.
- A study of emissions, including odorous and volatile organic compounds at the BRC indicated that the aeration system should be expanded to sustain aerobic conditions within the composting mix of biosolids and woodchips. The study concluded that excessive odor, inadequate stabilization of the biosolids, and poor moisture removal could result if the aeration system was not expanded. Therefore, one-sixth of the compost process area aeration system was upgraded and made operational. Post construction testing is now underway. Improvements to the remainder of the process area will await the results of the field-testing program.
- New dewatered “centerless” biosolids screw conveyors have also been installed.
- In order to increase the centrifuge system reliability and ability to produce dryer biosolids cake the following projects are currently underway:
 - Four new high-solids centrifuges will replace four of the existing centrifuges. The four new units are scheduled to be operational by approximately June 2002. The Water Department also has the option to replace two other existing centrifuges with two more new high-solids units.
 - Four existing centrifuges are being modified and upgraded for greater cake solids performance and increased overall reliability. The modifications include replacement of internal wear strips, new back drives and computer controls. The first two centrifuges have already been modified, and the remaining two machines will be available by fiscal year 2003.

3. *Product Utilization*

A biosolids product inventory system has been established which tracks products on the site on a weekly basis. The system consists of a new computer program which, together with processing and production plans, helps identify total product quantities available and that portion which must be stored. It is the responsibility of the Utilization Manager to develop outlets for the biosolids products. Presently, it is the Water Department's practice to

enter into annual contracts with optional annual extensions with private contractors to distribute the biosolids products.

Various outlets for the compost material and biosolids cake have been identified and others continue to be developed by the Utilization Section. The Water Department has entered into a concession agreement to market its screened compost (EarthMate) as a soil conditioner. Bulk applications of biosolids cake, which is uncomposted, have been developed for agricultural, mine reclamation, and landfill purposes.

Finding markets or means of utilizing biosolids and compost is an ongoing task that is influenced by changing regulatory requirements and market circumstances. EarthMate sales have continued to grow in Pennsylvania, from 14,000 tons in 1993 to 21,000 tons in 2001. In 2000, the New Jersey Department of Environmental Protection approved the distribution of EarthMate. Currently, the Water Department is precluded from distributing its biosolids products in Delaware pending changes to the regulatory climate.

The Water Department presently utilizes much of its biosolids through beneficial use outlets. The long-term goal of the Water Department is to continue operating the facility as a beneficial use products recycling center.

The biosolids are being produced into the following products:

Biosolids Products Distribution in Fiscal Year 2001

Product and Program	<u>Tons of Product Delivered</u>
Application of cake to Palmerton Superfund Site.	15,404
Application of cake to Maryland farms.	8,328
Application of cake to Pennsylvania farmlands	45,651
Heat drying trial	1,627
Commercial marketing of screened compost	18,004
Delivery of screened compost to give-away bins & community groups	4,791
Use of cake for reclaiming Pennsylvania mines	48,859
Landfill disposal of biosolids cake	<u>47,116</u>
Total	189,780

4. Operation and Maintenance

The BRC has recently been operating three shifts daily Monday through Friday. The BRC is staffed with a total of 131 administrative, operations, and maintenance personnel. The breakdown of the staff is as follows:

	<u>No. of Employees</u>
Materials Handling	48
Process Control	27
Maintenance	45
Administration	8
Utilization	<u>3</u>
	131

Several key processes are monitored by computer and used to support operator decisions. Preventive maintenance is actively practiced at the BRC.

As part of an ongoing program to maximize centrifuge performance, the Water Department regularly rehabilitates the centrifuge clutch and oil systems as well as their bowls and scrolls. Maintenance on the centrifuges is an ongoing process to keep them in optimal operating condition.

5. *Odor Issues*

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 three violations have been issued. These occurred on October 1, 1999, and August 5 and 10, 2001. These violations have been attributed to severe weather conditions (hurricane during October 1999 and extended heat wave during August 2001). 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.

The staff is currently reviewing the feasibility of adding ferric chloride to the centrifuges to enhance dewaterability and reduce odor potential. 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.

6. *The Federal 503 Sludge Regulations*

The EPA published new standards for the disposal of biosolids (40 CFR Part 503) in February 1993. The Part 503 Rule would apply to the Water Department's land application practice and may also apply to its landfilling practice. In February 1993, the Water

Department began to monitor the metals required to be analyzed under the Part 503 regulations. The Part 503 regulations also impose two additional requirements on biosolids producers: vector attraction reduction and pathogen reduction requirements. In complying with the pathogen reduction requirement, the Water Department has instituted fecal coliform testing of the biosolids cake and compost to document compliance with standards. All products are tested for pathogen standards prior to shipment. Anaerobic digesters at the Northeast and Southwest plants accomplish compliance with vector attraction standards.

It is possible in the future that Class B biosolids will become less acceptable for beneficial use programs. Among its investigations into biosolids processing enhancements, the Water Department is undertaking a four-year demonstration project with Eco-Technology (EcoTech). 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 seven 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. If successful, the EcoTech project could provide another environmentally acceptable alternative for the recycling of the Water Department's biosolids.

7. *Other Developments*

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 132 and a budget reduction from \$31.6 million in fiscal year 1993 to \$15 million in fiscal year 2001. Other cost reduction initiatives either underway or planned include:

- Centrifuge upgrade and optimization.
- Use of ferric salts to reduce polymer consumption and increase cake solids.
- Replace centrifuge feed pumps with those requiring less maintenance.
- Modernize VFDs for sludge feed pumps to reduce power.
- Reduce labor via instrumentation and automation.
- Modified polymer bidding protocol with an annual savings of \$800,000.
- Converted pump seals to the mechanical type, reducing maintenance while improving housekeeping and saving energy.

- Eliminated the use of one mgd of potable water for process needs by switching to a non-potable water source.

Additionally, total quality teams have been established to continually improve the cost-effectiveness of BRC operations.

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 street drain lines within the City limits. The Wastewater Collection section also operates and maintains all system storm and sanitary pump stations and township wastewater metering chambers. The Wastewater Collection section is sub-divided into four units. The units and their principal areas of responsibility are identified below:

- (1) Sewer Maintenance Unit. Is responsible for maintenance and repair of storm, sanitary, combined sewer and street drain lines.
- (2) Inlet Cleaning Unit. Responsible for cleaning all street drains.
- (3) Flow Control Unit. 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 Unit. Provides administrative and technical support to the other operating units.

2. *Sewer System Maintenance and Repair*

During the past several years, the Water Department has been increasing its efforts to improve the physical condition of the sewerage collection system. During the mid-1990s, the Water Department acquired videotaping equipment to assist in the prioritization and identification of the need for sewer reconstruction and for inspection of rehabilitated and newly constructed sewers. The Department commenced development of a rating system to assign priorities for improving the sewer system. Since that time, staff has gained valuable experience using the sewer inspection and videotaping equipment, and the sewer collector system priority programming procedures have been tested and continually refined. These accomplishments and the Department's increased emphasis on infrastructure maintenance, has allowed it to implement its current program of improving the condition of its sewers through a long-term re-building program.

The Flow Control Unit currently has five inspection crews dedicated to inspecting sewers as part of preliminary planning, which would lead to design improvements and rehabilitation, and also to post-construction inspection and routine maintenance. In the last three fiscal years (1999, 2000, and 2001) staff has averaged 59 miles of sewer inspection per year. In fiscal year 2001 the staff inspected 63 miles. In October 2001, a consultant will begin working with the Department to refine the sewer assessment and inspection program. The ultimate goal of the sewer assessment program is to develop a more consistent inspection rating system, and to assist the Department in setting up an organization that is capable of inspecting 150 miles of sewer per year. The experience gained will be used to properly size and equip Water Department staff continuing with the program.

The Sewer Maintenance Unit is responsible for repairs to street drains, manholes, relieving choked sewers and street drains and inspecting laterals. To more effectively provide service, the Sewer Maintenance Unit was recently reorganized. Crew sizes have been reduced and the number of crews has increased from 27 to 37. The Unit is now more consistently able to keep their work order backlog under 30 days. The reorganization has also allowed the Unit to dedicate three crews full time to planned work. The table below illustrates some of the results of the reorganization.

Table IV-3 Sewer Maintenance Unit Work Order History

<u>Maintenance Category</u>	<u>Fiscal Year</u>		
	<u>1999</u>	<u>2000</u>	<u>2001</u>
Street drains reconstructed	7,431	8,283	9,651
Sewer Manholes reconstructed	451	831	1,359

3. Combined Sewer Overflows

The Flow Control Unit is responsible for maintaining the 175 combined sewer regulators, 89 tide gates associated with CSOs in the tidal zone and the 26 storm relief structures (diversion chambers) in the collection system. As stated earlier in this report, the wastewater plant NPDES permits detail the requirements for monitoring, control and ultimate reduction of the pollution impact of CSOs.

Maintenance and operations of the CSO structures includes an ongoing inspection program and comprehensive maintenance of the CSO structures, performed at least once annually for each structure. A key goal in the maintenance of the CSO structures is to avoid dry weather overflows (DWO). Therefore, the maintenance program calls for routine and frequent inspections of the CSO structures and removal of any blockages to minimize the occurrence of DWO. The table below shows the downward trend in dry weather overflows directly attributable to improved maintenance of the CSO structures.

Table IV-4 History of Blockages Cleared At CSO Structures

	Fiscal Year			
	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>
Number of Blockages Cleared (Maintenance)	937	694	197	456
Number of DWO	35	43	29	22
Number of Inspections	10,746	8,750	8,347	9,518

Remote monitoring of CSOs has also been increased over time. Currently 94 CSO structures and 58 other sites (pump stations, rain gauges, etc.) are monitored remotely. Eventually, the monitoring system will include 263 sites. As more of the CSO structures are monitored, the Department will obtain early warning information resulting in even fewer occurrences of DWO. Additionally, fewer inspections will be required and the Flow Control Unit staff can concentrate on other preventive maintenance activities.

In 1998 the Flow Control Unit began a program to minimize tidal inflow. This program has the benefit of reducing flow to the wastewater plants (both dry and wet weather) and providing more storage capacity in the collector system. Studies identified that the emergency overflow window located above the tide gate at 51 sites was a source of inflow during selected high tides. Improperly seated or corroded tide gates was another source of inflow. Between 1997 and 2000 emergency overflow windows were fitted with new gates at 64 sites.

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 center will allow telemetered commands to be sent to site-specific, automated controls located throughout the collection and treatment facilities. These signals can be transmitted based upon an optimized response to rainfall patterns. Although all pump stations and computer controlled CSO structures are fully monitored and remotely controlled now, the RTC center will centralize these functions and add enhanced decision-making capabilities and control to key collection system facilities including, CSO regulators, pump stations and inter-district diversions. Once the RTC center is operational, the Flow Control Unit will be responsible for staffing, operating, and maintaining the center. A new building is being constructed at Fox Street to house the RTC. The structure and all computer, controls and signaling work is projected to be completed by 2003.

4. Wastewater/Storm Pumping Stations

The wastewater system includes 18 sanitary pumping stations and 3 stormwater pumping stations, and one small package treatment facility. The wastewater pumping stations range in capacity from 0.2 mgd to 195 mgd, and the stormwater pumping stations range in capacity from 5 to 630 mgd. Maintenance of these facilities is the responsibility of the Flow Control Unit. All the pumping stations including the Central Schuylkill Pumping Station are automated and remotely monitored 24-hours a day. Automated operation has increased pumping performance at the Central Schuylkill Pumping Station. Additional station automation has eliminated interceptor back-up and wet weather overflow incidents. Each pumping station is visited an average of three times per week to assure that equipment is functioning properly. Corrective maintenance is performed on an as-needed basis. Over the past 10 years, a pump rehabilitation program has been underway and it is planned that this rehabilitation program will be continued. The average frequency for pump equipment rehabilitation is 3.5 years. Reliability of the pumping stations was further increased in 1999 when emergency generators were installed. Preventive and predictive maintenance is routinely practiced, and 85 percent of the maintenance work orders are planned. Pump equipment availability averages 95 percent.

The maintenance program continues to be developed specific to the overall objectives set forth by the Water Department and the needs of the Flow Control Unit. In establishing this program, staff is in the process of collecting baseline data for all equipment, scheduling data readings, and sampling.

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 Consent Order and Agreement on illicit connections.

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. Since March of 1989, thresholds by which an industry

is considered to be a significant industrial user (SIU) have become stricter. 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 re-evaluation indicated that existing limits did not require revision.

The Water Department has issued final discharge permits to all categorical and significant users. Thus far, over 136 permits have been issued. The identification of SIUs is an ongoing process.

The IWU regularly monitors industrial users for compliance with effluent limitations through an inspection and sampling program, and strictly enforces these effluent limitations. 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.

All contract customers, large industrial, and certain other normal strength retail users are currently sampled to determine the quality of wastewater discharged to the system. The user charge rates are designed to reflect the costs of waste treatment. Industrial waste customers identified as having high-strength wastes are charged accordingly. Effective September 2001, the surcharge rates have decreased by 20 percent. Lower wastewater treatment and sludge recycling costs helped make the rate reduction possible. However, surcharge revenues will decline.

Private septage haulers are licensed in the City and spot-checked randomly to ascertain compliance with discharge standards. The IWU now issues permits to septage haulers. Chemical haulers are prohibited from discharging into the sewer collection system.

A standard spill response form has been developed and computer enhancements are underway. Past spill response inspection reports and spill clean-up methods are maintained in a spill incident file database. 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 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 2002-2007 involve total expenditures of \$756,108,000 at projected fiscal year 2002 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 the consent decrees have been completed. Accordingly, in recent years the Water Department has refocused its energies in the areas of potable water treatment 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.

B. Fiscal Years 2002-2007 Capital Improvement Program

The Water Department has initiated a comprehensive review and update of its six-year, Capital Improvement Program (CIP) for fiscal years 2002-2007. 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.

The sections that follow present a brief discussion on the key capital programming areas summarized in Table V-1.

**Table V-1 Capital Improvement Program
for Fiscal Years 2002-2007**

Engineering and Administration	\$ 105,048,000
Improvements to Treatment Plants	292,000,000
Reconstruction of Conveyance System	150,000,000
Reconstruction of Collector System	156,000,000
Storm Flood Relief	26,000,000
Expansion of Collector System	720,000
Expansion of Conveyance System	540,000
Large Meter Replacement Program	1,800,000
Vehicles	<u>24,000,000</u>
	\$756,108,000

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 those projects have also been identified in other chapters of this report.

3. *Reconstruction of 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 future 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. *Reconstruction of Collector System*

The Collector System replacement program is an ongoing project, the purpose of which is to replace old and worn out sewers. 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.

5. Storm Flood Relief

This project, which is ongoing, entails the construction of new storm flood relief sewers in flood-prone areas. The benefits of this program are control of excessive erosion, reduction of sewer maintenance activity, and minimization of citizen complaints related to chronic flooding.

6. Expansion of Collector System

This project, which is ongoing, entails the construction of new sanitary sewers to serve new developments and to relieve existing unsanitary conditions.

7. Expansion of Conveyance System

The purpose of this ongoing project is to both improve service to existing customers and to serve new ones.

8. Large Meter Replacement Program

This project includes the selected replacement of meters greater than one-inch in size. The Water Department has a scheduled replacement program depending upon the size and type of meter.

9. 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.

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, 2002, through June 30, 2007. Revenue projections are based on the existing schedules of rates for water and wastewater service, which became effective September 4, 2001, the schedules of rates for water and wastewater service that have been approved for implementation on July 1, 2002, and on July 1, 2003, and indicated future annual operating revenue increases 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 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 financial statements through fiscal year 2000, the latest available unaudited revenue and expense estimates for fiscal year 2001, and proposed operating and capital budgets for fiscal year 2002 which have been presented and approved by the City Council.

The Water Department operates on a modified accrual basis of accounting. Revenues are recorded on a receipts basis, 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 current Philadelphia Home Rule Charter, 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. Water and wastewater rates applicable to retail customers, including residential, commercial, industrial, charities and schools, the Philadelphia Housing Authority, and municipal service, which became effective beginning

September 4, 2001, were based in large part on the Black & Veatch studies. Rates applicable to wholesale water and wastewater customers were also developed by Black & Veatch and became effective July 1, 2001. The overall increase in system revenues resulting from these new rates is projected to amount to approximately 5 percent given the effective dates of the rate adjustments.

Prior to finalization of the existing rates, formal public hearings were conducted by an independent hearing officer. The hearing officer issued a "Report of the Hearing Officer in the matter of the Proposed Increase in Rates for the Water and Wastewater Utility for the City of Philadelphia in FY 2002, 2003, and 2004" dated August 8, 2001, which summarized the evidence presented during the rate proceedings and recommended a course of action. A final rate determination, dated August 24, 2001, was issued by the Water Commissioner. The rates which are to take effect on July 1, 2002, and on July 1, 2003, in accordance with the report of the Water Commissioner, are expected to provide overall revenue increases of approximately 7 percent in fiscal year 2003 and an additional 7 percent in fiscal year 2004.

One of the most significant aspects of the rate hearings, and the rates that were approved as a result of the hearings, was the redistribution of costs associated with the collection, conveyance, and treatment of stormwater from residential customers to non-residential customers. 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 over the past few years. The involvement of a citizen's advisory group, comprised of a diverse cross-section of business, institutional, and residential interests, was an integral part of these studies. 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 theoretically appropriate methodology which recognizes both gross and impervious property areas. The redistribution of stormwater costs from residential to non-residential accounts is recognized in the rates which have been approved and reflect a three step phase-in adjustment over the three year period of fiscal years 2002-2004.

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 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.

TABLE VI-1
GENERAL SERVICE
WATER AND WASTEWATER RATES

Monthly Service Charges

<u>Meter Size</u> inches	<u>Existing Water Rates (Eff. 9/4/01)</u> \$/month	<u>Existing Wastewater Rates (Eff. 9/4/01)</u> \$/month	<u>Combined Charge</u> \$/month
5/8 (a)	2.77	15.83	18.60
3/4	2.96	35.45	38.41
1	3.58	56.64	60.22
1-1/4	4.31	84.05	88.36
1-1/2	4.77	108.98	113.75
2	6.63	172.57	179.20
3	10.50	320.08	330.58
4	19.09	536.32	555.41
6	35.80	1,068.36	1,104.16
8	54.42	1,704.23	1,758.65
10	79.73	2,452.51	2,532.24
12	129.86	4,550.66	4,680.52

Quantity Charges

<u>Monthly Water Usage</u>	<u>Charge Per MCF \$/Mcf</u>	<u>Monthly Water Usage</u>	<u>Charge Per MCF \$/Mcf</u>
First 2 Mcf	13.41	All Billable Water Usage	12.77
Next 98 Mcf	10.63		
Next 1,900 Mcf	9.46		
Over 2,000 Mcf	7.07	<u>Wastewater Surcharge</u>	<u>Per Pound \$/lb</u>
		BOD in excess of 250 mg/l	0.190
		SS in excess of 350 mg/l	0.190

Mcf = 1,000 Cubic Feet = 7,480 Gallons
mg/l = milligrams per liter

(a) Approximately 96 percent of all retail customers have 5/8-inch meters.

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 wholesale customers became effective July 1, 2001, with additional increases approved for these customers effective July 1, 2002, and July 1, 2003. For purposes of revenue projections from wholesale customers beyond fiscal year 2004, the overall revenue increases shown in Table VI-8 of this report are assumed to be equally applicable 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 2002 through 2007 under rate schedules for water and wastewater service for General Service customers and Contract Service customers that became effective September 4, 2001, and July 1, 2001, respectively, and for the rates that have been approved to become effective in July 1, 2002, and July 1, 2003. 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 an anticipated cash receipts basis recognizing 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 2002 revenues from the City are expected to amount to approximately \$17,710,000. This includes \$6,046,000 in public fire protection charges. Existing schedules of charges also include a charge for private fire protection connections to the water system, the revenue from which is shown on Line 3 of Table VI-2.

TABLE VI-2
PROJECTED REVENUE
UNDER RATES EFFECTIVE SEPTEMBER 4, 2001
(in thousands of dollars)

Line No.		Fiscal Year Ending June 30					
		2002	2003 (a)	2004 (b)	2005	2006	2007
Operating Revenue							
Water Operations							
1	Metered Sales to General Customers	100,116	113,858	125,192	124,352	123,475	122,599
2	Municipal Service	3,434	3,944	4,326	4,326	4,326	4,326
3	Private Fire Meters	1,052	1,190	1,303	1,303	1,303	1,303
4	Public Fire Protection	6,046	6,607	7,208	7,208	7,208	7,208
5	Contract Service	3,795	5,139	5,688	5,688	5,688	5,688
6	Subtotal Water Service Revenue	114,443	130,738	143,717	142,877	142,000	141,124
7	Other Operating Revenue	5,112	5,120	5,110	5,090	5,070	5,050
8	Total Water Operations	119,555	135,858	148,827	147,967	147,070	146,174
Wastewater Operations							
9	Metered Sales to General Customers	192,572	206,716	215,937	215,001	213,867	212,731
10	Municipal Service	8,230	10,407	12,337	12,337	12,337	12,337
11	Contract Service	19,363	18,566	19,431	20,764	20,764	20,764
12	Excess Strength Service Charge	5,502	5,173	5,540	5,540	5,540	5,540
13	Subtotal Wastewater Service Revenue	225,667	240,862	253,245	253,642	252,508	251,372
14	Other Operating Revenue	16,115	16,088	16,061	16,034	16,008	15,981
15	Total Wastewater Operations	241,782	256,950	269,306	269,676	268,516	267,353
16	Total Operating Revenue	361,337	392,808	418,133	417,643	415,586	413,527
Nonoperating Income							
17	Interest Income - Capital Funds (c)	8,314	9,550	6,375	8,518	10,631	7,898
18	Interest Income - Operating Funds (d)	6,068	4,189	2,787	2,198	2,294	2,329
19	Total Nonoperating Income	14,382	13,739	9,162	10,716	12,925	10,227
20	Total Water Department Revenue	375,719	406,547	427,295	428,359	428,511	423,754

(a) Reflects scheduled water and wastewater rate increases effective July 1, 2002.

(b) Reflects scheduled water and wastewater rate increases effective July 1, 2003.

(c) Includes interest income at 2.5% annually on the Construction Fund and 5.0 % on the Debt Service Reserve Account.

(d) Includes interest income at 5% annually on the Revenue and Rate Stabilization Funds.

Contract water service, Line 5 of Table VI-2, consists of water sales to the Bucks County Water and Sewer Authority and to 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 Philadelphia Suburban Water Company, which is expected to commence 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. 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 Philadelphia Suburban Water Company is for up to 11 mgd of maximum day capacity and covers a term of 25 years, through 2026.

Other operating revenue 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. Contractual 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. The reduction in projected revenue from contract customers shown in fiscal year 2003 is due to the anticipated diversion of approximately 10 mgd of annual average day flow by DELCORA, the largest of the wholesale wastewater customers, from the Southwest Water Pollution Control Plant in Philadelphia to its own wastewater treatment plant in Delaware County. This is expected to be a permanent diversion and a loss in revenue of approximately \$2,000,000 annually.

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 revenue 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. Annual contributions from the Commonwealth of Pennsylvania Act 339 (the Clean Streams Program), are also included on Line 14 and are estimated at \$7,800,000 for each of the fiscal years 2002 through 2007.

Nonoperating revenue of the Water Department consists of interest and other income. Interest income recognizes the requirements set forth in the General Ordinance which

provides for the transfer of all interest earnings from investment of the Construction Fund, the Rate Stabilization Fund, and the Debt Reserve Account (in excess of \$4,138,000 in fiscal years 2002 and 2003 and in excess of \$4,994,000 in subsequent years) 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 5 percent has been assumed in estimating interest income on the various operating funds and accounts, and 5 percent for the Bond Reserve Account, and 2.5 percent for the Construction fund. Total nonoperating 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 2002 through 2007 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 2003 through 2007 costs for the capital improvement program are stated at estimated fiscal year 2002 cost levels. An annual inflation allowance of 3 percent has been recognized on Line 16 of Table VI-3 beginning with fiscal year 2003.

Table VI-4 shows the total projected capital improvement costs, a net cash flow adjustment, and the annual net 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 during the fiscal year in which the costs are budgeted.

Net 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 financing required for capital improvements through fiscal year 2007 is expected to be met by issuance of an additional \$605,000,000 of water and wastewater revenue bonds, including \$250,000,000 from the Series 2001A Bonds. The projected scheduling of the proposed bond issues are anticipated to be November 2001, for the Series 2001A Bonds and January 1, 2005, for a second proposed bond issue of \$355,000,000. Each bond issue is expected to provide financing of the capital program for the ensuing three-year period.

TABLE VI-3
CAPITAL IMPROVEMENTS PROGRAM
(in thousands of dollars)

Line No.	Fiscal Year Ending June 30						
	2002	2003	2004	2005	2006	2007	
WATERWORKS IMPROVEMENTS							
1	Engineering and Administration	8,054	8,054	8,054	8,054	8,054	8,054
2	Water Treatment Plant Improvements	16,000	20,000	20,000	20,000	20,000	20,000
3	Main Replacement	25,000	25,000	25,000	25,000	25,000	25,000
4	New Mains	90	90	90	90	90	90
5	Large Meters	300	300	300	300	300	300
6	Vehicles	2,000	2,000	2,000	2,000	2,000	2,000
7	Subtotal	51,444	55,444	55,444	55,444	55,444	55,444
WASTEWATER COLLECTION AND TREATMENT							
8	Engineering and Administration	9,454	9,454	9,454	9,454	9,454	9,454
9	Water Pollution Control Plant Improvements	26,000	30,000	30,000	30,000	30,000	30,000
10	Sewer Replacement	26,000	26,000	26,000	26,000	26,000	26,000
11	New Sewers	120	120	120	120	120	120
12	Storm Flood Relief	6,000	4,000	4,000	4,000	4,000	4,000
13	Vehicles	2,000	2,000	2,000	2,000	2,000	2,000
14	Subtotal	69,574	71,574	71,574	71,574	71,574	71,574
15	Total Improvements (Line 7 + Line 14)	121,018	127,018	127,018	127,018	127,018	127,018
16	Inflation Adjustment (a)		3,810	7,735	11,778	15,941	20,230
17	Inflated Total	121,018	130,828	134,753	138,796	142,959	147,248

(a) Cost estimates for fiscal years 2003 through 2007 are in terms of fiscal year 2002 cost levels.
An allowance is provided for inflation of 3 percent per year beginning with fiscal year 2003.

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
	<u>815,602</u>	<u>(25,387)</u>	<u>790,215</u>

Table VI-5 presents an estimate of the flow of funds in the Construction Fund of the Water Department for fiscal years 2002 through 2007. 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 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 5 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>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>
	Disposition of Bond Proceeds						
1	Proceeds from Sale of Bonds	250,000			355,000		
	Transfers:						
2	Debt Reserve Account (a)	13,150			24,426		
3	Cost of Bond Issuance	8,904 (b)			5,325 (c)		
4	Construction Fund (d)	227,946			325,249		
5	Total Issue	<u>250,000</u>			<u>355,000</u>		
	Construction Fund						
6	Beginning Balance	100,503	254,270	169,702	71,108	292,107	186,081
7	Transfer From Bond Proceeds	227,946			325,249		
8	Capital Account Deposit	16,237	16,587	16,937	17,287	17,637	17,987
9	Transfer From Residual Fund	20,000	20,000	18,000	16,000	18,000	18,000
10	Total Available	<u>364,686</u>	<u>290,857</u>	<u>204,639</u>	<u>429,644</u>	<u>327,744</u>	<u>222,068</u>
11	Net Financing Required	110,416	121,155	133,531	137,537	141,663	145,913
12	Ending Balance	<u>254,270</u>	<u>169,702</u>	<u>71,108</u>	<u>292,107</u>	<u>186,081</u>	<u>76,155</u>
	Debt Reserve Account						
13	Beginning Balance	149,068	162,218	162,218	162,218	186,644	186,644
14	Transfer From Bond Proceeds	13,150			24,426		
15	Ending Balance	<u>162,218</u>	<u>162,218</u>	<u>162,218</u>	<u>186,644</u>	<u>186,644</u>	<u>186,644</u>
	Interest Income						
16	Construction Fund (e)	4,476	5,369	3,052	4,576	6,057	3,324
17	Debt Reserve Account (f)	7,976	8,318	8,318	8,936	9,570	9,570
18	Total Interest Income	<u>12,452</u>	<u>13,687</u>	<u>11,370</u>	<u>13,512</u>	<u>15,627</u>	<u>12,894</u>

(a) Amount of Debt Reserve Account deposit estimated to be equal to maximum annual future debt service payment.

(b) Cost of bond issuance, insurance premium, and capitalized interest.

(c) Cost of bond issuance assumed at 1.5 percent of issue amount.

(d) Deposits equal proceeds from sale of bonds less transfers to the Debt Reserve Account and Costs of Issuance.

(e) Interest income is transferred to the Revenue Fund.

(f) Interest income is transferred to the Residual Fund in the amount of \$4,138,000 in FY2002 and FY2003 and \$4,994,000 in FY2004 through FY2007 with the balance being transferred to the Revenue Fund.

been assumed for the Debt Service Reserve Account, and 2.5 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. In fiscal years 2002 and 2003 only the interest earnings in excess of \$4,138,000 in the Debt Reserve Account are transferred to the Revenue Fund, with \$4,138,000 being transferred to the Residual Fund in accordance with the General Ordinance. Subsequent to fiscal year 2003, the amount required to be transferred to the Residual Fund increases to \$4,994,000.

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 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, including interdepartmental charges. Projections of operating expenses for the water and wastewater utilities for the fiscal years 2002 through 2007 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 2002 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 2002 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 wage adjustments of 3 percent take effect December 15, 2001, and July 1, 2002, respectively. A third wage adjustment of 4 percent will take effect July 1, 2003. Beyond fiscal year 2004, labor costs are assumed to increase at 3 percent annually. Electric power costs are expected to remain at current levels

through the study period, as the Water Department continues to implement energy saving operational efficiencies and has also negotiated favorable electric rates and discounts with its electric suppliers. All other purchased services, materials and supplies, and equipment expenditures are projected to increase at 2.5 percent annually from the adjusted 2002 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					
		2002	2003	2004	2005	2006	2007
Water Operations							
1	Personal Services	44,714	46,665	48,531	49,986	51,485	53,030
2	Purchased Services	19,046	19,260	19,544	19,836	20,135	20,441
3	Materials and Supplies	12,723	13,014	13,340	13,673	14,015	14,366
4	Equipment	1,388	1,419	1,455	1,491	1,528	1,567
	Contributions, Indemnities, Refunds						
5	and Taxes	2,333	2,391	2,451	2,513	2,576	2,640
6	Interdepartmental Charges	16,746	17,403	18,035	18,553	19,087	19,637
7	Subtotal Operating Expenses	96,950	100,152	103,356	106,052	108,826	111,681
8	Less: Liquidated Encumbrances	(4,800)	(4,800)	(4,800)	(4,800)	(4,800)	(4,800)
9	Operating Expenses - Water	92,150	95,352	98,556	101,252	104,026	106,881
Wastewater Operations							
10	Personal Services	69,250	72,278	75,170	77,423	79,746	82,139
11	Purchased Services	34,332	34,958	35,664	36,390	37,133	37,895
12	Materials and Supplies	13,415	13,723	14,067	14,419	14,779	15,149
13	Equipment	2,261	2,314	2,371	2,431	2,491	2,553
	Contributions, Indemnities, Refunds						
14	and Taxes	3,972	4,072	4,174	4,278	4,385	4,495
15	Interdepartmental Charges	31,125	32,343	33,513	34,476	35,467	36,487
16	Subtotal Operating Expenses	154,355	159,688	164,959	169,417	174,001	178,718
17	Less: Liquidated Encumbrances	(7,200)	(7,200)	(7,200)	(7,200)	(7,200)	(7,200)
18	Operating Expenses - Wastewater	147,155	152,488	157,759	162,217	166,801	171,518
19	Total Operating Expenses	239,305	247,840	256,315	263,469	270,827	278,399

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 2002 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 2002-2007. The proposed \$250,000,000 Series 2001A Bonds are anticipated to be issued November 2001. Debt service on this issue will be wrapped around the debt service payment schedule of outstanding revenue bonds to achieve a more level total annual debt service requirement over the term of the Series 2001A Bonds. This results in interest only payments on the Series 2001A Bonds through fiscal year 2010, a small principal payment in fiscal year 2011, with the balance of the principal payments occurring in fiscal years 2016 through 2031. For purposes of the Engineering Report, an interest rate of 5.50 percent has been assumed on the Series 2001A Bonds. The first interest payment on the Series 2001A Bonds from system revenues is projected to occur in fiscal year 2003. A second bond issue during the study period of \$355,000,000 is projected to be issued January 1, 2005. The assumptions for debt service payments on this bond issue reflect a 30-year amortization schedule, a 5.50 percent interest rate, and equal annual principal and interest payments. The first debt service payment for this second bond issue is projected to occur in fiscal year 2006. Table VI-7 summarizes the total revenue bond debt service projected for the study period.

It is anticipated that the Water Department will also issue refunding bonds in November 2001. The Water and Wastewater Refunding Revenue Bonds, Series 2001 B would defease an as yet undetermined principal amount of outstanding Revenue Bonds. The impact of this refunding is expected to result in overall lower annual debt service on outstanding Revenue Bonds than that shown in Table VI-7. Accordingly, the issuance of the Series 2001 B Bonds would have a positive impact on the financial forecast for the Water Department as projected in the subsequent section of this Engineering Report. That is, given the forecast level of Project Revenues discussed in Section F - Adequacy of Projected Revenues to Meet Projected Revenue Requirements Under General Ordinance Requirements, with the issuance of the Series 2001 B Bonds, the debt service coverage presently shown in Table VI-8 in Section F would be increased.

TABLE VI-7

**FUTURE DEBT SERVICE REQUIREMENTS
(in thousands of dollars)**

Line No.	Fiscal Year Ending June 30						
	2002	2003	2004	2005	2006	2007	
Revenue Bonds							
1	Outstanding Bonds	147,749	147,770	147,789	147,820	148,381	148,381
2	Series 2001 Bonds (a)		13,750	13,750	13,750	13,750	13,750
3	Projected Future Bonds (b)					24,426	24,426
4	Total Revenue Bonds	147,749	161,520	161,539	161,570	186,557	186,557
5	General Obligation Bonds	602					
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	149,962	163,131	163,150	163,181	188,168	188,168

(a) Based on \$250,000,000 bonds reflecting 5.5% interest, term of 30 years, interest only payments through fiscal year 2010, November 2001 sale date, and the first interest payment from system revenues due in FY2003.

(b) Based on \$355,000,000 bonds reflecting 5.5% interest, term of 30 years, level annual principal and interest payments, January 2005 sale date, and the first principal and interest payments due in FY2006.

Debt service requirements are also shown on Line 5 of Table VI-7 for the outstanding self-liquidating general obligation bonds applicable to the Water Department. The final debt service payment on these bonds will be made in fiscal year 2002. Lines 6 and 7 of Table VI-7 show the debt service payments on the outstanding Pennvest loans. Line 6 shows the annual debt service of \$384,000 which is related to a parity revenue bond issued through Pennvest dated April 30, 2000. Line 7 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 2002 requirement amounts to \$16,237,000 and increases during the period to \$17,987,000 in fiscal year 2007.

4. *City General Fund Deposit*

Under the General Ordinance, annual payments to the City General Fund are required from the Residual Fund in an amount not to exceed the lower of \$4,994,000 or annual interest earnings on the Debt Reserve Account. It should be noted that the \$4,994,000 limit has been reduced to \$4,138,000 under an administrative order and this reduced level of payment has been recognized for purposes of this report for fiscal years 2002 and 2003. Beginning in fiscal year 2004 the payment threshold returns to the \$4,994,000 level with the expiration of the administrative order.

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 2002 through fiscal year 2007 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					
		2002	2003	2004	2005	2006	2007
OPERATING REVENUE							
1	Water Service - Existing Rates	114,443	130,738	143,717	142,877	142,000	141,124
2	Wastewater Service - Existing Rates	225,667	240,862	253,245	253,642	252,508	251,372
3	Total Service Revenue - Existing Rates	340,110	371,600	396,962	396,519	394,508	392,496
Additional Service Revenue Required:							
	Year	% Incr.					
4	FY 2005	8.00%		31,722	31,561	31,400	
5	FY 2006	8.00%			34,086	33,912	
6	FY 2007	3.00%				13,734	
7	Total Additional Service Revenue Required				31,722	65,647	79,046
8	Total Water and Wastewater Service Revenue	340,110	371,600	396,962	428,241	460,155	471,542
9	Transfer From (To) Rate Stabilization Fund	41,346	35,578	23,329	(2,267)	999	(71)
10	Other Income (a)	35,609	34,947	30,333	31,840	34,003	31,258
11	Revenues	417,065	442,125	450,624	457,814	495,157	502,729
OPERATING EXPENSE							
12	Water and Wastewater Operations	191,434	198,094	204,767	210,440	216,273	222,275
13	Direct Interdepartmental Charges	47,871	49,746	51,548	53,029	54,554	56,124
14	Total Operating Expense	239,305	247,840	256,315	263,469	270,827	278,399
15	NET REVENUES AFTER OPERATIONS	177,760	194,285	194,309	194,345	224,330	224,330
DEBT SERVICE							
Senior Debt Service							
Revenue Bonds							
16	Outstanding Bonds	147,749	147,770	147,789	147,820	148,381	148,381
17	Pennvest Parity Loans	384	384	384	384	384	384
18	Series 2001 Bonds (b)		13,750	13,750	13,750	13,750	13,750
19	Projected Future Bonds (c)					24,426	24,426
20	Total Senior Debt Service	148,133	161,904	161,923	161,954	186,941	186,941
21	TOTAL DEBT SERVICE COVERAGE (L15/L20)	1.20 x	1.20 x	1.20 x	1.20 x	1.20 x	1.20 x
Subordinate Debt Service							
22	Outstanding General Obligation Bonds	602					
23	Pennvest Subordinate Loans	1,227	1,227	1,227	1,227	1,227	1,227
24	Total Subordinate Debt Service	1,829	1,227	1,227	1,227	1,227	1,227
25	Total Debt Service on Bonds	149,962	163,131	163,150	163,181	188,168	188,168
26	CAPITAL ACCOUNT DEPOSIT	16,237	16,587	16,937	17,287	17,637	17,987
27	TOTAL COVERAGE (L15/(L25+L26)	1.06 x	1.08 x	1.07 x	1.07 x	1.09 x	1.08 x
RESIDUAL FUND							
28	Beginning of Year Balance	22,480	14,681	9,488	5,735	3,612	4,137
29	Interest Income	640	240	25	0	0	0
Deposits							
30	End of Year Revenue Fund Balance	11,561	14,567	14,222	13,877	18,525	18,175
31	Deposit for Transfer to City General Fund (d)	4,138	4,138	4,994	4,994	4,994	4,994
32	Less: Transfer to Construction Fund	20,000	20,000	18,000	16,000	18,000	18,000
33	Less: Transfer to City General Fund	4,138	4,138	4,994	4,994	4,994	4,994
34	End of Year Balance	14,681	9,488	5,735	3,612	4,137	4,312
RATE STABILIZATION FUND							
35	Beginning of Year Balance (e)	103,177	61,831	26,253	2,924	5,191	4,192
36	Deposit From (To) Revenue Fund	(41,346)	(35,578)	(23,329)	2,267	(999)	71
37	End of Year Balance	61,831	26,253	2,924	5,191	4,192	4,263

- (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, interest only payments through fiscal year 2010, November 2001 sale date, and the first interest payment from system revenues due in FY2003.
(c) Based on \$355,000,000 bonds reflecting 5.5% interest, term of 30 years, level annual principal and interest payments, January 2005 sale date, and the first principal and interest payments due in FY2006.
(d) Transfer of interest earnings from the Bond Reserve Account must first go to the Residual Fund shown in Line 31 to satisfy the requirements for the Transfer to the City General Fund, with the balance going to the Revenue Fund included in Line 10.
(e) Excludes an annual interim internal loan of approximately \$45 million from the Rate Stabilization Account to the Revenue Account for working capital purposes.

Projections of annual operating revenue for water and wastewater service shown on Lines 1 and 2 of Table VI-8 include revenue under the rate levels currently approved through fiscal year 2004 as previously presented in Table VI-2. Lines 4 through 6 indicate additional service revenue required in each fiscal year to meet revenue requirements and rate covenant compliance during the study period. As indicated by the positive year-end balances shown on Line 30 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.

In order to comply with the General Ordinance covenants discussed above, as well as the requirements set forth in the City's agreement with Financial Guaranty, additional water and wastewater service revenue is necessary during the study period, and such requirements are reflected in the revenue projections shown on Lines 4 through 6 of Table VI-8. As shown on Lines 21 and 27, the levels of additional service revenue projected for the study period will provide for the debt service coverage and requirements of the Financial Guaranty agreement as described above, and as mentioned previously the positive year-end balances shown on Line 30 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 28-34) and the Rate Stabilization Fund (Lines 35-37) are also presented in Table VI-8 for the period through fiscal year 2007. As indicated on Line 34 of Table VI-8, subsequent to fiscal year 2003 a balance of between approximately \$3,000,000 and \$6,000,000 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 use 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 32 of Table VI-8.

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 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.

[THIS PAGE INTENTIONALLY LEFT BLANK]

APPENDIX III

**SUMMARIES OF CERTAIN PROVISIONS OF THE ACT;
CERTAIN DEFINITIONS AND SUMMARIES OF CERTAIN PROVISIONS OF
THE GENERAL ORDINANCE;
AND CERTAIN COVENANTS OF THE CITY OF PHILADELPHIA FOR THE
BENEFIT OF THE BOND INSURER**

[THIS PAGE INTENTIONALLY LEFT BLANK]

**Summaries of Certain Provisions of the Act;
Certain Definitions and Summaries of Certain Provisions of the General Ordinance
and Certain Covenants of the City of Philadelphia for the Benefit of the Bond Insurer**

The following are summaries of certain provisions of The First Class City Revenue Bond Act (the “Act”), the Restated General Water and Wastewater Revenue Bonds Ordinance of 1989 (the “General Ordinance”) and summaries of certain provisions of 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 the Act, the General Ordinance or the Covenant Agreement or of the provisions thereof summarized. Reference is made to the Act, the General 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, 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)**

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, *inter alia*, any building, structure, facility or improvement 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 nor create any debt or charge against the tax or general revenues of the City, nor create any lien against any property of the City other than the Project Revenues pledged therefor. 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

In order 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 to pay also 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 calculating projected annual Project Revenues for each year: (i) only 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) only 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) only 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 state the aggregate amount of 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 governing: (i) the segregation, custody, investment and disbursement of construction funds; (ii) the imposition, collection, custody, investment and disbursement of Project Revenues; (iii) the operation, maintenance, replacement and insurance of the project or projects; (iv) the establishment segregation, maintenance, custody, investment and disbursement of sinking and other special funds, accounts or reserves, (v) the issuance of additional priority or parity Bonds; (vi) the redemption, with or without premium, of Bonds and the requirements and effect of the call for redemption; (vii) the rights and remedies of obligees upon default; and (viii) such other provisions as the City may deem necessary or desirable in the interest of 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 and maintenance of a sinking fund or shall designate a previously established sinking fund for the payment of the interest on the Bonds as the same shall become due and payable and the principal of the Bonds at stated maturity or upon mandatory or optional redemption and for the payment of state taxes, if any, assumed by the City to be paid on the Bonds. Payments 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 and deposits of moneys in the sinking fund and other funds shall be added to such fund and may be applied in reduction of or to complete required deposits. Excess moneys in the sinking fund, including moneys for the payment of the interest, principal or premium of bonds unclaimed after the due date for two years and excess moneys shall be repaid to the City for its general purposes or applied as may be provided in the bond ordinance but such repayment of unclaimed moneys shall not discharge such claim which shall continue subject to applicable law. All moneys deposited in the sinking fund are subjected to a perfected security interest for the Bonds for which the fund is

established until properly disbursed. This perfected security interest also applies, under the terms of the Act, to moneys in the debt reserve account 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

Pursuant to the Act, prior to the delivery of 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, their transfer and the income therefrom, including any gains made on the sale thereof (other than underwriting profits in a distribution thereof), 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, the receipt of the income therefrom, or the realization of gains on the sale thereof.

Defaults and Remedies

Pursuant to the Act, if the City should fail or neglect to pay or cause to be paid the principal of or the interest on any revenue bonds as the same shall become due, 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 the Court; but a judgment rendered in favor of the bondholder in such an action is collectible only from Project Revenues. The holders of 25% in aggregate principal amount of the Bonds which are in default, whether because of failure of timely payment which is not cured within 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 the holders of all such bonds. On being appointed, the trustee shall be the exclusive representative for the affected bondholders and the individual right of action described above shall no longer be available. The trustee may, and upon written request of the holders of 25% in aggregate principal amount of the Bonds and upon being furnished with indemnity satisfactory to it, shall take one or more of the following actions, which, if taken, shall preclude similar action, whether previously or subsequently initiated, by individual holders of Bonds: enforce, by proceedings at law or in equity, all rights of the holders of the Bonds; bring suit on the Bonds; bring suit in equity to require the City to account for any pledged revenues received and/or to enjoin any acts or things which may be unlawful or in violation of the holders’ rights; and, after 30 days’ written notice to the City, declare the unpaid principal of all Bonds to be immediately due and payable, together with interest thereon at the rates stated in the Bonds until final payment, and upon the curing of all defaults, to annul such declaration.

In any suit, action or proceeding by or on behalf of the 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 disbursements 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 Project Revenues. 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 Commonwealth 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 BONDS ORDINANCE OF 1989**

**(Ordinance of the City Council approved
June 24, 1993 - Bill No. 544)**

CERTAIN DEFINITIONS

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.

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.

Bond or *Bonds* means, upon and after issuance of the first series of bonds under the General Ordinance, if and to the extent Outstanding at any time, (i) the Existing Bonds and (ii) all series of bonds authorized and issued under one or more supplemental ordinances amending and supplementing the General Ordinance.

Bond Committee means the Mayor, City Controller and City Solicitor or a majority thereof.

Bond Counsel means a firm of nationally recognized bond counsel selected by the City.

Bondholder or *Holder* means any registered owner of Bonds or holder of Bonds issued in coupon form at the time Outstanding.

Capital Account means the Capital Account within the Construction Fund.

Capital Account Deposit Amount means an amount equal to one percent (1%) of the depreciated value of property, plant and equipment of the System or such greater amount as shall be annually certified to the City in writing by a Consulting Engineer as sufficient to make renewals, replacements and improvements in order to maintain adequate water and wastewater service to the areas served by the System.

Capital Appreciation Bonds means any Bonds issued under the General Ordinance which do not pay interest either until maturity or until a specified date prior to maturity, but whose Original Value increases periodically by accretion to a final Maturity Value.

Charges Account means the Charges Account established within the Sinking Fund to provide for the payment of fees under any Credit Facility to the extent payment of such fees are not otherwise provided.

City Controller means the head of the City’s auditing department as provided by the Philadelphia Home Rule Charter.

City Solicitor means the head of the City’s law department as provided by the Philadelphia Home Rule Charter.

Code means the Internal Revenue Code of 1986, as amended.

Construction Fund means the Construction Fund established pursuant to the General Ordinance.

Consulting Engineer means a nationally recognized Independent registered consulting engineer or a nationally recognized Independent firm of registered consulting engineers, in either case having experience in the design and analysis of the operation of water and wastewater systems of the magnitude and scope of the System.

Credit Facility means any letter of credit, standby bond purchase agreement, line of credit, surety bond, insurance policy or other insurance commitment or similar agreement (other than a Qualified Swap or an Exchange Agreement) that is provided by a commercial bank, insurance company or other institution, with a current long term rating (or whose obligations thereunder are guaranteed by a financial institution with a long term rating) from Moody's and S&P not lower than the credit rating of any Series of Bonds which has no Credit Facility, to provide support for a Series of Bonds or for any issue of Subordinated Bonds, and shall include any Substitute Credit Facility.

Debt Reserve Account means the Debt Reserve Account of the Sinking Fund established in the General Ordinance.

Debt Reserve Requirement means with respect to all Bonds, an amount equal to the lesser of (i) the greatest amount of Debt Service Requirements payable in any one Fiscal Year (except that such Debt Service Requirement will be computed as if any Qualified Swap did not exist and the Debt Service Requirements attributable to any Variable Rate Bonds may be based upon the fixed rate of interest as set forth in the Supplemental Ordinance or Determination for such Bonds), determined as of any particular date or (ii) the maximum amount to be financed with proceeds of Bonds permitted by Section 148(d)(1) of the Code (or any successor provision).

Debt Service Account means the Debt Service Account of the Sinking Fund established in the General Ordinance.

Debt Service Requirements, with reference to a specified period, means:

- (a) amounts required to be paid into any mandatory sinking fund established for the benefit of Bonds during the period;
- (b) amounts needed to pay the principal or redemption price of Bonds maturing during the period and not to be redeemed at or prior to maturity through any sinking fund established for the benefit of Bonds;
- (c) interest payable on Bonds during the period, with adjustment for capitalized interest or redemption through any sinking fund established for the benefit of Bonds; and
- (d) all net amounts, if any, due and payable by the City under a Qualified Swap during such period.

For purposes of estimating Debt Service Requirements for any future period, (i) any Option Bond outstanding during such period shall be assumed to mature on the stated maturity date thereof, except that the principal amount of any Option Bond tendered for payment and cancellation before its stated maturity date shall be deemed to accrue on the date required for payment pursuant to such tender; and (ii) Debt Service Requirements on Bonds for which the City has entered into a Qualified Swap shall be calculated assuming that the interest rate on such Bonds shall equal the stated fixed or variable rate on the Qualified Swap or, if applicable and if greater than such stated rate, the applicable rate for any Bonds issued in connection with the Qualified Swap adjusted, in the case of a variable rate obligation, as provided in the General Ordinance.

Calculation of Debt Service Requirements with respect to Variable Rate Bonds shall be subject to adjustment.

Debt Service Withdrawal means the aggregate amount withdrawn from the Capital Account during a Fiscal Year and applied toward the payment of principal or redemption price of or interest on Bonds or toward the elimination of a deficiency in any reserve fund established for the benefit of Bonds.

Determination means a determination by the Bond Committee regarding certain matters relating to the issuance of a Series of Bonds, made pursuant to the General Ordinance or the Supplemental Ordinance providing for the issuance of such Series of Bonds.

Director Of Finance means the chief financial officer of the City as established by the Philadelphia Home Rule Charter.

Effective Date means when (but only when) all Prior Bonds issued under the Prior Ordinance have been paid or defeased as set forth in Section 10 of the Act.

Exchange Agreement means, to the extent from time to time permitted by applicable law, any interest exchange agreement, interest rate swap agreement, currency swap agreement or other contract or agreement, other than a Qualified Swap, authorized, recognized and approved by a Supplemental Ordinance or Determination as an Exchange Agreement and providing for (i) certain payments by the City from the Residual Fund and (ii) payments by an entity whose senior long term debt obligations, other senior unsecured long term obligations or claims paying ability, or whose obligations under an Exchange Agreement are guaranteed by an entity whose senior long term debt obligations, other senior unsecured long term obligations or claims paying ability are rated not less than A3 by Moody's, A- by S&P or A- by Fitch, or the equivalent thereof by any successor thereto as of the date the Exchange Agreement is entered into; which payments by the City and counterparty are calculated by reference to fixed or variable rates and constituting a financial accommodation between the City and such counterparty.

Existing Bonds means the bonds originally issued under the Prior Ordinance other than Prior Bonds, which Existing Bonds shall be specified in a certificate of the Director of Finance on the Effective Date and thereafter shall be secured by the General Ordinance.

Financial Consultant means a firm of investment bankers, a financial consulting firm, a firm of certified public accountants or any other firm which is qualified to calculate amounts required to be rebated to the United States pursuant to Section 148(f) of the Code.

Fiscal Agent means a bank or other entity designated as such pursuant to the General Ordinance or its successor.

Fiscal Year means the fiscal year of the City.

Fitch means Fitch Ratings and any successor thereto.

General Obligation Bonds means the general obligation bonds of the City issued and outstanding from time to time to finance improvements to the System and adjudged, pursuant to the Constitution and laws of the Commonwealth of Pennsylvania, to be self-sustaining on the basis of expected Project Revenues.

General Ordinance means the Restated General Water and Wastewater Revenue Bond Ordinance of 1989.

Government Obligations means direct obligations of, or obligations the principal of and interest on which are unconditionally guaranteed by, the United States of America, including but not limited to interest obligations of the Resolution Funding Corporation or any successor thereto.

Independent means a person who is not a salaried employee or elected or appointed official of the City; provided, however, that the fact that such person is retained regularly by or transacts business with the City shall not make such person an employee within the meaning of this definition.

Initial Deposit means the initial, one time, deposit to be made by the City from any source into the Rate Stabilization Fund upon the establishment of such Rate Stabilization Fund.

Interdepartmental Charges means the proportionate charges for services performed for the Water Department by all officers, departments, boards or commissions of the City which are required by the Philadelphia Home Rule Charter to be included in the computation of operating expenses of the Water Department.

Interim Debt means any bond anticipation notes or other temporary borrowing which the City anticipates permanently financing with Bonds or other long term indebtedness under the General Ordinance or otherwise.

Maturity Value with respect to Capital Appreciation Bonds means the amount due on the maturity date.

Moody's means Moody's Investors Service and any successor thereto.

Net Revenues for any period means the Project Revenues collected during such period and deposited into the Revenue Fund plus (x) the amounts, if any, transferred from the Rate Stabilization Fund into the Revenue Fund during, or as of the end of, such period and (y) interest earnings during such period on moneys in any of the funds or accounts established under the General Ordinance to the extent such interest earnings are credited to the Revenue Fund pursuant to the General Ordinance minus the sum of (a) Operating Expenses incurred during such period and (b) the amounts, if any, transferred from the Revenue Fund to the Rate Stabilization Fund during, or as of the end of, such period; provided, however that in determining such Net Revenues the Initial Deposit shall not reduce such Net Revenues.

Operating Expenses for any period means all costs and expenses of the Water Department necessary and appropriate to operate and maintain the System in good operating condition, and shall include, without limitation, salaries and wages, purchases of services by contract, costs of materials, supplies and expendable equipment, maintenance costs, costs of any property or the replacement thereof or for any work or project, related to the System, which is not properly chargeable to property, plant and equipment, pension and welfare plan and worker's compensation requirements, provisions for claims, refunds and uncollectible receivables and for Interdepartmental Charges, all in accordance with generally accepted accounting principles consistently applied, but Operating Expenses shall exclude depreciation, amortization, interest and sinking fund charges.

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 subseries of Bonds.

Sinking Fund means the Sinking Fund established pursuant to the General Ordinance.

Sinking Fund Installment means an amount so designated which is established pursuant to the General Ordinance.

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.

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.

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 then required to be made pursuant to paragraphs (c), (d) and (e) above to pay to the City the amount necessary to provide for the timely payment of the principal or redemption price of and interest on General Obligation Bonds;

(g) if the transfers in paragraphs (a) and (b) above are being made according to schedule, and following any transfer then required to be made pursuant to paragraphs (c), (d), (e) and (f) above, to transfer to the Rate Stabilization Fund such amount as the Water Commissioner may determine, the first

such determination to be made on the Effective Date and to include the balance on that date in the Renewal and Replacement Fund created under the Prior Ordinance and the unencumbered operating balance of the Water Department as of the end of the Fiscal Year immediately preceding the Effective Date;

(h) if the transfers in paragraphs (a) and (b) above are being made according to schedule, and following any transfer then required to be made pursuant to paragraphs (c), (d), (e), (f) and (g) above, to transfer to the Capital Account of the Construction Fund on June 20, of each Fiscal Year (or the first business day following June 20 if June 20 is not a business day) an amount equal to the sum of (i) the Capital Account Deposit Amount, (ii) the Debt Service Withdrawal for the preceding Fiscal Year and (iii) the Operating Expense Withdrawal for the preceding Fiscal Year, less any amounts transferred during the Fiscal Year to such Capital Account from the Residual Fund; and

(i) if the transfers in paragraphs (a) and (b) above are being made according to schedule, and following any transfer then required to be made pursuant to paragraphs (c), (d), (e), (f), (g) and (h) above and after providing for the repayment of any inter-Fund loans, to transfer as of June 30 of each year all remaining amounts to the Residual Fund.

Notwithstanding the foregoing, nothing in the General Ordinance shall prevent the City from directing the transfer of amounts on deposit in any fund or account established under the General Ordinance into the Rebate Fund in the amounts and at the times specified below under “Funds and Accounts — Rebate Fund.”

Sinking Fund

The 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 of 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(f) 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(f)(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

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 therefor, as may be necessary or appropriate to accomplish the funding or refunding and to comply with the requirements of Section 10 of the Act.

Subordinated Bonds

The City may, at any time, or from time to time, issue Subordinated Bonds for any purpose permitted under the General Ordinance and under the Act. Subordinated Bonds shall be payable out of, and may be secured by a security interest in and a pledge and assignment of, Project Revenues and amounts on deposit in the Subordinated Bond Fund; provided, however, that any such security interest in and pledge and assignment of Project Revenues and amounts on deposit in the Subordinated Bond Fund shall be, and shall be expressed to be, subordinate in all respects to the security interest in, and pledge and assignment of, the Project Revenues and the amounts on deposit in the funds and accounts (other than the Rebate Fund but including the Subordinated Bond Fund) established under the General Ordinance for the security of the Bonds (other than Subordinated Bonds).

Annual Reports

The City covenants with the Holders of all Bonds Outstanding under the General Ordinance that so long as such Bonds shall remain Outstanding it will, within 120 days following the close of each Fiscal Year of the City or as soon thereafter as is practicable (not exceeding 150 days following the close of each Fiscal Year), file with the Fiscal Agent a report of the operation of the System, setting forth, among other things, in reasonable detail financial data concerning, and consolidated for, the water and wastewater components of the System for such Fiscal Year, including a balance sheet and a statement of

income, expenses, and surplus (in each case not inconsistent with the statement of income, expenses, and other accounts of the City audited by the City Controller) prepared by the Water Department in accordance with generally accepted accounting principles consistently applied, showing compliance with the Rate Covenant, accompanied by a certificate of the Water Commissioner that the water and wastewater components of the System are in good operating condition and by a certificate of the Director of Finance that as of the date of such report the City has complied with all of the covenants in the General Ordinance and in all Supplemental Ordinances on its part to be performed. Such report shall be furnished to the Fiscal Agent in such reasonable number of copies as shall be required to meet the written requests of Bondholders therefor on a first come first served basis.

Disposition of Insurance Proceeds and Proceeds from the Sale of Assets

In the event that any assets of the System are destroyed or the City shall sell any assets of the System (except in the event of the sale or transfer of all or substantially all of the assets of the System to a municipal authority), the City shall, if the insurance proceeds or the proceeds from the sale of assets exceed 1.5% of the depreciated value of property, plant and equipment of the System, as shown on the financial statements of the City for the preceding Fiscal Year, apply such amounts, at the direction of the Director of Finance or such other chief fiscal officer of the City as may hereinafter be established (i) to the retirement of the principal amount of debt incurred in respect to the System; (ii) to the reconstruction, repair or replacement of assets of the System; or (iii) to the making of capital additions or improvements to the System.

Bonds Not to Become Arbitrage Bonds

The General Ordinance provides that the City covenants for the benefit of the Bondholders that, notwithstanding any other provision of the General Ordinance or any other instrument, it will neither make nor instruct the Fiscal Agent to make any investment or other use of amounts on deposit in the funds and accounts established by the General Ordinance or other proceeds of the Bonds which would cause any Series of Bonds issued under the General Ordinance as tax-exempt to be arbitrage bonds under Section 148 of the Code and the regulations thereunder to the extent that the same are applicable at the time of such investment; it will file any reports required to be filed pursuant to the Code; and it will not take or fail to take any action so as to render any Series of Bonds issued under the General Ordinance as tax-exempt to be arbitrage bonds under Section 148 of the Code.

Prohibition Against Certain Uses of Funds; Enforcement

(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.

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 2003 (the "Bonds") are insured by the Bond Insurer (as defined below). The Covenant Agreement (the "Covenant Agreement") dated March __, 2003 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 stock 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 March __, 2003, 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.

[THIS PAGE INTENTIONALLY LEFT BLANK]

APPENDIX IV

CERTAIN INFORMATION CONCERNING THE CITY OF PHILADELPHIA

[THIS PAGE INTENTIONALLY LEFT BLANK]

APPENDIX IV

**DESCRIPTIVE, FINANCIAL, DEMOGRAPHIC AND
ECONOMIC INFORMATION REGARDING
THE CITY OF PHILADELPHIA**

TABLE OF CONTENTS

	<u>PAGE</u>		<u>PAGE</u>
THE GOVERNMENT OF THE CITY OF PHILADELPHIA.....1		City Payments to School District.....36	
General.....1		City Loan to PGW36	
Elected and Appointed Officials1		City Payments to SEPTA37	
Government Services5		DEBT OF THE CITY.....37	
Local Government Agencies.....5		Short-Term Debt.....37	
School District.....6		Long-Term Debt37	
PENNSYLVANIA INTERGOVERNMENTAL COOPERATION AUTHORITY.....6		Other Long-Term Debt Related Obligations38	
General.....6		Recent Financings38	
Source of Payment of PICA Bonds.....8		CITY CAPITAL IMPROVEMENT PROGRAM ...43	
Five-Year Plans of the City9		LITIGATION44	
CITY FINANCIAL PROCEDURES9		APPENDIX A CITY SOCIOECONOMIC INFORMATION A-1	
Independent Audit and Opinion of the City		Introduction..... A-1	
Controller.....9		Quality of Life A-1	
Fund Structure10		Demographics A-2	
Principal Operating Funds.....10		The Economy A-3	
Basis of Accounting10		Employment A-4	
Budget Procedure11		Income A-9	
Awards.....12		Effective Buying Income and Household	
CITY CASH MANAGEMENT AND INVESTMENT POLICIES12		Income A-12	
Consolidated Cash.....12		Transportation A-12	
Investment Practices.....12		Water and Wastewater Systems A-13	
General Fund Cash Flow.....13		Municipal Solid Waste Disposal..... A-13	
DISCUSSION OF FINANCIAL OPERATIONS.....13		Housing A-14	
Fiscal Year 2002 Budget13		Economic Development A-17	
Fiscal Year 2003 Budget14		Philadelphia International Airport A-17	
Quarterly Reporting to PICA17		Hospitality and Tourism..... A-17	
REVENUES OF THE CITY17		Pennsylvania Convention Center..... A-17	
General.....17		Center City Hotel Development..... A-18	
Major Revenue Sources of Principal Operating		Avenue of the Arts A-18	
Funds (Debt Related)17		Penn’s Landing Waterfront..... A-19	
Revenues from City-Owned Systems21		New Stadium and Ballpark A-19	
Philadelphia Parking Authority21		New Center City Skyscrapers..... A-19	
Assessment and Collection of Real and		TJ Maxx Distribution Center..... A-19	
Personal Property Taxes22		Special Economic Development Zones A-19	
EXPENDITURES OF THE CITY.....30		Philadelphia Industrial Development	
Personal Services (Personnel).....30		Corporation..... A-20	
Labor Agreements31		Urban Industry Initiative A-20	
Employee Benefits33		The Office of Defense Conversion	
Municipal Pension Fund (Related to All		Activities A-21	
Funds).....33		Hospitals and Medical Centers..... A-22	
Purchase of Services36		Additional Projects Under Construction..... A-24	

[THIS PAGE INTENTIONALLY LEFT BLANK]

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 General Accounting Office, and GAAS, generally accepted auditing standards promulgated by the

American Institute of Certified Public Accountants. As of June 30, 2002, the Office of the City Controller had 125 employees, including 73 auditors, 41 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; oversight of pension administration as Chairperson of the Board of Pensions and Retirement; and the appointment and supervision of the City Treasurer.

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. 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.

Janice D. Davis, Secretary of Financial Oversight and Director of Finance, served as Chief Financial Officer for the Dallas Independent School District for one and a half years prior to assuming her current position in May 2000. Prior to that, she served as the Director of Finance and Budget for the Dallas/Fort Worth International Airport. From 1992-1995, Ms. Davis served the City of Houston, first as the Director of General Accounting in the Controller's Office and, later as Deputy Director of Financial Services. She received a B. S. in Accounting from the University of New Orleans. She is a Certified Public Accountant and Government Financial Manager.

Nelson A. Diaz, is the City Solicitor, and was most recently a partner in the law firm of Blank Rome Comisky & McCauley LLP. He was previously appointed by President Clinton as the General Counsel for the United States Department of Housing and Urban Development, where he managed over 500 lawyers. Before that he was a Judge in the Trial Division, Court of Common Pleas, First Judicial District of Pennsylvania, elected in 1981. On the Common Pleas Court, he was Administrative Judge of the Trial Division. He is the first person of Puerto Rican ancestry to be admitted to the Bar in Pennsylvania and the first Hispanic Judge in the Court of Common Pleas in Philadelphia. Judge Diaz was also Special Assistant to Vice President Walter F. Mondale, and prior to that a Public Defender. Judge Diaz was born and raised in Harlem, New York. He received a B.S. in accounting from St. Johns University in 1969, and a J.D. from Temple University School of Law in 1972. His professional memberships include the Philadelphia, Pennsylvania and American Bar Associations, the Bar of the Supreme Court of the United States, the National Hispanic Bar Association, and others.

Philip R. Goldsmith, Managing Director, was appointed February 2003. Mr. Goldsmith served as the Acting Executive Director of Fairmount Park from September 2002 to January 2003. From November 2000 to December 2002, he served as Interim Chief Executive Officer for the School District of Philadelphia. Prior to his appointment as Interim CEO, Mr. Goldsmith served from 1997 to 2000 as the managing principal of Right Management Consultants where he was responsible for overseeing the company's Mid-Atlantic operations. From 1994 to 1997, Mr. Goldsmith was chief operating officer for Diversified Search Companies, an executive recruiting firm. Mr. Goldsmith gained extensive banking experience working for PNC Bank Corporation from 1982 through 1994, rising to the level of President of the credit card subsidiary and the head of consumer banking. He served from 1979 through 1982 as Deputy Mayor for Policy and Planning for the City, and previous to that was a journalist for *The Philadelphia Inquirer*. He served as Executive Director of the Philadelphia Bar Association from 1973 to 1976 and served as Chairman of the Greater Philadelphia First/Philadelphia School District Oversight Committee on Management and Productivity and currently serves on the Board of Philadelphia Futures. He graduated with a Juris Doctor from George Washington University Law School in 1969 and a Bachelor of Arts in accounting from Pennsylvania State University in 1966.

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.

James Cuorato, Director of Commerce and City Representative, was appointed in July 2000. Prior to serving in his current position Mr. Cuorato served as Vice President of the Penn's Landing Corporation from 1994 – 2000. Mr. Cuorato also served the City of Philadelphia's Department of Commerce in the capacity of First Deputy Director from 1986 – 1994. Mr. Cuorato also spent 6 years with the Philadelphia Industrial Development Corporation. Mr. Cuorato holds a Master's Degree in Business Administration from Drexel University and a Bachelor's Degree from Saint Joseph's University.

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 masters 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 of architecture degree 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.

Corey Kemp, City Treasurer, was appointed in April 2002. Mr. Kemp served as the Deputy City Treasurer for the City of Philadelphia from June 2000 to April 2002. Prior to coming to the City of Philadelphia, Mr. Kemp served as the Finance Director and Treasurer for West Goshen Township, Pennsylvania for two and a half years. Mr. Kemp worked for the City of Reading, Pennsylvania from

1991 to 1997 where he served in various capacities, including Accounting Manager, Treasury Manager, and Acting Finance Director. Mr. Kemp holds a Bachelor of Business in Accounting from Alvernia College and a Masters in Business Administration from West Chester 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"). 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 the construction 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 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 will be 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 fund the City's Indemnity Fund and the "Day Backward/Day Forward Program."

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 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.

As of the close of business on June 30, 2002, the principal amount of PICA bonds outstanding was \$840,700,000.

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 1992 through 2002 is set forth below:

<u>Year</u>	<u>Amount</u>
1992	\$169.0 million
1993	185.1 million
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

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 (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 following table lists each Five-Year plan.

<u>Plan</u>	<u>Plan Fiscal Years</u>
Original Five-Year Plan	1992-1996
Second Five-Year Plan*	1994-1998
Third Five-Year Plan	1995-1999
Fourth Five-Year Plan	1996-2000
Fifth Five-Year Plan	1997-2001
Sixth Five-Year Plan	1998-2002
Seventh Five-Year Plan	1999-2003
Eighth Five-Year Plan	2000-2004
Ninth Five-Year Plan	2001-2005
Tenth Five-Year Plan	2002-2006
Eleventh Five-Year Plan	2003-2007
Twelfth Five-Year Plan	2004-2008

* Also included Fiscal Year 1993

The Twelfth Five-Year Plan was presented to City Council by the Mayor on January 28, 2003, but has not yet been approved by City Council or PICA. In the Twelfth 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 Comprehensive Annual Financial Reports and Notes therein.

Independent Audit and Opinion of the City Controller

The City Controller has examined and expressed opinions on the general purpose financial statements of The City of Philadelphia contained in the City’s Comprehensive Annual Financial Report for Fiscal Years 1997, 1998, 1999, 2000 and 2001 and The City of Philadelphia’s basic financial statements for fiscal year 2002. 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 the 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.

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 other City purposes.

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.

Basis of Accounting

The City’s basis of accounting for annual reporting purposes is as follows:

- A. Governmental Funds, Expendable Trust and Agency Funds account for their activities using a current financial resources measurement focus and the modified accrual basis of accounting. With this measurement focus, only current assets and current liabilities generally are included on the balance sheet. Operating statements of these funds present increases (i.e. revenue and other financing sources) and decreases (i.e. expenditures and other financing uses) in net current assets. Using modified accrual accounting means 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 under accrual accounting. Debt service expenditures, as well as expenditures related to compensated absences and claims and judgments, are recorded when payment is due. However, the expenditures may be accrued if they are to be liquidated with available resources.

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. Imposed nonexchange revenues such as real estate taxes are recognized when the enforceable legal claim arises 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.

- B. Proprietary Funds, Pension Trust Funds and Non-Expendable Trust Funds are accounted for on a flow of economic resources measurement focus. With this measurement focus, all assets and all liabilities associated with the operation of these funds are included on the balance sheet. Fund equity (i.e. net total assets) is segregated into contributed capital and retained earnings components. Propriety fund-type operating statements present increases (e.g. revenue) and decreases (e.g. expenses) in net total assets. These funds use the accrual basis of accounting where revenues are recognized in the accounting period in which they are earned and expenses are recognized at the time liabilities are incurred. Under GASB Statement No. 20, "Accounting and Financial Reporting for Proprietary Activities," Propriety Funds will continue to follow 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 uncollectible accounts, are recognized as billed on the basis of scheduled meter readings. Aviation revenue from Passenger Facility Charges is reserved for capital purposes. Pension Trust Funds recognize employer and plan member contributions and benefits and refunds paid in the period in which they are due and payable.

Budget Procedure

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 operating budget for the next Fiscal Year is prepared by the Mayor and must be submitted to City Council for adoption at least ninety days before the end of the Fiscal Year. 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.

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 18 for a summary of the City's capital improvement program for the Fiscal Years 2003 through 2008.

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 first 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, 2001. 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 Finance Department.

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 Investment Policy.

The Policy provides for an ad hoc Investment Committee consisting of the Director of Finance, City Treasurer and the two Deputy City Treasurers 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 2002 Budget

The City's Fiscal Year 2002 budget was approved by City Council on March 22, 2001. This budget was prepared by the City in conjunction with the Tenth Five-Year Plan, which was approved by PICA on May 15, 2001. The Tenth Five-Year Plan reflects a fund balance of \$21.1 million at the end of Fiscal Year 2006.

The adopted General Fund budget for Fiscal Year 2002 including prior year adjustments, was balanced for the tenth consecutive year without a deficit elimination grant from PICA. In preparing the budget for Fiscal year 2002, the City took a conservative approach to revenue estimation while also reflecting revenue enhancement and operating expense reduction measures identified in the Tenth Five-Year Plan.

On August 15, 2002, the City issued its Quarterly City Managers Report which reported Fiscal Year 2002 results through June 30, 2002.

The City ended Fiscal Year 2002 with a fund balance in the General Fund of \$139.0 million; a decrease of \$91 million from the Fiscal Year 2001 fund balance. A copy of the most recent Quarterly City Managers report may be obtained from the Office of the City Treasurer.

One of the largest causes of the decreases was a delay in the receipt of \$45 million in reimbursements from the State government. If the City had received its reimbursement for those costs on time, its FY'02 fund balance would have been \$184 million, about \$7 million lower than the amount the City projected when it introduced the FY '03 -'07 Five-Year Financial Plan in January.

Changes on both the revenues and expenditures sides caused the decrease in fund balance. While revenues were declining, expenditures were increasing by about \$99 million from \$2.88 billion in FY '01 to \$2.98 billion in FY '02. The largest single increase in expenditures was the \$45 million contribution made to the School District as a result of the partnership entered into by the City and the State. Excluding the contribution to the School District, the City's expenditures grew by under two percent from FY '01 to FY '02.

Fiscal Year 2003 Budget

The City's Fiscal Year 2003 budget was approved by City Council on May 2, 2002 and signed by the Mayor on May 15, 2002. This budget was prepared by the City in conjunction with the Eleventh Five-Year Plan. The Eleventh Five-Year Plan, which covers Fiscal Years 2003-2007, was approved by PICA on June 18, 2002. The City currently estimates that revenues will be \$3,023.7 million for Fiscal Year 2003 and that appropriations will be \$3,085.5 million. The Eleventh Five-Year Plan reflects a fund balance of \$5.0 million at the end of Fiscal Year 2007.

Table 1
City of Philadelphia
General Fund
Summary of Operations (Legal Basis)
(Amounts In Millions)

	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>Adopted Budget 2003</u>
REVENUES							
Real Property Taxes	\$ 354.8	\$ 333.9	\$ 342.6	\$ 353.6	\$ 363.4	\$ 373.6	349.7
Personal Property Taxes	3.4 ^(a)	0.0	0.0	0.0	0.8	0.0	0.0
Wage and Earnings Tax	872.5	914.3	934.3	973.0	1,047.2 ^(c)	1,006.0	1,028.3
Net Profits Tax	12.8	12.6	15.5	12.7	11.8	13.4	10.9
Business Privilege Tax	246.4	237.4	254.5	290.1	314.0 ^(c)	295.8	299.2
Sales Tax	91.4	94.5	101.4	103.7	111.3	108.1	112.5
Other Taxes ^(b)	93.9	122.1	118.3	123.5	130.0 ^(c)	148.2	130.9
Total Taxes	<u>1,675.2</u>	<u>1,714.8</u>	<u>1,766.6</u>	<u>1,856.6</u>	<u>1,977.7</u>	<u>1,945.4</u>	<u>1,931.5</u>
Locally Generated Non-Tax Revenue	178.7	180.9	193.1	194.9	204.5	207.1	198.9
Revenue from Other Governments	546.4	579.0	606.4	678.0	748.8	687.7	868.7
Receipts from Other City Funds	24.5	22.5	61.9	26.0	24.0	24.7	24.6
Total Revenue	<u>2,424.8</u>	<u>2,497.2</u>	<u>2,628.1</u>	<u>2,755.5</u>	<u>2,955.1</u>	<u>2,866.9</u>	<u>3,023.7</u>
OBLIGATIONS/APPROPRIATIONS							
Personal Services	970.4	974.2	1,018.4	1,071.8	1,173.3	1,188.3	1,197.2
Purchase of Services	735.9	736.0	794.0	848.9	871.8	920.5	1,013.7
Materials, Supplies and Equipment	72.4	76.1	85.2	79.7	84.0	80.0	79.6
Employee Benefits	456.7	471.0	488.1	493.8	483.4	485.8	528.1
Indemnities, Contributions and Grants	84.0	79.9	90.2	69.9	82.4	123.8	95.7
City Debt Service	91.1	84.1	84.2	91.5	88.2	101.8	111.5
Other	29.7	29.5	29.3	29.2	72.9	30.2	32.4
Payments to Other City Funds	23.8	28.8	27.1	26.4	25.5	50.7	27.5
Total Obligations/Appropriations	<u>2,463.9</u>	<u>2,479.6</u>	<u>2,616.6</u>	<u>2,711.2</u>	<u>2,881.5</u>	<u>2,981.1</u>	<u>3,085.5</u>
Operating Surplus for the Year	(39.2)	17.6	11.5	44.3	73.6	(114.2)	(61.8)
Net Adjustments – Prior Year	49.5	22.8	25.0	45.1	(138.7) ^(d)	23.2	32.0
Funding for Contingencies	0.0	0.0	0.0	0.0	0.0	0.0	(161.6)
Cumulative Fund Balance Prior Year	118.5	128.8	169.2	205.7	295.1	230.0	194.8
Cumulative Adjusted Year End Fund Balance	<u>\$ 128.8</u>	<u>\$ 169.2</u>	<u>\$ 205.7</u>	<u>\$ 295.1</u>	<u>\$ 230.0</u>	<u>\$ 139.0</u>	<u>\$ 0.0</u>

(a) Final year of collection of Personal Property Taxes. See "REVENUES OF THE CITY-Assessment and Collection of Real and Personal Property Taxes."

(b) Includes Real Estate Transfer Tax, Parking Tax, Amusement Tax, and Other Taxes.

(c) Accounting accrual changes required by GASB #33 resulted in additional one-time tax revenue accruals in FY2001. (Wage Tax, \$50.4 million; Business Privilege, \$5.2 million; Other Taxes, \$4.3 million)

(d) Reflects GASB # 33's impact on prior year accruals.

FIGURES MAY NOT ADD DUE TO ROUNDING

Table 2
City of Philadelphia
Principal Operating Funds (Debt Related)
Summary of Operations
(Legal Basis)
(Amounts In Millions)

	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>Adopted Budget 2003</u>
REVENUES							
General Fund	\$2,424.8	\$2,497.2	\$2,628.1	\$2,755.5	\$2,955.1	\$2866.9	\$3,023.7
Water Fund ^(a)	384.0	398.7	402.3	414.0	410.3	404.2	453.0
Aviation Fund ^(b)	128.6	131.0	147.5	154.3	180.6	184.2	281.5
Other Operating Funds ^(c)	22.0	23.8	25.3	24.5	29.1	35.8	39.5
Total Revenue	<u>2,959.4</u>	<u>3,050.7</u>	<u>3,203.2</u>	<u>3,348.3</u>	<u>3,575.1</u>	<u>3491.1</u>	<u>3,797.7</u>
OBLIGATIONS/APPROPRIATIONS							
Personal Services	1,098.4	1,101.9	1,153.3	1,208.6	1,321.4	1339.1	1,366.8
Purchase of Services	836.3	843.5	903.8	966.4	992.2	1050.3	1,166.5
Materials, Supplies and Equipment	117.5	122.2	129.9	124.1	127.1		138.4
						121.9	
Employee Benefits	504.9	520.8	541.4	546.3	538.1	541.8	595.7
Indemnities, Contributions and Taxes	89.5	86.2	98.7	77.7	88.1	129.1	108.1
Debt Service ^(d)	256.9	253.4	273.0	289.8	296.2	330.7	383.3
Other	29.7	29.5	29.3	29.2	72.9	30.3	32.9
Payments to Other City Funds	77.2	92.1	64.3	70.6	75.5	97.5	92.8
Total Obligations/Appropriations	<u>3,010.3</u>	<u>3,049.6</u>	<u>3,193.8</u>	<u>3,312.7</u>	<u>3,511.5</u>	<u>3640.7</u>	<u>3,884.5</u>
Operating Surplus (Deficit) for the Year	(50.9)	1.1	9.3	35.6	63.6	(149.6)	(86.8)
Net Adjustments Prior Year	65.8	41.0	43.6	58.7	(122.8)	43.1	47.2
Funding for Contingencies	0.0	0.0	0.0	0.0	(0.0)	0.0	(161.6)
Cumulative Fund Balance (Deficit) Prior Year End	<u>140.9</u>	<u>155.8</u>	<u>197.9</u>	<u>250.9</u>	<u>330.3</u>	<u>289.6</u>	<u>241.3</u>
Cumulative Adjusted Year End Fund Balance (Deficit)	<u>\$ 155.8</u>	<u>\$ 197.9</u>	<u>\$ 250.9</u>	<u>\$ 345.2</u>	<u>\$ 271.1</u>	<u>\$ 183.1</u>	<u>\$40.1</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. The City has determined that only \$4,138,000 per year shall be transferred from the Water Fund to the General Fund provided certain other conditions are met.

(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’s most recent quarterly report was submitted to PICA on February 15, 2003 and reported no adverse variance from the Eleventh Five-Year Plan.

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 3 for revenues by major source for Fiscal Years 1993-2003 and Table 4 for General Fund tax revenues for Fiscal Years 1997-2003. The following description does not take into account revenues in the Non-Debt Related Funds. See Table 5 for tax rates for Fiscal Years 1993 through 2002.

Real Property Taxes — The City levies real estate taxes on all taxable real property located within its boundaries. For Fiscal Year 2002, the rate for the City is 37.45 mills and the rate for the School District is 45.19 mills. The City is shifting an additional 2.71 mills to the School District in Fiscal Year 2003 to provide \$25 million of the \$45 million in additional funding the City pledged to provide to the School District as part of its School District agreement with the Commonwealth. In Fiscal Year 2002, the full \$45 million in additional funding was provided as a contribution because it was too late in the fiscal year for the City to change its mileage allocation. The mileage shift would increase the School District's portion of the tax from 4.519 percent to 4.79 percent and the City's portion of the tax would decrease from 3.745 percent to 3.474 percent. At the same time, the City's cash transfer to the School District would be reduced by \$25 million so that there would be no net change in the amount of combined property tax revenues and city cash transfers that the School District receives.

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 wage, earnings and net profits at the rate of 1.5% on City residents. The following are the resident and non-resident wage and earnings tax rates for Fiscal Years 1992-2003.

<u>Fiscal Year</u>	<u>Resident Wage and Earnings Tax Rates*</u>	<u>Non-Resident Wage and Earnings Tax Rates</u>
1992	4.9600%	4.3125%
1993	4.9600	4.3125
1994	4.9600	4.3125
1995	4.9600	4.3125
1996	4.8600	4.2256
1997	4.8400	4.2082
1998	4.7900	4.1647
1999	4.6869	4.0750
2000	4.6135	4.0112
2001	4.5635	3.9672
2002	4.5385	3.9462
2003	4.5000	3.9127

* Includes PICA Tax

Legislation passed by City Council would continue wage tax reductions through Fiscal Year 2007. In addition, such legislation stipulates that if wage tax receipts grow by at least 3.5% over the previous year, the size of the wage tax reduction will increase. If the wage tax receipts grow at 3.5% in each year of the planned wage tax reduction, the wage tax rate for residents would drop to 3.98% in Fiscal Year 2007. If wage tax receipts do not grow at 3.5% in any year of the plan, the wage tax rate for residents would be 4.35% in Fiscal Year 2007.

Two pieces of proposed legislation, one in City Council and one in the Pennsylvania General Assembly, would, if enacted, have the following impact on the City's General Fund. City Council Bill No. 020309 would phase in exemptions from the City's wage tax for eligible low-income taxpayers. City Council Bill No. 020309 would cost the City less than \$10 million in Fiscal Year 2003. City Council Bill

No. 020309 was voted out of City Council's Committee of the Whole with a favorable recommendation and received first reading, but was tabled by City Council on June 6, 2002. In order to become law, City Council Bill No. 020309 would have to be untabled, receive final passage from City Council, be signed by the Mayor or be passed over the Mayor's veto.

Senate Bill 1423 would compel non-residents of the City who reside in Pennsylvania and are subject to local income taxes to redirect from the City to their local government up to 1% of their taxable wages. If enacted, Senate Bill 1423 could reduce revenues of the City by approximately \$87 million per year, beginning in Fiscal Year 2004. On June 27, 2002, Senate Bill 1423 was passed by the Senate and sent to the House. In order to become law, Senate Bill 1423 would have to be passed by the House and signed by the Governor or be passed over the Governor's veto.

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	2.530 mills
2002	2.400 mills
2003	2.300 mills

In the Eleventh Five-Year Plan, the Mayor also proposed further reductions in this tax rate for each of Fiscal Years 2003-2007. 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 50 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 City collected the amount set forth below in Fiscal Years 1994 through 2002 and budgeted collection for Fiscal Year 2003 set forth below.

<u>Fiscal Year</u>	<u>City Sales Tax Collections</u>
1994	\$ 82.6 million
1995	86.1 million
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	110.8 million*

* Budgeted for Fiscal Year 2003

Other Taxes — The City also collects real property transfer tax, 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 2002 Current General Fund actual shows that approximately 24% of General Fund revenues will be received from other governmental jurisdictions, including: (1) \$242.2 million from the Commonwealth for health, welfare, court, and various other specified purposes; (2) \$224.7 million from the Federal government; (3) \$34.1 million from other governments, in which revenues are primarily principal and interest payments on loans made by the City on SEPTA's behalf, the Convention Center Service Fee offset and rents paid to the City by PGW; and (4) \$6.5 million of "Other Authorized Adjustments." In addition, the projected net collections of the PICA Tax of \$180.2 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 do not represent moneys that are unconditionally available for the payment of obligations of the City.

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. The \$4,994,000 amount was reduced to \$4,138,000 by administrative agreement that will be in effect through Fiscal Year 2003. No such transfer was made in Fiscal Year 1992; however, the transfer has been made in each subsequent year.

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. PGW also makes an annual payment of \$18,000,000 to the City's General Fund. The Fiscal Year 2003 General Fund budget includes this annual receipt of \$18,000,000.

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 Ground Lease with PPA – PPA owns and operates three 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 “Ground Lease”). PPA is currently constructing two additional garages at the Airport that will also be subject to the terms of Ground Lease. The Ground Lease 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 Division of Aviation on June 29, 2001 was approximately \$23,731,389.

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 Ground Lease), 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, and is currently expected to remain stayed pending the outcome of the state litigation described below.

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 is presently pending before the Pennsylvania Commonwealth Court for a decision on its merits. Oral argument is scheduled for September 2002.

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 Table 6 for assessed and market values of taxable realty in the City and Table 7 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 Years 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.

Table 3
City of Philadelphia
Summary of
Principal Operating Funds (Debt Related)
Revenues By Major Source
Fiscal Years 1993-2003
(Legal Basis)

(Amounts in Millions of Dollars)

Fiscal Year	Real & Personal Property Taxes ^(a)	Wage Earnings & Net Profits Taxes ^(a)	Business Privilege Tax ^(a)	Sales and Use Tax ^{(a)(b)}	Other Taxes ^(c)	Total Taxes	Water & Wastewater Charges	Airport Charges	Other Locally Generated Charges	Total Local Revenue	Revenue from Other Gov'ts	Revenue from Other City Funds	Total Revenues
1993	345.2	820.0 ^(d)	215.1	76.3	69.0	1,525.6	294.8	113.5	176.5	2,110.4	617.1	31.8	2,759.3
1994	346.0	840.8 ^(d)	221.6	82.6	78.3	1,569.3	288.1	114.7	199.9	2,172.0	587.0	38.7	2,797.7
1995	339.5	857.6 ^(d)	230.2	86.1	79.9	1,593.3	288.9	114.0	244.7	2,240.9	515.9	31.1	2,787.9
1996	346.6	877.5 ^(d)	237.5	82.4	77.7	1,621.8	296.2	123.8	250.4	2,292.2	565.1	33.2	2,890.5
1997	358.2	885.4 ^(d)	246.4	91.4	93.8	1,675.2	291.0	125.8	236.8	2,328.8	587.9	44.1	2,960.8
1998	333.9 ^(e)	926.9 ^(d)	237.4	94.5	122.1	1,714.8	288.8	126.6	253.7	2,383.9	620.7	46.1	3,050.7
1999	342.6	949.8 ^(d)	254.5	101.4	118.3	1,766.6	290.5	143.2	259.9	2,460.2	639.9	103.1	3,203.2
2000	353.6	985.7	290.1	103.7	123.5	1,856.6	296.1	149.4	258.0	2,560.1	708.3	79.9	3,348.3
2001	363.4	1,059.0 ^(f)	314.0 ^(f)	111.3	130.0 ^(f)	1,997.7	285.8	175.7	251.3	2,710.5	781.7	90.5	3,580.0
2002	373.6	1019.3	295.8	108.1	148.6	1,945.4	302.8	181.7	257.9	2,687.8	722.5	80.8	3,491.1
2003 (Budget)	349.7	1,028.3	299.2	112.5	141.8	1,931.5	326.1	277.5	258.1	2,793.2	901.1	103.4	3,797.7

(a) See Table 5 for Tax Rates.

(b) Effective September 28, 1991.

(c) Includes Real Estate Transfer Tax, Parking Tax, Amusement Tax, and Other Taxes.

(d) 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.

(e) The City ceased collecting the Personal Property Tax in Fiscal Year 1998.

(f) See Note (c) on Table 1.

FIGURES MAY NOT ADD DUE TO ROUNDING

Table 4
City of Philadelphia
General Fund
Tax Revenues ^(a)
Fiscal Years 1997-2003
(Amounts In Millions)

	<u>1997</u>	<u>1998</u>	<u>Actual 1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>Adopted Budget 2003</u>
REAL PROPERTY TAXES							
Current	\$ 310.1	\$ 305.8	\$ 311.9	\$ 315.9	\$ 325.8	\$ 333.2	\$ 321.7
Prior	44.7	28.1	30.7	37.7	37.6	40.4	28.0
Total	<u>\$ 354.8</u>	<u>\$ 333.9</u>	<u>\$ 342.6</u>	<u>\$ 353.6</u>	<u>363.4</u>	<u>\$ 373.6</u>	<u>349.7</u>
PERSONAL PROPERTY TAXES							
Current ^(b)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prior	3.4	0.0	0.0	0.0	0.0	0.0	0.0
Total	<u>\$ 3.4</u>	<u>\$ 0.0</u>	<u>\$ 0.0</u>	<u>\$ 0.0</u>	<u>\$ 0.0</u>	<u>\$ 0.0</u>	<u>\$ 0.0</u>
WAGE AND EARNINGS TAX ^(c)							
Current	859.7	896.6	916.2	949.6	1,023.1 ^(d)	981.8	1,007.3
Delinquent	12.8	17.7	18.1	23.4	24.1	24.2	21.0
Total	<u>\$ 872.5</u>	<u>\$ 914.3</u>	<u>\$ 934.3</u>	<u>\$ 973.0</u>	<u>\$ 1,047.2</u>	<u>\$ 1,006.0</u>	<u>\$ 1,028.3</u>
BUSINESS TAXES:							
Business Privilege							
Current	210.6	214.0	233.9	251.7	275.5	273.8	264.2
Delinquent	35.8	23.4	20.7	38.4	38.5	22.0	35.0
Sub-Total Business Privilege	<u>\$ 246.4</u>	<u>\$ 237.4</u>	<u>\$ 254.5</u>	<u>\$ 290.1</u>	<u>\$ 314.0</u>	<u>\$ 295.8</u>	<u>\$ 299.2</u>
Net Profits Tax							
Current	10.4	10.2	13.1	9.9	10.6	11.4	9.8
Delinquent	2.3	2.4	2.4	2.8	1.2	2.0	1.1
Sub-Total Net Profits Tax	<u>12.7</u>	<u>12.6</u>	<u>15.5</u>	<u>12.7</u>	<u>11.8</u>	<u>13.4</u>	<u>10.9</u>
Total Business Taxes	<u>\$ 259.2</u>	<u>\$ 250.0</u>	<u>\$ 270.0</u>	<u>\$ 302.8</u>	<u>\$ 325.8</u>	<u>\$ 309.2</u>	<u>\$310.0</u>
OTHER TAXES							
Sales and Use Tax	91.4	94.5	101.4	103.7	111.3	108.1	112.5
Amusement Tax	9.2	9.5	9.9	11.7	13.0 ^(d)	13.8	13.3
Real Property Transfer Tax	54.8	82.5	74.9	77.7	77.0	96.7	78.9
Parking Taxes	28.4	30.0	32.1	34.1	39.0 ^(d)	37.9	37.6
Other Taxes	1.4	.1	1.4	0.0	0.5	.1	1.0
Sub-Total Other Taxes	<u>\$ 185.2</u>	<u>\$ 216.6</u>	<u>\$ 219.7</u>	<u>\$ 227.2</u>	<u>\$ 241.3</u>	<u>\$ 256.6</u>	<u>\$243.4</u>
TOTAL TAXES	<u><u>\$1,675.2</u></u>	<u><u>\$1,714.8</u></u>	<u><u>\$1,766.6</u></u>	<u><u>\$1,856.6</u></u>	<u><u>\$1,977.7</u></u>	<u><u>\$ 1945.4</u></u>	<u><u>\$1,931.5</u></u>

(a) See Table 5 for Tax Rates.

(b) The City ceased levying the Personal Property Tax during the latter part of Fiscal Year 1997.

(c) Beginning in FY 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 (c) on Table 1.

FIGURES MAY NOT ADD DUE TO ROUNDING

Table 5
City of Philadelphia
Tax Rates and School District Real Estate Tax Rates
For the Ten-Year Period 1993 Through 2002

Tax Classification	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Real Property: (% on Assessed Valuation)										
City	3.745%	3.745%	3.745%	3.745%	3.745%	3.745%	3.745%	3.745%	3.745%	3.745%
School District	4.519%	4.519%	4.519%	4.519%	4.519%	4.519%	4.519%	4.519%	4.519%	4.519%
Total Real Property Tax	8.264%	8.264%	8.264%	8.264%	8.264%	8.264%	8.264%	8.264%	8.264%	8.264%
Assessment Ratio as Determined by Sales	25.10%	27.30%	27.00%	27.07%	26.44%	24.39%	23.00%	23.70%	25.46%	NA
Effective Tax Rate (Real Estate Tax Rate x Assessment Ratio)	2.074%	2.256%	2.231%	2.237%	2.185%	2.016%	1.901%	1.959%	2.104%	NA
Wage, Earnings and Net Profits Taxes:										
Residents (a)	4.96%	4.96%	4.96%	4.86%(b)	4.84%(c)	4.79%(h)	4.6869%(i)	4.6135%(j)	4.5630%(k)	4.5385%(s)
Non-Residents	4.3125%	4.3125%	4.3125%	4.2256%(b)	4.2082%(c)	4.1647%(h)	4.075%(i)	4.0112%(j)	3.9672%(k)	3.9462%(s)
Real Property Transfer Tax (l)	3.46%	3.23%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
Personal Property Tax (% on Taxable Intangible Items) (m)	0.4%	0.4%	0.4%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Business Privilege Taxes										
(% on Gross Receipts)	0.325%	0.325%	0.325%	0.300%(b)	0.295%(c)	0.2875%(d)	0.2775%(e)	0.2650%(f)	0.2525%(g)	0.2400%(t)
(% on Net Income) (n)	6.50%	6.50%	6.50%	6.50%	6.50%	6.50%	6.50%	6.50%	6.50%	6.50%
Sales and Use Tax	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Amusement Tax	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Parking Lot Tax (% on Gross Receipts)	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
Mechanical Amusement Device Tax(o)	\$100	-	-	-	-	-	-	-	-	-
Hotel Room Rental Tax	5.0%	6.0%(p)	6.0%	6.0%	6.0%	6.0%	6.0%	7.0%(r)	7.0%	7.0%
Vehicle Rental Tax(q)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.0%	2.0%

NOTES:

(a) Pursuant to an agreement with the Pennsylvania Intergovernmental Cooperation Authority (PICA), PICA's share of the Wage, Earnings and Net Profits Taxes for City residents is 1.5%.

(b) Tax decrease effective January 1, 1996.

(c) Tax decrease effective January 1, 1997.

(d) Tax decrease effective January 1, 1998.

(e) Tax decrease effective January 1, 1999.

(f) Tax decrease effective January 1, 2000.

(g) Tax decrease effective January 1, 2001.

(h) Tax decrease effective July 1, 1997.

(i) Tax decrease effective July 1, 1998.

(j) Tax decrease effective July 1, 1999.

(k) Tax decrease effective July 1, 2000.

(l) Phased decreases effective July 1, 1990.

(m) The City ceased the collection of the Personal Property Tax during FY 1997.

(n) 60% of Net Income Tax portion paid is credited against Net Profits Tax Payable.

(o) The City converted this tax to a Licensing Fee in Fiscal 1994.

(p) Tax Increase effective July, 1993.

(q) Effective July 1, 2000

(r) Tax increase effective July 1, 1999.

(s) Tax decrease effective July 1, 2001.

(t) Tax decrease effective January 1, 2002.

Table 6
City of Philadelphia
Assessed and Market Value of Taxable Realty in Philadelphia
For the Calendar Years 1993 Through 2002
(Amounts in Millions of Dollars)

Calendar Year	Assessed Value Adjusted to 6-30-2002(a)		Assessment Ratio of State Tax Equalization Board (b)	Market Value on Basis of STEB Ratio		Assessment Ratio as Determined by Sales (c)	Estimated Market Value Based on Sales	
	Amount	Percentage Increase (Decrease) Over Prior Year		Amount	Percentage Increase (Decrease) Over Prior Year		Amount	Percentage Increase (Decrease) Over Prior Year
1993	8,865	-0.66%	0.300	29,570	-0.66%	0.251	35,291	-0.46%
1994	9,008	1.61%	0.300	30,047	1.61%	0.273	33,057	-6.33%
1995	8,896	-1.24%	0.299	29,753	-0.98%	0.270	32,912	-0.44%
1996	8,896	0.00%	0.300	29,673	-0.27%	0.271	32,863	-0.15%
1997	8,968	0.81%	0.303	29,617	-0.19%	0.264	33,918	3.21%
1998	9,039	0.79%	0.302	29,940	1.09%	0.244	37,060	9.26%
1999	9,196	1.74%	0.304	30,300	1.20%	0.230	39,983	7.89%
2000	9,351	1.69%	0.304	30,811	1.69%	0.237	39,439	-1.36%
2001	9,615	2.82%	0.303	31,712	2.93%	0.255	37,765	-4.24%
2002(d)	9,911	3.08%	0.303	32,677	3.04%	NA	NA	NA
Total Increase 1993 - 2002	1,046	11.80%						
Compounded Annual Average Rate of Increase 1993 - 2002		1.25%						

NOTES:

- (a) The adjustment reflects reductions in assessments pursuant to established procedures for review of assessments.
- (b) The State Tax Equalization Board (STEB) annually determines a ratio of assessed valuation to true value for each municipality in the Commonwealth. The ratio is used for the purpose of equalizing certain state school aid distribution.
- (c) The Assessment Ratio as presented has not been adjusted to allow for the effects of large or unusual sales.
- (d) At June 30, 2002

Table 7
City of Philadelphia
Real Property Taxes Levied and Collected
For the Calendar Years 1993 Through 2002
(Amounts in Millions of Dollars)

Calendar Year of Levy (a)	Original Assessed Value (b)	Assessed Value of Taxable Real Property Adjusted to 6-30-2001(c)	Amount Collectible in Year of Levy	Amount Collected in Year of Levy (d)	Collections Within Year of Levy as a Percent of Amount Collectible	Net Levy Adjusted to 6-30-2002	Net Collections of Delinquent Taxes Relating to Year of Levy	Total Collections	Total Collections as a Percent of Adjusted Amount Collectible
1993	9,676	8,865	337.2	307.1	91.1%	338.0	24.7	331.8	98.2%
1994	9,516	9,008	335.6	305.9	91.2%	337.0	22.5	328.4	97.5%
1995	9,410	8,896	338.5	307.1	90.7%	336.4	23.2	330.3	98.2%
1996	9,266	8,896	337.7	308.2	91.3%	338.5	19.5	327.7	96.8%
1997	9,275	8,968	336.2	310.8	92.4%	337.3	18.1	328.9	97.5%
1998	9,220	9,039	338.6	311.9	92.1%	341.2	18.2	330.1	96.8%
1999	9,273	9,196	343.6	316.2	92.0%	346.2	15.6	331.8	95.8%
2000	9,527	9,351	349.3	322.0	92.2%	352.1	12.8	334.8	95.1%
2001	9,867	9,615	356.6	326.7	91.6%	359.6	7.9	334.6	93.1%
2002	10,300	9,911	367.6	324.9(e)	88.4%	N/A	N/A	N/A	N/A

NOTES:

- (a) Real property tax bills are sent out in November and are payable at one percent discount until February 28, and the face amount is due on or before March 31, without interest or penalty.
- (b) Includes \$334.1 million in 1993, \$189.8 million in 1994, \$95.2 million in 1995, \$64.9 million in 1996, \$52.7 million in 1997, \$13.7 million in 1998, \$23.3 million in 1999, \$57.7 million in 2000, \$84.0 million in 2001 and \$68.1 million in 2002 classified as exempt under ordinance (Bill 1130) approved February 8, 1978 which provides relief from real estate taxes on improvements to deteriorated industrial, commercial or other business property for a period of five years. Bill 982 (approved July 9, 1990) changed the exemption period from five years to three years. Also includes \$35.8 million in 1993, \$11.8 million in 1994, \$13.1 million in 1995, \$10.4 million in 1996, \$4.3 million in 1997, \$5.9 million in 1998, \$9.0 million in 1999, \$15.3 million in 2000, \$16.1 million in 2001 and \$26.9 million in 2002 classified as exempt under ordinance (Bill 1456-A) as approved January 28, 1983 which provides for a maximum three year tax abatement for owner-occupants of newly constructed residential property; and Legislative Act 5020-205 as amended, approved October 11, 1984 which provides for a maximum thirty month tax abatement to developers of residential property. Includes \$2.3 million in 2000, \$9.0 million in 2001 and \$19.4 million in 2002 classified as exempt under ordinance (Bill #970274) approved July 1, 1997 which provides a maximum ten year tax abatement for conversion of eligible deteriorated commercial, or other business property to commercial non-owner occupied residential property. Also includes, \$17.1 million in 2001 and \$26.7 million in 2002 classified as exempt under ordinance (Bill 980788A) approved December 30, 1998 which provides a maximum twelve year tax exemption, abatement, or credit of certain taxes within the geographical area designated as the Philadelphia Keystone Opportunity Zone.
- (c) The adjustment reflects reductions or increases in assessments pursuant to established procedures for review of assessments.
- (d) Amounts shown as collected include amounts allowed as discounts for payments during the discount period.
- (e) Includes collections through June 30, 2002, while the other years include collection through December 31, of the year of the levy. It is estimated that approximately 91% of the net levy for Fiscal 2002 will be collected within the year of levy, resulting in approximately \$334.5 million by December 31, 2002.

Table 8
City of Philadelphia
Ten Largest Real Estate Assessments
January 1, 2002
(Amounts in Thousands of Dollars)

<u>Location</u>	<u>Owner</u>	<u>Assessment</u>	<u>Percentage of Total Assessments</u>
1650 Market Street	Phila. Liberty Place	\$ 64,320	0.63%
1500-42 Market Street	Center Square Partners	59,520	0.59%
1735 Market Street	Nine Penn Center Associates	51,968	0.51%
50 S. 16th Street	Two Liberty Place	51,840	0.51%
4301 Byberry Road	PMI Associates	48,096	0.47%
1717 Arch Street	Bell Atlantic	43,320	0.43%
1901-19 Market Street	PRU 1901 Market LLC	32,896	0.32%
2005 Market Street	Commerce Square Partners	32,320	0.32%
2001 Market Street	Maguire/Thomas	32,000	0.32%
1201 Market Street	Philadelphia Market Street	30,400	0.30%
		_____	_____
		\$ <u>446,680</u>	<u>4.40%</u>
Total Taxable Assessments		\$ <u>10,158,592</u>	<u>100.00%</u>

Table 9
Ten Largest Certified Market and Assessment Values
of Tax Abated Properties
January 1, 2001

Rank	Location	2001 Certified Market Value	Taxable Assessment Value	Assessment Value
1	1622-50 Arch Street	\$40,000,000	\$6,400,000	\$6,400,000
2	1701 Market Street	30,000,000	2,240,000	7,360,000
3	219-29 South 18th Street	20,859,700	2,988,711	3,686,393
4	1628-36 Chestnut Street	16,620,000	960,000	4,358,400
5	1500 Chestnut Street	14,800,000	294,400	4,441,600
6	1100 Vine Street	14,700,000	325,000	4,379,000
7	232-52 South 24th Street	12,500,000	539,456	3,460,544
8	1338-48 Chestnut Street	11,615,000	1,464,000	2,252,800
9	140 South Broad Street	11,500,000	2,080,000	1,600,000
10	9898 East Roosevelt Blvd.	10,255,100	2,683,520	598,112

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, 2002, the City employed 29,072 full-time employees with the salaries of 24,372 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 10
City of Philadelphia
Filled, Full-Time Positions – All Operating Funds

	At June 30 Actual						Adopted Budget
	1997	1998	1999	2000	2001	2002	2003
General Fund							
Police	7,630	7,801	7,789	7,812	7,807	7,683	7,883
Streets	2,160	2,135	2,137	2,130	2,141	2,080	2,195
Fire	2,462	2,468	2,478	2,468	2,500	2,458	2,518
Health	906	875	883	901	861	823	886
Courts	2,091	2,108	2,080	2,108	2,038	2,039	2,060
Other	8,866	8,963	9,024	9,257	9,306	9,289	9,898
Total General Fund	<u>24,115</u>	<u>24,350</u>	<u>24,391</u>	<u>24,676</u>	<u>24,653</u>	<u>24,372</u>	<u>25,440</u>
Other Funds	<u>4,250</u>	<u>4,331</u>	<u>4,530</u>	<u>4,556</u>	<u>4,649</u>	<u>4,700</u>	<u>5,553</u>
TOTAL	<u><u>28,365</u></u>	<u><u>28,681</u></u>	<u><u>28,921</u></u>	<u><u>29,232</u></u>	<u><u>29,302</u></u>	<u><u>29,072</u></u>	<u><u>30,993</u></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.

In July 2000, new collective bargaining agreements were reached with District Councils 33 and 47. These four-year contracts, expiring June 30, 2004, include a \$1,500 payment with no general wage increase in Fiscal Year 2001, an increase of 3% late in the second quarter of both Fiscal Years 2002 and 2003 and a 3% increase in Fiscal Year 2004. In addition, these agreements maintain the health benefit cost containment provisions, disability reforms, paid leave reductions and other reforms achieved in prior agreements.

The City is currently engaged in binding interest arbitration with Local 22. The arbitration panel will award modifications in the fire wage and benefits packages which will be effective July 1, 2002.

On July 25, 2002 the City concluded binding interest arbitration with the FOP. The panel awarded the FOP a 3% increase in wages effective 7/1/02 and a 3.5% wage increase effective 7/1/03. The two year award also granted significant increases in health and welfare benefits to the FOP. All other reforms achieved in prior agreements are maintained.

The following table presents employee wage increases for the Fiscal Years 1993 through 2004.

Table 11
City of Philadelphia
Employee Wage Increases
Fiscal Years 1993-2004

<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>
1993	No increase	No increase	No increase	No increase
1994	No increase	No increase	No increase	No increase
1995	2.0%	2.0%	2.0%	2.0%
1996	3.0%	3.0%	3.0%	3.0%
1997	No increase (a)	No increase (a)	4.0% (b)	4.0% (c)
1998	3.0% (d)	3.0% (d)	4.0% (e)	4.0% (f)
1999	3.0% (g)	3.0% (g)	3.0% (h)	3.0% (i)
2000	4.0% (j)	4.0% (j)	4.0% (k)	4.0% (l)
2001	No increase (m)	No increase (m)	3.0%	3.0%
2002	3.0% (n)	3.0% (n)	4.0%	4.0%
2003	3.0% (o)	3.0% (o)	0.0%	0.0%
2004	3.0% (p)	3.0% (p)	0.0%	0.0%

- (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) Fourth year of a four year contract: 3% effective July 1, 2003.

Employee Benefits

The City provides various pension, life insurance, health, and medical benefits for its employees. General Fund employee benefit expenditures for Fiscal Years 1997 through 2003 are shown in the following table.

Table 12
City of Philadelphia
General Fund Employee Benefit Expenditures
Fiscal Years 1997-2003

(Amounts in Millions)

	Actual						Adopted Budget
	1997	1998	1999	2000	2001	2002	2003
Pension Contribution	\$207.2	\$219.2	\$224.9	\$219.7	\$194.2	\$196.6	\$210.8
Health-Medical-Dental	149.6	151.6	162.1	172.2	186.7	187.6	207.6
Social Security	46.2	48.2	51.7	53.5	57.8	57.4	59.2
Other	54.1	52.0	49.4	48.4	44.6	44.2	50.5
Total	<u>\$457.1</u>	<u>\$471.0</u>	<u>\$488.1</u>	<u>\$493.8</u>	<u>\$483.3</u>	<u>\$485.8</u>	<u>528.1</u>

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 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: non active 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 unfunded actuarial accrued liability over 40 years ending in 2025.

Based on an actuarial schedule providing payments increasing at 5.0% per annum, the unfunded accrued liability of \$1.4 billion, as of July 1, 2001 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.

In February 1999, PAID issued \$1,291,913,112.35 Pension Funding Bonds (City of Philadelphia Retirement System) Series 1999A-1999C. The net proceeds of this issue, \$1,250,000,000, were deposited in the City's pension fund reducing the unfunded pension liability from approximately \$2.7 billion to \$1.45 billion.

The following table is a comprehensive statement of operations of the City Municipal Pension Fund for Fiscal Years 1996 through 2001.

[REMAINDER OF THE PAGE INTENTIONALLY LEFT BLANK]

Table 13
City of Philadelphia
City Municipal Pension Fund
Comparative Schedule of Operations
For the Fiscal Years 1993 Through 2002

	1993		1994		1995		1996		1997		1998		1999		2000		2001		2002	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	
Revenue:																				
Contributions:																				
Employees:																				
Members' Contributions	45.0	10.7	44.3	9.6	44.2	10.1	45.6	7.2	47.0	4.9	48.0	6.7	49.2	2.5	50.2	7.4	49.3	14.1	50.1	
Less: Refunds to Members	4.9	1.2	4.3	0.9	3.7	0.8	3.8	0.6	3.8	0.4	3.2	0.4	4.2	0.2	4.2	0.6	4.7	1.3	7.1	
Net Members' Contributions	<u>40.1</u>	<u>9.5</u>	<u>40.0</u>	<u>8.6</u>	<u>40.5</u>	<u>9.2</u>	<u>41.8</u>	<u>6.6</u>	<u>43.2</u>	<u>4.5</u>	<u>44.8</u>	<u>6.3</u>	<u>45.0</u>	<u>2.3</u>	<u>46.0</u>	<u>6.8</u>	<u>44.6</u>	<u>12.8</u>	<u>43.0</u>	
Employer's:																				
City of Philadelphia	174.3	41.3	233.7 (2)	50.5	212.8	48.5	222.5	35.3	237.0	24.8	252.0	35.3	1,506.8 (5)	77.7	179.5 (2)	26.6	163.5	46.9	174.2	
Commonwealth of Pennsylvania																				
Through City of Philadelphia	35.1	8.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Quasi Governmental Agencies	<u>3.6</u>	<u>0.9</u>	<u>2.8</u>	<u>0.6</u>	<u>4.6</u>	<u>1.0</u>	<u>4.8</u>	<u>0.8</u>	<u>5.2</u>	<u>0.5</u>	<u>5.0</u>	<u>0.7</u>	<u>4.9</u>	<u>0.3</u>	<u>4.5</u>	<u>0.7</u>	<u>4.1</u>	<u>1.3</u>	<u>4.0</u>	
Total Employer's Contributions	213.0	50.5	236.5	51.1	217.4	49.5	227.3	36.0	242.2	25.3	257.0	36.0	1,511.7	78.0	184.0	27.3	167.6	48.2	178.2	
Commonwealth of Pennsylvania	<u>6.5</u>	<u>1.5</u>	<u>2.7</u>	<u>0.6</u>	<u>1.3</u>	<u>0.3</u>	<u>4.5</u>	<u>0.7</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	
Total Contributions	259.6	61.6	279.2	60.4	259.2	59.0	273.6	43.4	285.4	29.8	301.8	42.3	1,556.6	80.3	230.0	34.1	212.2	61.0	221.2	
Investment Earnings	161.6	38.3	182.9	39.5	178.9	40.8	356.4	56.5	669.9 (3)	70.1	411.8	57.6	383.0	19.7	445.0	65.9	135.8	39.0	111.4	
Other	<u>0.5</u>	<u>0.1</u>	<u>0.5</u>	<u>0.1</u>	<u>0.9</u>	<u>0.2</u>	<u>0.8</u>	<u>0.1</u>	<u>0.3</u>	<u>0.1</u>	<u>0.4</u>	<u>0.1</u>	<u>0.3</u>	<u>0.0</u>	<u>0.2</u>	<u>0.0</u>	<u>0.6</u>	<u>0.0</u>	<u>0.7</u>	
Total Revenue	<u>421.7</u>	<u>100.0</u>	<u>462.6</u>	<u>100.0</u>	<u>439.0</u>	<u>100.0</u>	<u>630.8</u>	<u>100.0</u>	<u>955.6</u>	<u>100.0</u>	<u>714.0</u>	<u>100.0</u>	<u>1,939.9</u>	<u>100.0</u>	<u>675.2</u>	<u>100.0</u>	<u>348.6</u>	<u>100.0</u>	<u>333.3</u>	
Deductions:																				
For Pension Benefits	312.5		326.2		338.6		353.4		372.0		383.3		434.0		444.3		456.8		450.2	
Net Decline in Fair Value of Investments	0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		422.8		359.5	
For Other Purposes, Excluding Refunds	<u>43.2 (1)</u>		<u>26.8 (1)</u>		<u>28.1 (1)</u>		<u>21.4 (1)</u>		<u>13.6</u>		<u>2.9 (4)</u>		<u>4.4</u>		<u>4.8</u>		<u>5.3</u>		<u>5.2</u>	
Total Deductions	<u>355.7</u>		<u>353.0</u>		<u>366.7</u>		<u>374.8</u>		<u>385.6</u>		<u>386.2</u>		<u>438.4</u>		<u>449.1</u>		<u>884.9</u>		<u>814.9</u>	
Excess of Revenue Over Deductions	<u>66.0</u>		<u>109.6</u>		<u>72.3</u>		<u>256.0</u>		<u>570.0</u>		<u>327.8</u>		<u>1,501.5</u>		<u>226.1</u>		<u>-536.3</u>		<u>-481.6</u>	
Net Assets:																				
Opening	1,847.1		1,913.1		2,022.7		2,095.0		2,351.0		2,921.0		3,248.8		4,750.3		4,976.4		4,440.1	
Closing	<u>1,913.1</u>		<u>2,022.7</u>		<u>2,095.0</u>		<u>2,351.0</u>		<u>2,921.0</u>		<u>3,248.8</u>		<u>4,750.3</u>		<u>4,976.4</u>		<u>4,440.1</u>		<u>3,958.5</u>	
Increase (Decrease) During the Year	<u>66.0</u>		<u>109.6</u>		<u>72.3</u>		<u>256.0</u>		<u>570.0</u>		<u>327.8</u>		<u>1,501.5</u>		<u>226.1</u>		<u>-536.3</u>		<u>-481.6</u>	
EXHIBIT:																				
Pension Benefits Paid as a Percent of																				
A. Net Contributions of Members		779.3		815.5		836.0		845.5		861.1		855.6		964.4		965.9		1,024.2		
B. Revenue		74.1		70.5		77.1		56.0		38.9		53.7		22.4		65.8		131.0		
C. Closing Net Assets		16.3		16.1		16.2		15.0		12.7		11.8		9.1		8.9		10.3		
The Closing Assets as a Percent of																				
Total Disbursements		537.8		573.0		571.3		627.3		757.5		841.2		1,083.6		1,108.1		501.8		
Coverage of Revenues Over Disbursements		118.6		131.0		119.7		168.3		247.8		184.9		442.5		150.3		39.4		
Investment Earnings as a Percent of																				
Pension Benefits		51.7		56.1		52.8		100.8		180.1		107.4		88.2		100.2		29.7		

Notes:

- (1) Disbursements for Other Purposes include losses due to the permanent decline in market value of some investments. These losses amounted to \$34.2 million in Fiscal 1993, \$14.4 million in Fiscal 1994, \$15.2 million in Fiscal 1995 and \$9.3 million in Fiscal 1996.
- (2) Includes additional payments toward the Unfunded Actuarial Accrued Liability of \$10.0 million in Fiscal 1994 and \$15.0 million in Fiscal 2000
- (3) Included in this figure is \$354.2 million attributable to the recognition of the fair value of the investments at June 30, 1997
- (4) Disbursements for Other Purposes includes a reduction of \$1 million due to the reversal of charges made in previous fiscal years
- (5) Includes \$1,250 million from the sale of Pension Funding obligations.

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 1997 through 2003.

Table 14
City of Philadelphia
Purchase of Services In The General Fund
Fiscal Years 1996-2002

(Amounts In Millions)

	Actual						Adopted Budget
	1997	1998	1999	2000	2001	2002	2003
Human Services ^(a)	\$249.4	\$275.3	\$296.6	\$335.0	\$360.2	\$393.1	\$439.0
Public Health ^(b)	54.2	55.6	58.4	58.2	62.0	73.6	73.1
Public Property ^(c)	135.9	139.1	137.7	135.6	140.3	144.3	143.0
Streets ^(d)	65.1	59.1	48.0	49.7	49.7	50.4	52.0
Sinking Fund-Lease Debt ^(e)	38.5	38.2	38.2	44.2	42.6	57.8	91.2
Legal Services ^(f)	22.6	24.2	24.1	25.2	27.1	29.5	30.7
First Judicial District	29.9	27.1	28.5	27.9	28.8	21.9	23.4
Licenses & Inspections ^(g)	12.5	15.0	16.2	15.5	23.7	25.9	5.0
Emergency Services ^(h)	12.3	10.0	9.6	11.9	11.8	11.6	13.9
All Other	115.6	92.4	137.6	145.7	125.6	142.9	142.4
Total	<u>\$736.0</u>	<u>\$736.0</u>	<u>\$794.9</u>	<u>\$848.9</u>	<u>\$871.8</u>	<u>\$951.2</u>	<u>\$1,013.7</u>

(a) Includes payments for care of dependent and delinquent children.

(b) Prior to FY 1995, the purchased service category for the Department of Public Health included MH/MR payments. The FY 1995 Budget transfers these obligations to the Grants Revenue Fund. Prior to Fiscal Year 1996, the purchased service category for the Department of Public Health included funding for prison health services. The Fiscal Year 1996 budget transferred these obligations to the Philadelphia Prison System.

(c) Includes payments for SEPTA, space rentals, utilities, and telecommunications.

(d) Includes solid waste disposal costs.

(e) Includes Justice Center lease debt.

(f) Includes payments to the Defender Association to provide legal representation for indigents.

(g) Includes payments for demolition.

(h) 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 \$45 million beginning in Fiscal Year 2002.

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. Such loan is currently due in Fiscal Year 2007. In addition, the City has agreed to grant to PGW, if necessary, up to \$10 million from Fiscal Year 2002 appropriations to assist PGW in meeting its cash flow requirements.

City Payments to SEPTA

In recent years, SEPTA has faced increased operating costs. The City's estimated Fiscal Year 2002 operating subsidy payment to SEPTA was \$61.4 million. The Fiscal Year 2003 budget projects operating subsidy payments to SEPTA of \$64.2 million. The Eleventh Five-Year Plan provides that the City's contribution to SEPTA will remain at approximately this level through Fiscal Year 2007.

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 February 1, 2003, the Constitutional debt limitation for tax-supported general obligation debt was approximately \$1,260,639,000. After legally authorized deductions, approximately \$1,119,224,000 of tax-supported general obligation debt was authorized as of this date, leaving a balance of \$141,415,000 available for future authorization.

The City is also authorized to issue revenue bonds pursuant to The First Class City Revenue Bond Act of 1972. 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 \$300 million of Tax and Revenue Anticipation Notes in July 2002. These notes are due on June 30, 2003. The City intends to repay these notes when due at maturity.

Long-Term Debt

Table 15 presents a synopsis of the bonded debt of the City and its component units at the close of Fiscal Year 2001. Table 16 sets forth a ten year historical summary of tax-supported debt of the City and School District. Table 17 sets forth the debt service requirements to maturity of the City's

outstanding bonded indebtedness. As of July 1, 2001, the City's tax-supported general obligation debt issued and outstanding equaled \$894.8 million.

Of the total balance of City tax-supported general obligation bonds outstanding at June 30, 2001, 19% is scheduled to mature within 5 years and 33% 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. These obligations include guarantees or the payment of debt service on certain bonds of PMA, PAID, the Parking Authority, the Redevelopment Authority, the Hospitals Authority and the Convention Center Authority.

The principal amount of the City's obligation with regard to each of these authorities as of June 30, 2002 is as follows:

PMA	\$	300.7 million
PAID	\$	1,668.8 million
Parking Authority	\$	109.8 million
Redevelopment Authority	\$	145.3 million
Hospitals Authority	\$	24.1 million
Convention Center Authority	\$	253.8 million

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 the lease revenue bonds on behalf of CCP for which the City is obligated to make such payments was \$24,105,000 as of June 30, 2002; this amount represents 50% of the \$48,210,000 principal amount of bonds issued and outstanding for CCP purposes as of June 30, 2002.

Recent Financings

In May 2002, the Redevelopment Authority issued \$18,250,000 of taxable and \$124,123,000 of non-taxable bonds in connection with the City of Philadelphia's Neighborhood Transformation Initiative. Such bonds are secured by a Service Agreement that obligates the City to appropriate sums equal to the debt service of such bonds.

Table 15
City of Philadelphia
Analysis of Changes in Bonded Debt Outstanding
For The Period July 1, 2001 To June 30, 2002

(Amounts in Thousands of Dollars)

	<u>General</u> <u>Fund</u>	<u>Water</u> <u>Fund</u>	<u>Aviation</u> <u>Fund</u>	<u>Gas Works</u> <u>Fund</u>	<u>Total</u>
<u>Bonded Debt Outstanding, July 1, 2001</u>	<u>901,043</u>	<u>1,692,738</u>	<u>954,302</u>	<u>975,302</u>	<u>4,523,385</u>
Increases:					
Par Value of Bonds Issued:					
General Obligation	0		0	0	0
Revenue Bonds	<u>0</u>	<u>288,672</u>	<u>227,800</u>	<u>0</u>	<u>516,472</u>
<u>Total Bonds Sold</u>	<u>0</u>	<u>288,672</u>	<u>227,800</u>	<u>0</u>	<u>516,472</u>
<u>Decreases:</u>					
Matured Bonds:					
General Obligation	42,133	1,696	3,667	0	47,496
Revenue Bonds		61,814	26,690	38,855	127,359
Revenue Refunded	<u>0</u>	<u>35,735</u>	<u>0</u>	<u>0</u>	<u>35,735</u>
Total Decrease	<u>42,133</u>	<u>99,245</u>	<u>30,357</u>	<u>38,855</u>	<u>210,590</u>
Total Debt Outstanding,					
37,437	858,910	1,882,165	1,151,745	936,447	4,829,267

Table 16
City of Philadelphia
City and School District Net Tax Supported Debt and Debt Service Ratios
For the Fiscal Years 1993 Through 2002

Line No.		1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
	<u>Net Tax Supported Debt (Millions)</u>										
	<u>City:</u>										
1	Bonded Debt (a)	\$ 792.6	490.2	451.4	522.6	486.1	453.7	674.7	640.2	895.4	855.3
2	Other Long-Term Obligations (b)	1,817.3	1,754.1	1,796.3	1,799.8	1,836.3	734.1	3,124.9	3,113.8	3,112.7	3,615.0
3	Total City	\$ 2,609.9	2,244.3	2,247.7	2,322.4	2,322.4	1,187.8	3,799.6	3,754.0	4,008.1	4,470.3
	<u>Overlapping School District Debt:</u>										
4	Bonded Debt	400.7	533.1	498.7	628.2	704.0	697.2	784.3	870.4	995.1	1,410.9
5	Other Long-Term Obligations (c)	\$ 381.3	403.3	420.6	436.5	436.2	458.2	447.2	483.7	516.5	547.3
6	Total School District	\$ 782.0	936.4	919.3	1,064.7	1,140.2	1,155.4	1,231.5	1,354.1	1,511.6	1,958.2
7	<u>Overlapping PICA Bonded Debt:</u>	\$ 0.0	1,156.7	1,237.5	1,146.2	1,102.4	1,055.0	1,014.1	959.4	901.8	840.7
8	Total Debt	\$ 3,391.9	4,337.4	4,404.5	4,533.3	4,565.0	3,398.2	6,045.2	6,067.5	6,421.5	7,269.2
9	Estimated Population (Thousands) (d)	1,539	1,524	1,499	1,478	1,451	1,436	1,418	1,518	1,518	1,492
10	Assessed Valuation (Millions) (e)	\$ 8,865	9,008	8,896	8,896	8,968	9,039	9,196	9,351	9,615	9,911
11	Estimated Market Value (Millions) (e)	\$ 35,291	33,057	32,912	32,863	33,918	37,060	39,983	39,439	37,765	NA
	<u>City Net Tax Supported Annual Debt Service:</u>										
12	Bonded Debt	\$ 176.4	168.0	69.1	67.6	68.1	61.4	62.6	73.0	71.9	87.9
13	Other Long-Term Obligations	96.1	132.2	115.0	87.2	104.4	108.1	64.1	120.9	73.0	125.0
14	Total (Line 12 and Line 13)	\$ 272.5	300.2	184.1	154.8	172.5	169.5	126.7	193.9	144.9	212.9
15	<u>City General Governmental Obligations (f)</u>	\$ 2,462.1	2,627.2	2,626.1	2,774.0	2,996.6	3,229.7	3,576.7	3,775.1	3,947.8	4,211.1
	<u>Net Tax Supported Debt per Capita:</u>										
16	City Bonded Debt (Line 1/Line 9)	\$ 515.0	321.7	301.1	353.6	335.0	315.9	475.8	421.7	589.9	573.3
17	City Total Long-Term Debt (Line 3/Line 9)	\$ 1,695.8	1,472.6	1,499.5	1,571.3	1,600.6	827.2	2,679.5	2,473.0	2,640.4	2,996.2
18	School District Total (Line 6/Line 9)	\$ 508.1	614.4	613.3	720.4	785.8	804.6	868.5	892.0	995.8	1,312.5
19	PICA Bonded Debt (Line 7/Line 9)	\$ 0.0	759.0	825.6	775.5	759.8	734.7	715.2	632.0	594.1	563.5
20	Total (Line 8/Line 9)	\$ 2,204.0	2,846.1	2,938.3	3,067.2	3,146.1	2,366.4	4,263.2	3,997.0	4,230.2	4,872.1
	<u>Net Tax Supported Debt as a Percentage of Assessed Valuation:</u>										
21	City Bonded Debt (Line 1/Line 10)	8.94	5.44	5.07	5.87	5.42	5.02	7.33	6.83	9.25	8.63
22	City Total Long-Term Debt (Line 3/Line 10)	29.44	24.91	25.27	26.11	25.90	13.14	41.32	40.15	41.69	45.10
23	School District Total (Line 6/Line 10)	8.82	10.40	10.33	11.97	12.71	12.78	13.39	14.48	15.72	19.76
24	Total (Lines 3 & 6/Line 10)	38.26	35.31	35.60	38.07	38.61	25.92	54.71	54.63	57.41	64.86
	<u>Net Tax Supported Debt as a Percentage of Estimated Market Value:</u>										
25	City Bonded Debt (Line 1/Line 11)	2.25	1.48	1.37	1.59	1.43	1.22	1.69	1.62	NA	NA
26	City Total Long-Term Debt (Line 3/Line 11)	7.40	6.79	6.83	7.07	6.85	3.21	9.50	9.52	10.61	NA
27	School District Total (Line 6/Line 11)	2.22	2.83	2.79	3.24	3.36	3.12	3.08	3.43	4.00	NA
28	Total (Lines 3 & 6/Line 11)	9.61	9.62	9.62	10.31	10.21	6.32	12.58	12.95	14.62	NA
	<u>City Net Tax Supported Debt Service as a Percentage of City General Governmental Obligations:</u>										
29	City Bonded Debt (Line 12/Line 15)	7.16	6.39	2.63	2.44	2.27	1.90	1.75	1.93	1.82	2.09
30	City Total Long-Term Obligation (Line 14/Line 15)	11.07	11.43	7.01	5.58	5.76	5.25	3.54	5.14	3.67	5.06

NOTES:

- (a) See Table 13.
- (b) Consists of leasing obligations, payments on contingent liabilities, accrued compensated absences, and the pension funding service agreement.
- (c) Consists of amounts due the Commonwealth of PA for vocational education, the State Public Building Authority and leasing obligations and accrued Terminal and Severance Pays.
- (d) Source: U.S. Department of Commerce, Bureau of the Census and Wharton Econometric Forecasting Associates.
- (e) See Table 5.
- (f) Consists of General Fund and Special Revenue Funds, all of which account for general governmental functions. See Table 3.

Table 17
City of Philadelphia
City and Gas Works Related Annual Debt Service on Long-Term Debt
As of June 30, 2002
(Amounts in Millions of Dollars)

Fiscal Year	General Obligation Bonds									Revenue Bonds									Fiscal Year	
	Tax Supported			Self-Supporting			Total			Water and Sewer			Gas Works			Aviation Fund				
	Principal	Interest	Total	Principal	Interest	Total	Principal	Interest	Total	Principal	Interest	Total	Principal	Interest	Total	Principal	Interest	Total		
2003	\$ 44.4	\$ 42.8	\$ 87.2	\$ 3.9	\$ 0.7	\$ 4.6	\$ 48.3	\$ 43.5	\$ 91.8	\$ 64.3	\$ 95.4	\$ 159.7	\$ 43.3	\$ 46.6	\$ 89.9	\$ 31.8	\$ 59.8	\$ 91.6	2003	
2004	43.1	40.5	83.6	4.0	0.5	4.5	47.1	41.0	88.1	67.0	92.8	159.8	40.1	45.0	85.1	34.2	60.2	94.4	2004	
2005	27.6	38.3	65.9	3.7	0.3	4.0	31.3	38.6	69.9	69.5	90.0	159.5	32.0	43.5	75.5	36.0	58.3	94.3	2005	
2006	16.8	36.9	53.7	1.4	0.2	1.6	18.2	37.1	55.3	75.3	84.9	160.2	40.2	41.9	82.1	38.0	56.3	94.3	2006	
2007	19.0	36.2	55.2	1.2	0.2	1.4	20.2	36.4	56.6	79.1	81.1	160.2	32.9	40.0	72.9	32.3	54.2	86.5	2007	
2008	23.3	35.3	58.6	1.3	0.2	1.5	24.6	35.5	60.1	82.5	77.7	160.2	37.0	38.1	75.1	34.0	52.4	86.4	2008	
2009	24.4	34.1	58.5	1.4	0.1	1.5	25.8	34.2	60.0	85.9	74.4	160.3	36.9	36.1	73.0	35.8	50.6	86.4	2009	
2010	25.5	32.9	58.4	1.4	0.1	1.5	26.9	33.0	59.9	89.4	70.9	160.3	36.2	34.1	70.3	37.8	48.7	86.5	2010	
2011	26.9	31.6	58.5	1.5	0.1	1.6	28.4	31.7	60.1	95.4	64.9	160.3	46.3	32.2	78.5	39.8	46.6	86.4	2011	
2012	28.2	30.2	58.4	1.3	0.1	1.4	29.5	30.3	59.8	102.7	57.5	160.2	38.4	30.6	69.0	42.0	44.5	86.5	2012	
2013	29.7	28.7	58.4	0.3	0.1	0.4	30.0	28.8	58.8	108.7	51.8	160.5	20.4	29.4	49.8	44.3	42.2	86.5	2013	
2014	31.3	27.2	58.5	0.2	0.1	0.3	31.5	27.3	58.8	114.7	45.8	160.5	33.2	27.8	61.0	46.7	39.8	86.5	2014	
2015	32.9	25.5	58.4	0.2	0.1	0.3	33.1	25.6	58.7	121.0	39.6	160.6	33.5	26.0	59.5	49.3	37.2	86.5	2015	
2016	30.7	23.9	54.6	0.2	0.1	0.3	30.9	24.0	54.9	126.5	34.4	160.9	33.7	24.1	57.8	45.9	34.5	80.4	2016	
2017	32.2	22.3	54.5	0.2	0.0	0.2	32.4	22.3	54.7	47.3	27.9	75.2	30.9	22.2	53.1	48.4	32.1	80.5	2017	
2018	33.8	20.8	54.6	0.2	0.0	0.2	34.0	20.8	54.8	49.8	25.4	75.2	31.1	20.5	51.6	50.2	29.4	79.6	2018	
2019	35.4	19.1	54.5	0.2	0.0	0.2	35.6	19.1	54.7	43.1	23.1	66.2	31.3	18.8	50.1	42.7	26.6	69.3	2019	
2020	37.2	17.3	54.5	0.2	0.0	0.2	37.4	17.3	54.7	35.0	21.2	56.2	31.6	17.0	48.6	45.0	24.3	69.3	2020	
2021	28.0	15.4	43.4		0.0	0.0	28.0	15.4	43.4	36.8	19.5	56.3	31.8	15.3	47.1	47.4	21.9	69.3	2021	
2022	29.4	14.1	43.5	0.0	0.0	0.0	29.4	14.1	43.5	38.7	17.7	56.4	32.0	13.5	45.5	50.0	19.3	69.3	2022	
2023	30.9	12.6	43.5	0.0	0.0	0.0	30.9	12.6	43.5	40.7	15.7	56.4	32.8	11.8	44.6	52.7	16.6	69.3	2023	
2024	32.4	11.0	43.4	0.0	0.0	0.0	32.4	11.0	43.4	26.9	13.7	40.6	33.0	10.0	43.0	55.6	13.8	69.4	2024	
2025	34.1	9.3	43.4	0	0	0.0	34.1	9.3	43.4	28.2	12.4	40.6	33.4	8.3	41.7	58.6	10.7	69.3	2025	
2026	28.5	7.6	36.1	0	0	0.0	28.5	7.6	36.1	29.7	11.0	40.7	28.3	6.6	34.9	45.7	7.5	53.2	2026	
2027	30.0	6.1	36.1	0	0	0.0	30.0	6.1	36.1	31.2	9.6	40.8	29.5	5.2	34.7	48.1	5.2	53.3	2027	
2028	31.4	4.6	36.0	0	0	0.0	31.4	4.6	36.0	32.7	8.1	40.8	27.3	3.7	31.0	44.3	2.7	47.0	2028	
2029	15.8	3.0	18.8	0.0	0.0	0.0	15.8	3.0	18.8	34.4	6.6	41.0	28.8	2.3	31.1	2.4	0.4	2.8	2029	
2030	16.6	2.2	18.8	0	0	0.0	16.6	2.2	18.8	36.2	4.8	41.0	15.0	1.2	16.2	2.5	0.3	2.8	2030	
2031	17.5	1.4	18.9	0.0	0.0	0.0	17.5	1.4	18.9	38.0	2.9	40.9	7.6	0.6	8.2	2.6	0.1	2.7	2031	
2032	18.3	0.5	18.8	0	0.0	0.0	18.3	0.5	18.8	40.0	1.0	41.0	7.9	0.2	8.1	0.0	0.0	0.0	2032	
Total	855.3 (a)	631.4	1,486.7	22.8 (b)	2.9	25.7	878.1	634.3	1,512.4	1,870.7	1,181.8 (c)	3,052.5	936.4	652.6	1,589.0	1,144.1	896.2	2,040.3		
Sinking Fund Assets Held by Fiscal Agent Available City	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Sinking Fund Assets	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	160.9	0.7 (d)	161.6	99.4	0.0	99.4	57.9	6.5	64.4 (e)		
Net Debt	\$ 855.3	\$ 631.4	\$ 1,486.7	\$ 22.8	\$ 2.9	\$ 25.7	\$ 878.1	\$ 634.3	\$ 1,512.4	\$ 1,709.8	\$ 1,181.1	\$ 2,890.9	\$ 837.0	\$ 652.6	\$ 1,489.6	\$ 1,086.2	\$ 889.7	\$ 1,975.9		

NOTES:

- (a) Included in this amount is \$1.8 million issued for Port purposes which has been reclassified as Tax-Supported due to the sale of the Port Corporation.
- (b) Of this amount, Bonds have been issued for the following major purposes: Water and Sewer, \$11.5 million; Airport, \$7.7 million; Veterans Stadium, \$4 million and Subways, \$2.5 million. Issues for five other purposes account for the balance of \$7 million.
- (c) Interest on \$94.6 million Water and Sewer Variable Rate Bonds is based on the estimated short-term interest rate of 2.8241%.
- (d) In addition to the \$161.6 million available in Sinking Fund Assets, \$136.3 million has been reserved in the Water and Sewer Rate Stabilization Fund in accordance with the Seventh Supplemental Amendment to the General, Water and Sewer Revenue Bond Ordinance of 1974 as amended by Bill No. 544 dated June 24, 1993.
- (e) In addition to the \$64.4 million available in Sinking Fund Assets, \$2.5 million has been reserved in a Renewal, Replacement and Contingency Fund, which has been funded by the proceeds of the Series 1978 Aviation Revenue Bonds.

**Table 17 (cont.)
City of Philadelphia
City and Gas Works Related Annual Debt Service on Long-Term Debt
As of June 30, 2002
(Amounts in Millions of Dollars)**

Fiscal Year	Total Revenue Bonds			Total General Obligation and Revenue Bonds			Other Long-Term Obligations			Total Long-Term Debt			Fiscal Year
	Principal	Interest	Total	Principal	Interest	Total	Principal	Interest	Total	Principal	Interest	Total	
2003	139.4	201.8	341.2	187.7	245.3	433.0	93.5	96.1	189.6	281.2	341.4	622.6	2003
2004	141.3	198.0	339.3	188.4	239.0	427.4	73.7	94.1	167.8	262.1	333.1	595.2	2004
2005	137.5	191.8	329.3	168.8	230.4	399.2	79.1	92.0	171.1	247.9	322.4	570.3	2005
2006	153.5	183.1	336.6	171.7	220.2	391.9	84.4	89.3	173.7	256.1	309.5	565.6	2006
2007	144.3	175.3	319.6	164.5	211.7	376.2	94.0	85.8	179.8	258.5	297.5	556.0	2007
2008	153.5	168.2	321.7	178.1	203.7	381.8	90.7	81.8	172.5	268.8	285.5	554.3	2008
2009	158.6	161.1	319.7	184.4	195.3	379.7	98.8	77.9	176.7	283.2	273.2	556.4	2009
2010	163.4	153.7	317.1	190.3	186.7	377.0	116.7	73.4	190.1	307.0	260.1	567.1	2010
2011	181.5	143.7	325.2	209.9	175.4	385.3	127.5	67.7	195.2	337.4	243.1	580.5	2011
2012	183.1	132.6	315.7	212.6	162.9	375.5	138.2	61.5	199.7	350.8	224.4	575.2	2012
2013	173.4	123.4	296.8	203.4	152.2	355.6	145.1	59.8	204.9	348.5	212.0	560.5	2013
2014	194.6	113.4	308.0	226.1	140.7	366.8	148.0	57.9	205.9	374.1	198.6	572.7	2014
2015	203.8	102.8	306.6	236.9	128.4	365.3	259.1	56.0	315.1	496.0	184.4	680.4	2015
2016	206.1	93.0	299.1	237.0	117.0	354.0	143.5	54.0	197.5	380.5	171.0	551.5	2016
2017	126.6	82.2	208.8	159.0	104.5	263.5	144.8	51.8	196.6	303.8	156.3	460.1	2017
2018	131.1	75.3	206.4	165.1	96.1	261.2	150.9	49.7	200.6	316.0	145.8	461.8	2018
2019	117.1	68.5	185.6	152.7	87.6	240.3	137.8	47.2	185.0	290.5	134.8	425.3	2019
2020	111.6	62.5	174.1	149.0	79.8	228.8	128.6	45.8	174.4	277.6	125.6	403.2	2020
2021	116.0	56.7	172.7	144.0	72.1	216.1	130.0	44.3	174.3	274.0	116.4	390.4	2021
2022	120.7	50.5	171.2	150.1	64.6	214.7	131.4	43.0	174.4	281.5	107.6	389.1	2022
2023	126.2	44.1	170.3	157.1	56.7	213.8	132.7	41.6	174.3	289.8	98.3	388.1	2023
2024	115.5	37.5	153.0	147.9	48.5	196.4	134.2	40.0	174.2	282.1	88.5	370.6	2024
2025	120.2	31.4	151.6	154.3	40.7	195.0	135.8	38.4	174.2	290.1	79.1	369.2	2025
2026	103.7	25.1	128.8	132.2	32.7	164.9	137.4	36.8	174.2	269.6	69.5	339.1	2026
2027	108.8	20.0	128.8	138.8	26.1	164.9	130.6	34.2	164.8	269.4	60.3	329.7	2027
2028	104.3	14.5	118.8	135.7	19.1	154.8	134.6	26.2	160.8	270.3	45.3	315.6	2028
2029	65.6	9.3	74.9	81.4	12.3	93.7	246.8	10.4	257.2	328.2	22.7	350.9	2029
2030	53.7	6.3	60.0	70.3	8.5	78.8	22.9	1.9	24.8	93.2	10.4	103.6	2030
2031	48.2	3.6	51.8	65.7	5.0	70.7	24.2	0.6	24.8	89.9	5.6	95.5	2031
2032	47.9	1.2	49.1	66.2	1.7	67.9	0.0		0.0	66.2	1.7	67.9	2032
Total	3,951.2	2,730.6	6,681.8	4,829.3	3,364.9	8,194.2	3,615.0	1,559.2	5,174.2	8,444.3	4,924.1	13,368.4	
Sinking Fund Assets Held by Fiscal Agent	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Available City Sinking Fund Assets	318.2	7.2	325.4	318.2	7.2	325.4	0.0	0.0	0.0	318.2	7.2	325.4	
Net Debt	\$ 3,633.0	\$ 2,723.4	\$ 6,356.4	\$ 4,511.1	\$ 3,357.7	\$ 7,868.8	\$ 3,615.0	\$ 1,559.2	\$ 5,174.2	\$ 8,126.1	\$ 4,916.9	\$ 13,043.0	

NOTES:

- (a) Included in this amount is \$1.8 million issued for Port purposes which has been reclassified as Tax-Supported due to the sale of the Port Corporation.
- (b) Of this amount, Bonds have been issued for the following major purposes: Water and Sewer, \$11.5 million; Airport, \$7.7 million; Veterans Stadium, \$4 million and Subways, \$2.5 million. Issues for five other purposes account for the balance of \$7 million.
- (c) Interest on \$94.6 million Water and Sewer Variable Rate Bonds is based on the estimated short-term interest rate of 2.8241%.
- (d) In addition to the \$161.6 million available in Sinking Fund Assets, \$136.3 million has been reserved in the Water and Sewer Rate Stabilization Fund in accordance with the Seventh Supplemental Amendment to the General, Water and Sewer Revenue Bond Ordinance of 1974 as amended by Bill No. 544 dated June 24, 1993.
- (e) In addition to the \$64.4 million available in Sinking Fund Assets, \$2.5 million has been reserved in a Renewal, Replacement and Contingency Fund, which has been funded by the proceeds of the Series 1978 Aviation Revenue Bonds.

CITY CAPITAL IMPROVEMENT PROGRAM

The Capital Improvement Program for Fiscal Years 2003-2008 contemplates a total expenditure of \$4,211,894 billion, of which \$1,658,979 billion 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 2003-2008 on May 2, 2002.

Table 18
City of Philadelphia
Fiscal Years 2003-2008
Capital Improvement Program

(Amounts in Thousands)

	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>Total</u>
City Funds – Tax Supported							
New Loans	89,946	81,604	67,931	58,847	51,340	48,343	398,011
Operating Revenue	20,912	5,375	4,650	4,650	4,650	4,650	44,887
Carry Forward	208,098						208,098
Prefinanced Loans	3,500	1,000	1,000	1,000	1,000	1,000	8,500
PICA-Prefinanced Loans	42,298	0	0	0	0	0	42,298
Tax-Supported Total	<u>364,754</u>	<u>87,979</u>	<u>73,581</u>	<u>64,497</u>	<u>56,990</u>	<u>53,993</u>	<u>659,496</u>
City Funds – Self-Sustaining							
New Loans	219,919	264,193	464,359	153,490	121,141	133,558	1,356,660
Operating Revenue	59,496	16,487	16,687	16,887	17,087	17,287	143,931
Carry Forward	372,328	0	0	0	0	0	1,872,919
Self-Sustaining Total	<u>65,1743</u>	<u>280,680</u>	<u>481,046</u>	<u>170,377</u>	<u>138,228</u>	<u>150,845</u>	<u>1,872,919</u>
Other City Funds							
Revolving Funds	10,000	2,500	2,000	2,000	2,000	2,000	20,500
Total City Funds	<u>10,000</u>	<u>2,500</u>	<u>2,000</u>	<u>2,000</u>	<u>2,000</u>	<u>2,000</u>	<u>20,500</u>
Other Than City Funds							
Federal	189,980	41,234	32,568	66,108	19,670	13,210	362,770
Federal Off Budget	67,343	162,038	165,614	136,958	92,525	62,000	686,478
State	45,881	4,363	2,442	10,362	3,880	2,690	69,618
State Off Budget	29,666	50,130	49,424	58,583	46,013	33,860	267,676
Private	73,479	12,395	11,090	1,475	70	20	98,529
Other Governments/Agencies	151,610	18,000	0	0	0	0	169,610
Other Governments/Agencies Off-Budget	124	941	995	828	795	615	4,298
Other Than City Funds total	<u>558,083</u>	<u>289,101</u>	<u>262,133</u>	<u>274,314</u>	<u>162,953</u>	<u>112,395</u>	<u>1,658,979</u>
TOTAL ALL FUNDS	<u><u>1,584,580</u></u>	<u><u>660,260</u></u>	<u><u>818,760</u></u>	<u><u>511,188</u></u>	<u><u>360,171</u></u>	<u><u>319,233</u></u>	<u><u>4,211,894</u></u>

Source: City of Philadelphia, Office of Budget and Program Evaluation, Capital Program Office.

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 and \$30.0 million for Fiscal Year 2002. The City’s Five-Year Plan dated January 2003 includes estimates of settlements and judgments from the General Fund of \$26.0 million, \$28.4 million, \$29.8 million, \$30.6 million and \$32.1 million for the Fiscal Years 2003 through 2007, respectively. 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 have averaged \$31.3 million over the past five years.

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 adverse 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) various civil rights claims; (iv) a class action suit challenging the City’s practice of utilizing Social Security benefits for reimbursement of expenses incurred by children in foster care; (v) 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 (vi) a mandamus action to compel the Mayor to provide free trash collection to all condominiums and cooperatives.

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 2002 which resulted from these claims and lawsuits was \$3.7 million. The estimated loss for Fiscal Year 2003 is \$4.2 million. The Water Department's budget for Fiscal Year 2003 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.

APPENDIX A

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 a very livable city with relatively low housing costs. Philadelphia is the most affordable of the nation's 27 largest housing markets.

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, 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 Veterans Stadium, the First Union Spectrum and the First Union Center, is home to the Philadelphia Phillies, 76ers, Flyers, 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 45 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 PMSA increased by 5.0%, less than one-half the national rate of increase.

**Table A-1
Population
City, PMSA & Nation**

	1990	2000	% Change 1990-2000
Philadelphia	1,585,577	1,517,550	-4.3%
Philadelphia PMSA*	4,856,881	5,100,931	5.0%
United States	249,632,692	281,421,906	12.7%

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 A-2
Population Age Distribution**

Age	Philadelphia				Pennsylvania			
	1990	% of Total	2000	% of Total	1990	% of Total	2000	% of Total
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			
	1990	% of Total	2000	% of Total
0-24	90,342,198	36.3	99,437,266	35.3
25-44	80,754,835	32.5	885,040,251	30.2
45-64	46,371,009	18.6	61,952,636	22.0
65-84	28,161,666	11.3	330,752,166	11.0
85 & Up	3,080,165	1.2	44,239,587	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 A-3
Office Rental Rates in Cities
Throughout the United States

(In \$ Per Square Foot)

	June, 1997	June, 1998	Sept, 1999	Sept, 2000	March 2001	March 2002
Atlanta	19.50	20.07	20.00	20.20	22.08	21.60
Chicago	19.05	21.77	25.99	28.16	24.03	24.02
Dallas	17.54	19.43	19.99	20.87	18.51	19.77
Denver	15.78	16.98	18.50	19.70	18.27	16.58
Houston	14.53	17.28	21.09	22.61	16.30	18.20
Los Angeles	18.12	20.04	20.16	20.64	27.30	27.42
New York	30.10	34.88	33.08	43.10	53.26	47.20
Philadelphia	18.50	19.50	19.80	21.28	23.49	22.16
Phoenix	17.62	18.15	19.81	20.28	21.57	21.11
Portland	16.29	17.93	20.25	21.50	20.50	20.00
San Francisco	33.79	43.93	47.00	78.21	61.80	30.20
St. Louis	19.15	19.88	19.09	19.35	17.97	17.83
Tampa	14.50	14.65	18.20	20.25	18.93	18.89
Washington, D.C.	24.20	24.68	32.90	35.76	30.52	30.63

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 A-4 and A-5, 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 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, PAID took ownership of more than 1,000 acres at the site and has begun to implement aggressive redevelopment activities. To date, 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.

[REMAINDER OF THE PAGE INTENTIONALLY LEFT BLANK]

**Table A-4
Labor Force Data Annual Average
Based On Residency**

	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994^(a)</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>
Philadelphia (000)											
Labor Force	689.6	682.2	677.0	657.0	644.2	641.4	643.0	640.0	644.2	628.7	639.8
Employment	628.6	618.0	612.9	604.6	594.4	596.1	598.3	600.4	606.9	590.1	599.1
Unemployment	60.9	61.0	64.1	52.5	49.8	45.3	44.7	39.6	36.8	38.6	40.7
Unemployment Rate (%)	8.8	9.4	9.4	8.0	7.7	7.1	7.0	6.2	5.8	6.1	6.4
Philadelphia PMSA (000)											
Labor Force	2,473.8	2,467.2	2,446.7	2,428.5	2,428.5	2,464.2	2,502.1	2,493.1	2,515.4	2,503.2	2,534.8
Employment	2,300.7	2,273.0	2,272.8	2,280.5	2,286.3	2,334.1	2,380.5	2,385.5	2,412.9	2,403.5	2,425.1
Unemployment	173.1	194.2	173.9	148.0	142.2	130.1	121.6	107.6	104.6	99.8	109.7
Unemployment Rate (%)	7.0	7.9	7.1	6.1	5.9	5.3	4.9	4.3	4.1	4.0	4.3
United States (000,000)											
Labor Force	126.3	128.1	129.2	131.1	132.3	133.9	136.3	137.7	139.4	140.9	141.9
Employment	117.7	118.5	120.3	123.1	124.9	126.7	129.6	131.5	133.5	135.2	134.2
Unemployment	8.6	9.6	8.9	8.0	7.4	7.2	6.7	6.2	5.9	5.7	7.7
Unemployment Rate (%)	6.8	7.5	6.9	6.1	5.6	5.4	4.9	4.5	4.2	4.0	5.4

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.

**Table A-5
Philadelphia
Total Monthly Employment And Monthly Unemployment Rates
Based On Residency
1997 – 2001**

<u>Month</u>	<u>Total Employment</u>					<u>Unemployment Rate %</u>				
	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>
January	585.3	592.3	589.6	582.3	589.3	6.9	6.6	5.8	6.1	6.2
February	588.7	592.2	590.5	581.7	588.9	6.8	6.3	5.9	6.1	6.4
March	591.4	594.4	595.6	583.6	592.8	6.8	6.2	5.8	5.9	6.1
April	592.8	595.4	598.0	585.3	593.4	6.8	6.1	5.6	5.5	5.7
May	593.1	595.2	600.1	586.6	596.8	7.3	6.6	6.0	6.1	6.4
June	603.7	603.4	606.7	595.2	605.6	6.9	6.3	6.3	6.2	6.6
July	607.2	609.0	611.8	598.8	609.9	7.3	6.5	6.5	6.4	6.6
August	605.4	608.3	609.9	596.9	606.0	7.0	6.2	6.2	6.1	6.5
September	596.2	598.4	600.0	586.8	600.1	7.7	6.6	6.7	6.9	6.7
October	601.9	603.8	607.7	592.4	601.1	7.2	6.1	6.0	6.5	6.7
November	606.6	605.1	608.9	594.7	602.1	7.0	6.0	6.0	6.5	6.6
December	608.6	607.2	613.1	597.0	602.9	5.7	4.9	5.0	5.3	5.8

Source: Pennsylvania Department of Labor and Industry, Bureau of Research & Statistics.

Table A-6
Philadelphia City
Non-Farm Payroll Employment*

(Amounts In Thousands)

	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000**</u>
Total Employment	689.8	681.3	678.5	665.9	676.2	681.2	674.3	679.2	693.4
Manufacturing	68.9	66.0	64.5	61.1	60.4	60.2	57.7	56.6	57.0
Non-Manufacturing	620.9	615.3	614.0	604.8	615.8	621.0	616.6	622.6	636.5
Construction & Mining	11.4	10.7	11.8	10.5	10.2	10.1	10.8	10.3	12.5
Transportation & Public Utilities	37.4	37.9	38.0	33.4	32.6	33.1	34.1	35.8	35.7
Wholesale & Retail Trade	119.9	117.0	114.3	114.8	113.9	117.2	112.5	112.3	118.4
Finance, Insurance & Real Estate	59.8	57.7	58.0	56.0	53.9	55.2	52.3	51.3	49.5
Services	263.5	265.8	271.6	272.1	278.0	279.5	291.8	293.1	297.7
Government	135.1	131.8	132.1	128.5	127.2	125.9	115.1	113.2	122.7

Source: Pennsylvania Department of Labor and Industry, Bureau of Research and Statistics.

* Includes persons employed within the City, without regard to residency.

** Figures are based on estimate

Table A-7
City of Philadelphia
Largest Non-Governmental Employers In Philadelphia
December 31, 2002

Albert Einstein Medical

Aramark Food & Support Services Group

Cardone Industries, Inc.

Children's Hospital of Philadelphia

Delaware Management Business Trust

Drexel University

Everen Capital Corporation

Frankford Hospital

Independence Blue Cross

PA. Hospital of Univ of Penn Health Systems

Philadelphia Gas Works

Philadelphia Newspapers, Inc.

SEPTA

Smith Kline Beecham Corporation

Sunoco, Inc.

Temple University

Temple University Hospital Inc.

Tenet Health System Philadelphia Inc.

Tenet Phila Health & Ed (MCP Hahnemann)

Thomas Jefferson University

Thomas Jefferson University Hospitals

Towers, Perrin, Forster & Crosby, Inc.

University of Pennsylvania Hospital

University of Pennsylvania

Verizon Services Corporation

Source:

Philadelphia Department of Revenue

Table A-8
Fortune 500
Largest Corporations
With Headquarters In Philadelphia, 2001

Corporation	Type of Industry	Ranking	Revenues (\$ Millions)
Cigna	Health Care	102	\$19,994.0
Sunoco	Petroleum Refining	154	\$12,664.0
Comcast	Telecommunications	233	\$ 8,218.6
Crown Cork & Seal	Metal Products	250	\$ 7,289.0
ARAMARK	Diversified Outsourcing Services	253	\$ 7,262.9

Source: Fortune Magazine, April 28, 2001.

Table A-9
Fortune 500
Largest Service Corporations
With Headquarters In Philadelphia, 2001

Corporation	Type of Industry	Ranking	Revenues (\$ Millions)
Cigna	Health Care	102	\$19,994.0
Comcast	Telecommunications	233	\$ 8,218.6
ARAMARK	Diversified Outsourcing Services	253	\$ 7,262.9
Lincoln National	Insurance: Life & Health	274	\$ 6,851.5

Source: Fortune Magazine, April 18, 2001.

Table A-10
Total Industry Employment By Establishment
Annual Averages

(Amounts In Thousands)

Philadelphia PMSA

	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>
Non-Agricultural Employment	2,095.5	2,129.3	2,169.1	2,178.9	2,214.4	2,257.5	2,315.6	2,322.1	2,394.2
Goods Producing	386.7	390.9	392.7	386.0	384.9	393.0	396.2	387.0	398.6
Construction & Mining	73.7	77.0	79.2	77.9	79.1	87.8	90.4	86.3	99.1
Manufacturing	313.0	313.8	313.5	308.1	305.8	305.2	305.8	300.7	299.5
Durable Goods	149.9	148.5	149.0	148.9	146.6	146.0	147.4	143.7	142.8
Nondurable Goods	163.1	165.3	164.5	159.2	159.3	159.2	158.4	157.0	156.7
Service Producing	1,708.8	1,738.4	1,776.4	1,792.9	1,829.5	1,864.5	1,919.4	1,935.1	1,995.6
Transp. & Public Utilities	97.8	102.3	105.4	103.6	104.6	106.9	109.9	113.4	114.3
Wholesale & Retail Trade	486.9	468.8	479.5	487.2	493.3	498.3	506.8	503.2	526.3
Fin., Insurance & Real Estate	157.4	156.3	158.0	153.9	154.4	157.3	161.6	162.7	169.2
Services	685.0	708.9	729.1	744.1	774.8	806.6	848.5	859.0	886.0
Government	299.7	302.1	304.4	304.1	302.3	295.4	292.6	296.8	299.8
Federal Government	75.0	73.1	73.6	69.0	65.0	58.1	55.9	57.7	57.8
State & Local Government	224.7	229.0	230.8	235.1	237.4	237.3	236.7	239.1	242.1

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 A-11
Consumer Price Indices and Median Household Effective Buying Income

	<u>1990</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>
CPI-U United States(a)	130.7	153.5	155.1	160.5	163.0	166.6
CPI-U Philadelphia PMSA(a)	135.8	158.7	164.3	166.5	168.2	171.9
Median Household Effective Buying Income(b)						
Philadelphia	\$24,880	\$27,542	\$28,557	\$29,561	\$30,127	\$31,621
Philadelphia PMSA	\$33,277	\$39,470	\$41,192	\$42,852	\$44,425	\$47,152
United States	\$27,912	\$32,238	\$33,482	\$34,618	\$35,377	\$37,233

Source:

(a) Consumer Price Index - All Urban Consumers. U.S. Bureau of Labor Statistics.

(b) "2000 Survey of Buying Power"

Table A-12
Number of Households By Income Range In Philadelphia County

<u>Income</u>	<u>Number of Households*</u>		<u>Percentage of Households*</u>	
	<u>1990</u>	<u>1980</u>	<u>1990</u>	<u>1980</u>
Under \$5,000	59,823	127,401	9.9	20.5
\$5,000-9,999	76,512	116,931	12.7	18.8
\$10,000-14,999	59,331	98,540	9.9	15.9
\$15,000-24,999	108,405	150,851	18.1	24.3
\$25,000-49,999	190,237	112,508	31.7	18.1
\$50,000 and over	106,432	14,4508	17.57	2.35
Total	600,740	620,639	100.0%	100.0%

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

<u>Income</u>	<u>Number of Households (000's)</u>			<u>Percentage of Households</u>		
	<u>1990</u>	<u>1980</u>	<u>1970</u>	<u>1990</u>	<u>1980</u>	<u>1970</u>
Under \$5,000	5,684	10,663	10,373	6.2	13.3	20.3
\$5,000-9,999	8,530	12,772	16,630	9.3	15.9	32.5
\$10,000-14,999	8,133	12,342	13,617	8.8	15.3	26.6
\$15,000-24,999	16,124	21,384	8,177	17.5	26.6	16.0
\$25,000-49,999	31,003	19,614	2,371*	33.7	24.3	4.6*
\$50,000 and over	22,519	3,692	N/A*	24.5	4.6	N/A*
Total	91,994	80,467	51,168	100.0%	100.0%	100.0%

Source: U.S. Department of Commerce, Economics and Statistics Administration, 1990 Census of Population

* In 1970 the highest income range was \$25,000 and over.

Retail Sales

The following table reflects taxable sales for Philadelphia from fiscal years 1994 to 2001.

Table A-13
Philadelphia
Taxable Retail Sales 1994-2001

(\$000's)

Fiscal Year	Taxable Sales
1994	8,366,567
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

Source: Figures determined by dividing remitted sales tax reported by the Pennsylvania Department of Revenue by the sales tax rate of 0.06.

The following table compares retail sales activity among the City, the PMSA, Pennsylvania, and the United States.

Table A-14
Retail Sales By Store Group (\$000)
2000

	Philadelphia	PMSA	Pennsylvania	United States
Total Retail Sales*	10,874,471	58,258,726	141,940,701	3,409,490,367
Food	1,948,678	8,858,582	20,734,966	464,261,976
Eating & Drinking	1,521,992	4,880,129	11,742,263	303,905,297
Gen. Merchandise	799,776	5,109,025	14,741,017	417,852,013
Furniture, Furnishings	448,056	2,805,614	5,779,514	179,178,997
Automotive	1,988,652	15,701,718	39,213,344	927,141,001

Source: Sales and Marketing Management, "2000 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.

Effective Buying Income and Household Income

The median household effective buying income for the City in 1999 was \$31,621, 67.1% of the PMSA median household effective buying income, and 84.9% of the U.S. median household effective buying income. In 1998 the Philadelphia metropolitan area had the nation's fifth largest total effective buying 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 A-15
City And PMSA Effective Buying Income
1999

	Total EBI (\$000)	Median Household EBI	% of Household EBI		
			\$20,000- 34,999	\$35,000- 49,999	\$50,00 0 and Over
Philadelphia (City)	\$ 22,002,926	\$31,621	20.9	16.2	29.6
Bucks Co.	14,517,150	58,281	13.7	15.7	59.6
Chester Co.	13,227,520	68,588	11.6	12.8	66.3
Delaware Co.	12,078,536	49,343	16.9	16.8	49.3
Montgomery Co.	20,793,236	56,963	14.8	15.7	57.7
Burlington Co., NJ	9,148,321	53,310	16.0	17.5	54.4
Camden Co., NJ	9,254,922	43,229	18.8	17.9	42.1
Gloucester Co., NJ	4,650,606	48,747	17.0	18.1	48.5
Salem Co., NJ	1,232,180	45,680	17.2	16.7	44.9
Pennsylvania	227,495,309	38,922	20.7	17.8	37.3
United States	4,877,786,658	37,233	22.0	18.0	36.4

Source: Sales and Marketing Management, "2000 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 eight 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 eleven domestic carriers and eleven regional and commuter carriers, while four foreign flag carriers and one U.S. carrier provide international service. In addition, there are eight all-cargo carriers. PHL serves as a key connecting hub for USAirways. PHL opened a new commuter terminal in 2001 and is constructing a new international terminal which is expected to open in 2003. In addition to the new international terminal and the new commuter terminal, ramp and roadway development, and two new parking garages to be owned by the Philadelphia Parking Authority are also planned.

In 2002, PHL ranked 19th in the nation in terms of total passengers, up from 21st in 2001 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 the Pennsylvania Suburban Corporation and the Bucks County Water and Sewer Authority. The City obtains approximately 56 percent of its water from the Delaware River and the balance from the Schuylkill River. The water system serves approximately 474,000 households 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 474,000. 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 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 2002 and may be extended further for up to three additional years.

Housing

The City boasts a diversity of neighborhoods and housing opportunities. There are over 100 neighborhoods, some of which trace their origin to the seventeenth century and the early settlements of the City. Approximately 60% of the City's housing units are owner-occupied.

Housing costs are low relative to the largest metropolitan areas in the United States, and costs are very competitive with major metropolitan areas in the Northeast. Since 1988, home ownership and rental costs in Philadelphia have increased more slowly than costs in Pittsburgh, Baltimore, and Washington, D.C.

Table A-16
Housing Affordability In Major Markets

American Housing Survey Data: Value of Recently Built Homes**

MSA Name	1997 MIRS* Sample Conventionally Financed New Construction	Median Value Constructed 1994-1997	Average Value Constructed in 1994-1997	Year of AHS Survey
Atlanta, GA	\$133,500	\$139,146	\$154,420	96
Buffalo, NY	N/A	170,926	174,320	94
Charlotte, NC/SC	155,500	118,181	135,340	95
Chicago, IL	185,000	191,502	203,740	95
Cleveland, OH	203,000	194,787	207,660	96
Columbus, OH	N/A	145,018	155,800	95
Dallas, TX	160,354	121,613	138,850	94
Denver, CO	179,195	193,707	203,530	95
Detroit, MI	167,900	162,605	176,070	95
Forth Worth/Arlington., TX	148,473	147,684	155,980	94
Hartford, CT	153,000	197,534	201,620	96
Indianapolis, IN	147,758	139,085	150,400	96
Kansas City, MO/KS	167,248	148,990	159,780	95
Los Angeles/Long Beach, CA	222,665	N/A	198,840	95
Memphis, TN/ARMS	160,157	124,638	134,020	96
Miami/Ft. Lauderdale, FL	132,995	145,897	158,850	95
Milwaukee, WI	175,285	179,154	185,990	94
New Orleans, LA	N/A	113,277	120,340	95
New York/Nassau/Suffolk, NY	231,500	N/A	200,970	95
Newark, NJ	195,000	145,873	176,940	95
Oklahoma City, OK	121,102	121,968	130,200	96
Orange County, CA	251,000	250,053	N/A	94
Philadelphia/PA, NJ	191,815	157,881	174,500	95
Phoenix, AZ	154,671	137,881	153,450	94
Pittsburgh, PA	169,000	174,180	173,800	95
Portland, OR	161,275	181,465	191,340	95
Riverside/San Bernadino, CA	169,440	138,327	151,660	94
Sacramento, CA	185,475	172,890	185,230	96
St. Louis, MO/IL	161,786	143,477	155,150	96
San Antonio, TX	124,990	116,069	125,150	95
San Diego, CA	235,000	226,279	N/A	94
Seattle/Everett, WA	180,000	209,419	210,190	96

Source: U.S. Department of Housing and Urban Development Office of Policy Development and Research

* MIRS data is from the Federal Housing Finance Board. Sample is national in design; thus, in some MSAs the data may come from only a small number of lenders.

** AHS data as of year of survey.

Table A-17
Characteristics of Housing Units

	<u>1970</u>	<u>1980</u>	<u>1990</u>	<u>2000</u>
Total Housing Units				
City of Philadelphia	673,524	685,629	674,899	661,959
Philadelphia PMSA	1,536,872	1,554,651	1,491,310	1,565,641
Pennsylvania	3,924,757	4,597,412	4,938,140	5,249,750
Percent Owner Occupied				
City of Philadelphia	59.7%	61.0%	62.0%	59.3%
Philadelphia PMSA	67.1%	63.4%	68.5%	68.4%
Median Value of Owner Occupied Housing				
City of Philadelphia	\$10,600	N/A	\$48,400	N/A
Philadelphia PMSA	14,900	\$41,700	96,700	N/A
Pennsylvania	13,600	39,100	67,900	N/A
Number of Persons per Housing Unit				
City of Philadelphia	2.50	2.66	2.63	2.65

Source: U.S. Department of Commerce, Bureau of the Census.

While the City's housing market has remained fairly stable, there has been significant development in the commercial real estate sector. The table below summarizes certain information concerning construction activity.

Table A-18
Construction Authorized By Building Permit
Declared Valuation

(Millions of Dollars)

	<u>Residential</u>	<u>Commercial</u>	<u>Other *</u>	<u>Total</u>	<u>Housing Units</u>
1989	104.9	434.9	118.7	658.5	1,496
1990	84.9	469.9	108.0	662.8	1,213
1991	55.1	391.0	41.7	487.8	614
1992	47.7	371.7	97.4	516.7	361
1993	81.8	319.5	54.3	455.6	307
1994	89.7	304.9	54.3	448.9	262
1995	82.5	298.6	53.7	434.8	253
1996	124.5	457.6	163.2	745.3	636
1997	101.9	382.2	176.7	660.9	509
1998	316.2	753.9	196.3	1266.5	594

Source: City of Philadelphia, Department of Licenses and Inspections.

* Includes construction by government, industrial, medical and educational units.

In calendar years 2000 and 2001, 12,335 and 12,014 building permits, respectively, were issued. The total estimated cost of construction of housing units in calendar years 2000 and 2001 were \$1,147 million and \$1,441 million, respectively for 817 units and 934 units, respectively.

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. a hotel construction boom that has given the City more than 4,000 new hotel rooms, all within walking distance of the Pennsylvania Convention Center, in the last three years;
- B. the \$500 million Pennsylvania Convention Center;
- C. the Avenue of the Arts complex capped off by the \$255 million Regional Performing Arts Center;
- D. the creation of economic development zones to enhance existing economic development efforts already underway; and
- E. 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 19th among the nation's airports in terms of passenger traffic, serving 23.9 million passengers in calendar year 2001. In June 1998 a \$135 million renovation of terminals B and C was completed. A year later, construction began on a new \$440 million development project to construct new international and regional terminals, funded by a 1998 Airport Revenue Bond issue. An additional \$225 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 is scheduled to open in 2003. The Parking Authority completed in the fall of 2002 construction of two new Airport parking garages, which will provide a total of 5,000 additional parking spaces. Upon completion in 2003, 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. In 1998, for the second year in a row, Philadelphia hosted more major conventions than any other city in the Northeast and more than Boston and Washington combined. 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.

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

Center City Hotel Development

Part of the strategy of developing Philadelphia as a destination city to support its burgeoning hospitality industry and attracting the largest conventions was to add at least 2,000 hotel rooms within walking distance of the Pennsylvania Convention Center by the year 2000. That goal has been met and exceeded.

The hotels within walking distance of the Convention Center, which have opened since 1998 are:

Hotel	Approximate Total Program Cost	Number of Rooms	Completion Date
Hawthorne Suites/1100 Vine Street	\$24 million	294	Opened 1998
Alexander/12th and Spruce	N/A	48	Opened 1998
Sheraton/Rittenhouse Regency	\$24 million	192	Opened 1999
Bed & Breakfast/Rittenhouse Square	\$1.25 million	10	Opened 1999
Marriott/Reading Terminal Headhouse	\$40 million	213	Opened 1999
Union League Conversion	\$8.13 million	65	Opened 1999
Warwick Conversion	\$43.75 million	350	Opened 1999
Windsor Conversion	\$18.75 million	150	Opened 1999
Marriott Courtyard/City Hall Annex	\$77 million	500	Opened 1999
Club Quarters/17th and Chestnut	\$37.5 million	300	Opened 1999
Loews Hotel/PSFS Building Hotel	\$100 million	580	Opened 2000
Ritz Carlton/Two Mellon Center	\$88 million	330	Opened 2000
Hilton Gardens/Gallery Garage	\$35 million	280	Opened 2000
Sofitel/Stock Exchange Building	\$34.63 million	277	Opened 2000
Hyatt Regency/Penn's Landing	\$60 million	350	Opened 2001
Hampton Inn/13th and Race	\$33.75 million	270	Opened 2001
TOTALS	\$625.76 million	4,209	

Source: City of Philadelphia Five-year Financial Plan Fiscal Year 2001-Fiscal Year 2005.

Avenue of the Arts

The Avenue of the Arts is a multi-million dollar effort to convert the area along Broad Street in Center City north and south of City Hall into a concentrated performing arts and culture district. It consists of 14 different projects including a \$31 million High School for Creative and Performing Arts which opened in September 1997.

The last major project on the Avenue of the Arts is the Regional Performing Arts Center ("RPAC"), an approximately \$255 million project which opened in the Fall of 2001. Designed by a

world-class team of architects, RPAC is the home for the Philadelphia Orchestra, Concerto Soloists Chamber Orchestra, Philadanco and the Philadelphia Chamber Music Society.

Penn's Landing Waterfront

The City and Penn's Landing issued a Request for Qualification in December 2002. A short list of developers will be selected to compete for development rights to the site, with the expectation that a developer will be in place by May 2003, to ensure that development will be complete by 2005. The \$200 million complex will include retail and entertainment attractions, ice rinks, a 3000-seat outdoor amphitheater, a multi-screen movie theater, a new home for the Philadelphia Please Touch Museum and an aerial tram that will connect Philadelphia to the entertainment venues along Camden, New Jersey's waterfront.

New Stadium and Ballpark

A new stadium for the Philadelphia Eagles football franchise and a new ballpark for the Philadelphia Phillies baseball franchise are currently under construction and are expected to be completed in August 2003 and April 2004, respectively. The total cost of constructing both the stadium and the ballpark, including site acquisition and construction of parking facilities, is estimated to be approximately \$1 billion.

New Center City Skyscrapers

Liberty Property Trust has announced that it expects to begin the construction of a \$390 million project that will include two office buildings containing 1.1 million square feet as well as a glass enclosed winter garden and public plaza. The structures will be the first major Center City office development in more than ten years.

TJ Maxx Distribution Center

TJ Maxx has completed a new distribution facility in Northeast Philadelphia which will bring 1,100 new jobs to the City.

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.

Federal Empowerment Zone. In 1994 the City was named, along with Camden, New Jersey, as a bi-state federal empowerment zone. Since 1995, the City has received \$79 million in federal funds allocated to its three target areas: the American Street corridor of North Philadelphia, North Central Philadelphia and West Philadelphia. In the first seven years of existence of the zones, a number of achievements can be documented. In addition to the creation of lending and governance institutions in each of the zones and the provision of capital and technical assistance, 426 new businesses opened, 1790 jobs were created, and another 2,840 were retained. Highlights occurring in each of the three zones include:

Westside Park. Ground has been broken and a developer chosen for a 100,000 square foot retail center that will house a supermarket and other retail operations on a site assembled on North 52nd Street in West Philadelphia.

American Street. Asia Foods, a new \$4 million 60,000 square foot state-of-the-art warehouse facility and office building opened on the site of the former Sovereign Oil factory. The abandoned facility was demolished and environmental problems remediated to make way for the thriving business.

Keystone Opportunity Zones (“KOZ”). A state-wide program that exempts companies locating in designated areas from paying a variety of taxes until the year 2011, the Keystone Opportunity program in Philadelphia has attracted companies from outside the City and helped local companies stay and expand.

Philadelphia has 12 KOZ sub-zones located throughout the City from industrial parks in Northeast Philadelphia to portions of the Philadelphia Naval Business Center at the base of Broad Street in South Philadelphia. The sub-zones comprise approximately 1500 acres. CompuData, a Philadelphia computer company on the verge of leaving the City, was the first company in the Commonwealth to construct a building using the KOZ program when it built a new headquarter in the Byberry East Industrial Park.

By the end of 2000, 47 companies had made use of the KOZ program involving \$133 million in capital investment creating 1,993 new jobs and retaining 1,370 additional jobs.

Keystone Opportunity Expansion Zones (“KOEZ”). Under the second round of KOZ zones, called Keystone Opportunity Expansion Zones, the City applied to the Commonwealth to designate a parcel of land as a KOEZ and received Commonwealth approval. As with the KOZ zones, the KOEZ zones are designed primarily for vacant industrial/commercial properties with no existing businesses.

Philadelphia Industrial Development Corporation

The City’s efforts to retain and attract industry are directed by 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 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”) is a demonstration project created in 1996 through a grant from the Pew Charitable Trusts (“Pew”) and operated by PIDC to strengthen neighborhood-based manufacturing in lower Northeast Philadelphia. The area has 330 manufacturing businesses and nearly 12,000 manufacturing jobs.

The strategy of the program is to build a network of relationships among manufacturers, between manufacturers and the UII staff and between manufacturers and the rest of the community. Outcomes to date include creation of a micro-loan fund which has provided 14 loans totaling more than \$850,000 and leveraging an additional \$2.3 million in private financing and equity and a new product development forum, in conjunction with the Ben Franklin Technology Center. The program has been extended through 2002 with additional funds from Pew and new funds from the First Union Foundation.

The Office of Defense Conversion Activities

The Office of Defense Conversion within 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 is the PNBC. PAID acquired these assets from the Navy in March 2000. The PNBC totals in excess of 1,000 acres and includes four discreet 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. Forty-seven private companies currently occupy in excess of 2 million square feet of facilities. In addition, the Navy also occupies 2 million square feet of research, office and industrial facilities within the campus. Total employment is currently in excess of 5,500.

The largest and most significant 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 \$250 million facility completed, Kvaerner Philadelphia Inc. now employs in excess of 900 workers on the site and has its first two container ships under construction. With its recent merger of its shipbuilding businesses with Aker Maritime Group, Kvaerner has reaffirmed its corporate commitment to shipbuilding worldwide and regained its position as Europe's leading shipbuilder.

PAID has also made significant gains in the acquisition and redevelopment of other closed military sites. 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 outpatient physical rehabilitation center. On the balance of the site, PAID recently completed the demolition of the massive hospital structure and 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 has completed the acquisition of this 85 acre site from the Army. Given the existence of a major underground plume of oil that is being remediated, the acquisition was structured to allow PAID to take title to 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 SF 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 SF of buildings to a private real estate developer to be renovated and marketed for commercial and warehousing space; (3) entered into an Agreement of Sale for the development of a new ACME supermarket on the site of a 3.5 acre parking lot; and (4) entered into an Agreement of Sale for a 45 acre parcel that will result in the development of an \$80 million retail center that will employ in excess of 1,000 people. Both the supermarket and retail developments are expected to begin construction in 2002.

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 initial publication date.

Table A-19
City of Philadelphia
Hospitals and Medical Centers
(as of 1999)

Institution	Beds
Albert Einstein Medical Center	701
Belmont Center for Treatment	146
Charter Fairmont Institute	136
Chestnut Hill Hospital	189
Children's Hospital of Philadelphia	304
Children's Seashore House	77
Episcopal Hospital	218
Fox Chase Cancer Center	74
Frankford Hospital	490
Friedman Hospital of the Home for the Jewish Aged	566
Friends Hospital	192
Germantown Hospital and Community Services ⁽¹⁾	158
Graduate Hospital, main campus	198
Hahnemann Hospital	540
City Avenue Hospital ⁽²⁾	195
Parkview Hospital ⁽³⁾	165
Jeanes Hospital	206
John F. Kennedy Memorial	141
Kensington Hospital	45
Magee Rehabilitation Hospital	96
Medical College of Pennsylvania Hospital ⁽⁴⁾	369
Nazareth Hospital	222
Temple East, Newmann Medical Center ⁽⁵⁾	166
North Philadelphia Health System	315
Northeast Hospital	166
Pennsylvania Hospital	346
Presbyterian Medical Center of the University of Pennsylvania Health System ⁽⁶⁾	325
Roxborough Memorial Hospital	129
Saint Agnes Medical Center	172
Shriners Hospital for Crippled Children	59
St. Christopher's Hospital	130
Temple University Hospital	398
Thomas Jefferson University Hospital	992
University of Pennsylvania Medical Center	659
Veterans Affairs Medical Center	656

Source: AHA Guide to Hospital Statistics, 2000 Edition.

- (1) Formerly Known as Germantown Hospital & Medical Center
- (2) Formerly Known as Graduate Hospital, City Avenue
- (3) Formerly Known as Graduate Hospital, Parkview
- (4) Formerly Known as Medical College Hospitals, main campus
- (5) Formerly Known as Neuman Medical Center
- (6) Formerly Known as Presbyterian Medical Center of Philadelphia

Children's Hospital Expansion. Children's Hospital of Philadelphia recently 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 that were under construction in the City as of the close of 2001. Construction has been completed on several of the projects.

**Table A-20
Projects Under Construction**

Project	Estimated Cost
Philadelphia International Airport Terminals	\$680,000,000
University of Pennsylvania/Civic Center	450,000,000
Philadelphia Eagles Stadium	395,000,000
Philadelphia Phillies Ballpark	346,000,000
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-FY2008.

[THIS PAGE INTENTIONALLY LEFT BLANK]

APPENDIX V

FORM OF OPINION OF CO-BOND COUNSEL

[THIS PAGE INTENTIONALLY LEFT BLANK]

[Form of Co-Bond Counsel Opinion]

April 1, 2003

City of Philadelphia
Philadelphia, Pennsylvania

Salomon Smith Barney Inc.
as the Underwriter
One Liberty Place
1650 Market Street, 45th Floor
Philadelphia, PA 19103

Re: \$381,275,000 City of Philadelphia, Pennsylvania Water and Wastewater Revenue Refunding Bonds, Variable Rate Series 2003

Ladies and Gentlemen:

We have acted as Co-Bond Counsel, together with Evans & Borden Evans, LLC, 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, Variable Rate Series 2003 (the "Variable Rate Series 2003 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 Variable Rate Series 2003 Bonds, approved November 22, 2002 (Bill No. 020670) (the "Ninth Supplemental Ordinance") and the Bond Committee Determination, dated March __, 2003 (the "Bond Committee Determination").

The Variable Rate Series 2003 Bonds are being issued for the purpose of providing funds which will be used to refund a portion the City's Water and Wastewater Revenue Bonds, Series 1993 and to pay costs of issuance relating to the Variable Rate Series 2003 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 and there are presently outstanding \$106,240,000 aggregate principal amount of Water and Sewer Revenue Bonds, Fifteenth Series and Sixteenth Series (collectively, 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 presently outstanding \$1,764,439,000 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 and the Series 2001B 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 are 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 and the Series 2001B Bonds are herein referred to collectively as the "Outstanding Bonds".

The Outstanding Bonds, the Variable Rate Series 2003 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.

The City has covenanted in the Ninth Supplemental Ordinance and the Bond Committee Determination that it will make no investment or other use of the proceeds of the Variable Rate Series 2003 Bonds which would cause the Variable Rate Series 2003 Bonds to be "arbitrage bonds" under Section 148 of the Internal Revenue Code of 1986, as amended (the "Code"), and the rules and regulations thereunder, and that it will comply with the requirements of said Section throughout the term of the Variable Rate Series 2003 Bonds. The City has further covenanted that it will comply with the requirements of the Code that must be met after the issuance of the Variable Rate Series 2003 Bonds in order that interest on the Variable Rate Series 2003 Bonds not be included in gross income for federal income tax purposes. An officer of the City has executed a certificate stating the reasonable expectations of the City on the date of issue of the Variable Rate Series 2003 Bonds as to future events that are material for purposes of Section 148 of the Code pertaining to arbitrage bonds. We have reviewed this certificate, and in our opinion the Variable Rate Series 2003 Bonds are not arbitrage bonds. Also, the City is filing with the Internal Revenue Service a report of the issuance of the Variable Rate Series 2003 Bonds as required by Section 149(e) of the Code as a condition of the exclusion from gross income of the interest on the Variable Rate Series 2003 Bonds for federal income tax purposes.

We have examined such proceedings, documents, statutes and decisions as we consider necessary as the basis for this opinion, including, inter alia, the Act, the General Ordinance, the Ninth Supplemental Ordinance, the Bond Committee Determination and an executed and authenticated Variable Rate Series 2003 Bond. We assume that all other Variable Rate Series 2003 Bonds have been similarly executed and authenticated.

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, Bond Committee Determination and the Variable Rate Series 2003 Bonds.

2. Under the Constitution and the laws of the Commonwealth of Pennsylvania, the General Ordinance, the Ninth Supplemental Ordinance, and the Bond Committee Determination, the City is authorized to issue the Variable Rate Series 2003 Bonds, and the terms of the Variable Rate Series 2003 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 Variable Rate Series 2003 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 Variable Rate Series 2003 Bonds, 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 Variable Rate Series 2003 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 Variable Rate Series 2003 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 Variable Rate Series 2003 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. Under existing law as presently enacted and construed, interest on the Variable Rate Series 2003 Bonds is excludable from gross income for purposes of federal income taxation, assuming the accuracy of certifications by the City and continuing compliance by the City with certain covenants and requirements of the Code, as described above. Interest on the Variable Rate Series 2003 Bonds will not be an item of tax preference for purposes of determining either individual or corporate alternative minimum tax. Interest on Variable Rate Series 2003 Bonds held by a corporation (other than an S corporation, regulated investment company, real estate investment trust or real estate mortgage investment conduit) may be indirectly subject to corporate alternative minimum tax because of its inclusion in the adjusted current earnings of such corporate holder. Interest on the Variable Rate Series 2003 Bonds held by a foreign corporation may be subject to the branch profits tax imposed by the Code.

8. Ownership of Variable Rate Series 2003 Bonds may result in collateral federal income tax consequences to certain taxpayers, including, without limitation, financial institutions, property and casualty insurance companies, certain S corporations with "excess net passive income," individual recipients of Social Security or Railroad Retirement benefits and taxpayers who may be deemed to have incurred or continued indebtedness to purchase or carry the Variable Rate Series 2003 Bonds. We offer no opinion as to such collateral tax consequences.

9. Under the laws of the Commonwealth of Pennsylvania as presently enacted and construed, the Variable Rate Series 2003 Bonds are exempt from personal property taxes in Pennsylvania, and interest on the Variable Rate Series 2003 Bonds is exempt from Pennsylvania personal income tax and corporate net income tax.

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 Variable Rate Series 2003 Bonds or as to any other matter not set forth herein.

Very truly yours,

KLEINBARD, BELL & BRECKER LLP

By: _____
Mary Beth H. Gray, a Partner

APPENDIX VI

SPECIMEN MUNICIPAL BOND INSURANCE POLICY

[THIS PAGE INTENTIONALLY LEFT BLANK]



**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

DESCRIPTION OF LIQUIDITY FACILITY PROVIDER

[THIS PAGE INTENTIONALLY LEFT BLANK]

Dexia

Dexia Credit Local (“Dexia”) is a subsidiary of the Dexia Group, which was created in 1996. The Dexia Group is a major European banking organization that is the product of several cross-border mergers. Dexia is an authentically European bank in terms of both its management organization and the scope of its different lines of business. The Dexia Group is listed on the Brussels, Paris and Luxembourg stock exchanges. With a stock market capitalization of more than 17 billion euros as of March 14, 2001, the Dexia Group ranks in the top third of the Euronext 100 companies.

Dexia specializes in the Dexia Group’s first line of business – public and project finance and financial services for the public sector. Worldwide, Dexia federates group entities involved in this business and spearheads their development. Dexia has recognized expertise in local sector financing and project finance. It is backed by a network of specialized banks, which employ 2,500 professionals.

Through this network of subsidiaries, affiliates and branches, Dexia is present in almost all of the countries of the European Union. It is progressively expanding its activities to Asia Pacific, South America and the Caribbean, and countries around the Mediterranean. Dexia, known as Dexia Public Finance Bank until March 8, 2001, is a bank with its principal office located in Paris, France. In issuing the Liquidity Facility for the Bonds, Dexia will act through its New York Agency, which is licensed by the Banking Department of the State of New York as an unincorporated agency of Dexia Credit Local, Paris. Dexia is the leading local authority lender in Europe, funding its lending activities in 2001 primarily through the issuance of euro and U.S. dollar-denominated bonds. In 2001, total funding raised by Dexia and Dexia Municipal Agency was 12.4 billion euros.

The acquisition by the Dexia Group of Financial Security Assurance Holdings Ltd. (“FSA Holdings”), the holding company for FSA was completed on July 5, 2000. As of December 31, 2001, Dexia had total consolidated assets of 155.5 billion euros, outstanding medium and long term loans to customers of 129 billion euros and shareholders’ equity of nearly 3.3 billion euros (Tier I plus Tier II), and for the year then ended had consolidated net income of 644 million euros. These figures were determined in accordance with generally accepted accounting principles in France. Dexia maintains its records and prepares its financial statements in euros. At December 31, 2001, the exchange rate was 1.0000 euro equals 0.8813 United States dollar. Such exchange rate fluctuates from time to time. Dexia is rated Aa2 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.

Dexia will provide without charge a copy of its most recent publicly available annual report. Written requests should be directed to: Dexia Credit Local, New York Agency, 445 Park Avenue, 8th 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.

[THIS PAGE INTENTIONALLY LEFT BLANK]

APPENDIX VIII

FORM OF CONTINUING DISCLOSURE AGREEMENT

[THIS PAGE INTENTIONALLY LEFT BLANK]

CONTINUING DISCLOSURE AGREEMENT

THE CITY OF PHILADELPHIA, PENNSYLVANIA \$381,275,000 WATER AND WASTEWATER REVENUE REFUNDING BONDS, VARIABLE RATE SERIES 2003

This Continuing Disclosure Agreement (this “Disclosure Agreement”) is executed and delivered as of this first day of April, 2003 by and between The City of Philadelphia, a corporation and body politic existing under the laws of the Commonwealth of Pennsylvania (the “City”) and Wachovia Bank, National Association, a national banking association having a corporate trust office in Philadelphia, Pennsylvania, as dissemination agent (the “Dissemination Agent”), in connection with the issuance by the City of \$381,275,000 of its aggregate principal amount of Water and Wastewater Revenue Refunding Bonds, Variable Rate Series 2003 (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 “First Supplemental Ordinance”), 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, 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 Appendix I of the Official Statement. Annual Financial Information may be provided in any format deemed convenient by the City.

“Business Day” or “Business Days” shall mean 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” shall mean 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” shall mean Wachovia Bank, National Association, as Fiscal Agent under the Fiscal Agent Agreement.

“Fiscal Agent Agreement” shall mean the Fiscal Agent Agreement dated as of June 3, 1991 between the City and First Union National Bank (now Wachovia Bank, National Association) (successor to the original Fiscal Agent), as fiscal agent, as amended.

“Material Event” shall mean any of the events listed in Section 4(a) of this Disclosure Agreement, if material within the meaning of the Rule.

“MSRB” shall mean the Municipal Securities Rulemaking Board.

“NRMSIR” or “NRMSIRs” shall mean each nationally recognized municipal securities information repository designated by the Securities and Exchange Commission in accordance with the Rule.

“Obligated Person” means (i) the City, for and on behalf of the Water Department, and (ii) any other entity for which annual financial information is required under the Rule and as to which the Underwriter has notified the City that such entity is an Obligated Person within the meaning of the Rule.

“Official Statement” means the City’s Official Statement dated March 20, 2003 relating to the Bonds.

“Participating Underwriters” shall mean 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” shall mean the person or persons in whose name a Bond is registered on the books of the City maintained by the Dissemination 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” also shall 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. Owners of book-entry credits may file their names and addresses with the Dissemination Agent for the purpose of receiving notices or giving direction under this Disclosure Agreement.

“Rule” shall mean 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” shall mean 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” shall mean 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.

“Underwriter” shall mean Salomon Smith Barney Inc.

“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 Ninth Supplemental Ordinance in order to enable the Participating Underwriters to comply with the requirements of the Rule.

Section 3. Provision of Annual Financial Information.

The City hereby agrees, in accordance with the provisions of the Rule, to provide through the Dissemination Agent to each NRMSIR and to the State Information Depository, if any, within 240 days of the end of each fiscal year of the City, the following annual financial information and operating data:

(a) commencing with the fiscal year ended June 30, 2003, 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

(b) commencing with the fiscal year ended June 30, 2003, to the extent such information is not contained in the CAFR, an update of the information in the Official Statement

contained in “APPENDIX I - FINANCIAL STATEMENTS OF THE WATER FUND FOR FISCAL YEARS ENDED JUNE 30, 2002 AND 2001.”

The City shall provide the foregoing financial information and operating data to the Dissemination Agent together with instructions to file such information and data with each NRMSIR and the State Information Depository, if any, whereupon the Dissemination Agent shall promptly make such filings.

The City acknowledges that it, and not the Dissemination Agent, is solely responsible for the accuracy, completeness and timeliness of its Annual Financial Information.

The City agrees to use reasonable and diligent efforts to cause any Obligated Person (to the extent such entity is not otherwise required under federal law to do so) to make annual financial information available as contemplated by this Section 3. The City takes no responsibility for the accuracy or completeness of such filings by any Obligated Person other than the City.

The City reserves the right to modify from time to time the specific types of information provided and the format of the presentation of such information, to the extent necessary or appropriate in the judgment of the City; provided that the City agrees that any such modification will be done in a manner consistent with the Rule. The City may, at its option, satisfy this obligation by providing an official statement for one or more series of Water and Wastewater Revenue Bonds issued under the Restated General Ordinance or by specific reference, in accordance with the Rule, to one or more official statements provided previously and available from the MSRB.

Section 4. Material Events.

(a) The City agrees that it shall provide through the Dissemination Agent, in a timely manner, to each NRMSIR and 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 (11) events are quoted from the Rule.

The City may use the Material Event Notice Cover Sheet attached hereto to provide any material event notices required to be given to the Dissemination Agent.

(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 the MSRB and the State Information Depository, if any. Upon receipt, the Dissemination Agent shall promptly file such notice with the MSRB and the State Information Depository, if any.

(c) Notwithstanding the foregoing, the Dissemination Agent shall, promptly after obtaining actual knowledge of an event listed in clauses (a)(1) or (a)(9) of this Section 4, notify the Disclosure Representative of the occurrence of such event and shall, within five (5) 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.

(d) The City agrees that it shall provide through the Dissemination Agent, in the manner provided in subsection (b) of this Section 4, in a timely manner, to the MSRB and to the State Information Depository, if any, notice of any failure by the City to provide any information required pursuant to Section 3 or Section 4 hereof on or before the dates specified therein.

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 NRMSIR, 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 Fiscal Agent Agreement.

(c) Nothing in this Disclosure Agreement is intended to modify or limit the right of Wachovia Bank, National Association, in its capacity as Fiscal Agent, to provide notices and other information to Registered Owners and such other parties as it deems necessary or appropriate in the performance of its duties as Fiscal Agent under the Fiscal Agent Agreement.

Section 7. Default.

(a) In the event that the City or the Dissemination Agent fails to comply with any provisions of this Disclosure Agreement, 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 or the Fiscal Agent Agreement 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. To the extent that the duties of Wachovia Bank, National Association, as Dissemination Agent under this Disclosure Agreement, conflict with its duties as Fiscal Agent under the Fiscal Agent Agreement, the duties of Wachovia Bank, National Association, as Fiscal Agent, shall take precedence. 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, 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. The provisions of this Section 8(b) shall survive termination of this Disclosure Agreement.

(c) The Dissemination Agent shall be protected and shall incur no liability for acting on any resolution, notice, telegram, request, consent, waiver, certificate, statement, affidavit, or other paper, document or transmission 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.

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:

- (a) To the Dissemination Agent at:

Wachovia Bank, National Association
123 South Broad Street
Philadelphia, PA 19109-1199
Attention: Corporate Trust Department
Telecopier No.: (215) 985-7290

- (b) To the City or the Disclosure Representative at:

The City of Philadelphia
Office of the Director of Finance
1330 Municipal Services Building
Philadelphia, PA 19102
Attention: Director of Finance
Telecopier No.: (215) 568-1947

- (c) To the Water Department at:
- The City of Philadelphia Water Department
ARAMARK Tower
1101 Market Street, 5th Floor
Philadelphia, PA 19102
Attention: Deputy Director of Finance
Telecopier No.: (215) 685-6106
- (d) To the Office of the City Treasurer at:
- The City of Philadelphia
Office of the City Treasurer
640 Municipal Services Building
Philadelphia, PA 19102
Attention: Treasurer
Telecopier No.: (215) 686-2303
- (e) To the MSRB at:
- CDINet
1900 Duke Street, Suite 600
Alexandria, VA 22314
Telecopier No.: (703) 683-1930

or such other addresses as may be designated in writing to all parties hereto.

Section 12. Addresses of NRMSIRs.

Any information to be provided to the NRMSIRs pursuant to this Disclosure Agreement shall be sent via United States mail, first class postage prepaid, or a recognized form of overnight mail to each of the NRMSIRs. The names and addresses of the NRMSIRs designated as such as of the date hereof are as follows:

- (a) Bloomberg Municipal Repository
100 Business Park Drive
Skillman, NJ 08558
Telephone: (609) 279-3225
- (b) DPC Data Inc.
One Executive Drive
Fort Lee, NJ 07024
Telephone: (201) 346-0701
- (c) Standard & Poor's J.J. Kenny Repository
55 Water Street, 45th Floor
New York, NY 10041
Telephone: (212) 438-4595

- (d) FT Interactive Data
Attention: NRMSIR
100 William Street
New York, NY 10038
Telephone: (212) 771-6999

Section 13. 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 14. Controlling Law.

The laws of the Commonwealth of Pennsylvania shall govern the construction and interpretation of this Disclosure Agreement.

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. Resignation and Replacement.

The provisions of Article VII of the Fiscal Agent Agreement between the City and First Union National Bank (now Wachovia Bank, National Association), as Fiscal Agent, dated June 3, 1991, as amended, shall govern the resignation and replacement of the Dissemination Agent.

Section 17. 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 18. 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 19. 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 has caused this Disclosure Agreement to be executed by the Director of Finance and its corporate seal to be hereunto affixed and Wachovia Bank, National Association, as Dissemination Agent, has caused this Disclosure Agreement to be executed by one of its duly authorized officers and its seal to be hereunto affixed and attested by one of its duly authorized officers, all as of the day and year first above written.

The City of Philadelphia

[SEAL]

By: _____
Director of Finance

Wachovia Bank, National Association,
as Dissemination Agent

[SEAL]

By: _____

Attest:

Material Event Notice 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(b)(5)(i)(C) and (D).

Issuer's and/or Other Obligated Person's Name: _____

Issuer's Six-Digit CUSIP Number(s): _____

or Nine-Digit CUSIP Number(s) to which this material event notice relates: _____

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):

I hereby represent that I am authorized by the issuer or its agent to distribute this information publicly:

Signature: _____

Name: _____ Title: _____

Employer: _____

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.

APPENDIX IX

RATE AND TENDER SUMMARY TABLE

[THIS PAGE INTENTIONALLY LEFT BLANK]

	DAILY INTEREST RATE PERIOD	WEEKLY INTEREST RATE PERIOD	SHORT-TERM INTEREST RATE PERIOD	LONG-TERM INTEREST RATE PERIOD
INTEREST PAYMENT DATE	Fifth Business Day of each calendar month	On each June 15 and December 15, commencing on June 15, 2003	Day after the last day of each Bond Interest Term	Each June 15 and December 15; if not a Business Day, the next Business Day
RECORD DATE	Last Business Day of each calendar month	Business Day immediately preceding the Interest Payment Date	Business Day immediately preceding the Interest Payment Date	Fifteenth day of the calendar month immediately preceding the Interest Payment Date
DATE OF INTEREST RATE DETERMINATION	Each Business Day; if not a Business Day, the rate from the preceding Business Day	Tuesday of each week by 5:00 p.m. or, if not a Business Day, the next Business Day	First day of each Bond Interest Term by 9:00 a.m.	On a Business Day no later than the effective date of the Long-Term Interest Rate Period
COMMENCEMENT OF RATE PERIOD	Each Business Day	On each Wednesday	On the Interest Payment Date following the last day of each Bond Interest Term	On the first Business Day of any period of at least 181 days following the last day of the preceding Interest Rate Period
OPTIONAL OR MANDATORY PURCHASE DATE	Any Business Day	Any Business Day	Each Interest Payment Date	Day immediately following Long-Term Interest Rate Period
NOTICE PERIOD FOR OPTIONAL PURCHASE	On any Business Day upon irrevocable written or telephonic notice by 11:00 a.m. on the Purchase Date	On any Business Day upon irrevocable written notice by 4:00 p.m. any Business Day not less than seven days prior to the Purchase Date	Not applicable	Not applicable
TENDER DATE FOR TENDERED BONDS	Not later than 12:00 noon on the Purchase Date	Not later than 12:00 noon on the Purchase Date	Not later than 12:00 noon on the Purchase Date	Not later than 12:00 noon on the Purchase Date
PAYMENT DATE FOR TENDERED BONDS	Purchase Date; if tendered after 12:00 noon, the day following the date tendered	Purchase Date; if tendered after 12:00 noon, the day following the date tendered	Purchase Date; if tendered after 12:00 noon, the day following the day tendered	Purchase Date; if tendered after 12:00 noon, the day following the day tendered

* The information in this Rate Period Table is provided for the convenience of the Bondholders and is not meant to be comprehensive. Additional information regarding the Bonds is contained in the Official Statement under the caption "THE BONDS" and in APPENDIX III – "SUMMARIES."

Note: All time references given above refer to New York City time.

[THIS PAGE INTENTIONALLY LEFT BLANK]

Philadelphia



Water Department