

## NEW ISSUE

In the opinion of Orrick, Herrington & Sutcliffe LLP, Bond Counsel, based upon an analysis of existing laws, regulations, rulings and court decisions, and assuming, among other matters, the accuracy of certain representations and compliance with certain covenants, interest on the Fiscal 2005 A Bonds is excluded from gross income for federal income tax purposes under Section 103 of the Internal Revenue Code of 1986. In the further opinion of Bond Counsel, interest on the Fiscal 2005 A Bonds is not a specific preference item for purposes of the federal individual or corporate alternative minimum taxes, although Bond Counsel observes that such interest is included in adjusted current earnings when calculating corporate alternative minimum taxable income. Bond Counsel is also of the opinion that interest on the Fiscal 2005 A Bonds is exempt from personal income taxes imposed by the State of New York and any political subdivision thereof (including The City of New York). Bond Counsel expresses no opinion regarding any other tax consequences related to the ownership or disposition of, or the accrual or receipt of interest on, the Fiscal 2005 A Bonds. See "TAX MATTERS."

# **\$150,000,000**

## **New York City**

### **Municipal Water Finance Authority**

#### **Water and Sewer System Revenue Bonds, Fiscal 2005 Series A**

**Dated: Date of Delivery**

**Due: June 15, as shown below**

The Fiscal 2005 A Bonds will be issued as registered bonds and will be registered in the name of Cede & Co., as nominee of The Depository Trust Company, New York, New York which will act as securities depository for the Fiscal 2005 A Bonds. Purchases of beneficial interests in such Fiscal 2005 A Bonds will be made in book-entry-only form. Purchasers will not receive certificates representing the ownership interest in the Fiscal 2005 A Bonds purchased by them. See "APPENDIX F—BOOK-ENTRY-ONLY FORM."

Interest on the Fiscal 2005 A Bonds will accrue from their date of delivery and will be payable semiannually on each June 15th and December 15th commencing December 15, 2004. The Fiscal 2005 A Bonds will be issued in authorized denominations of \$5,000 and integral multiples thereof. The Fiscal 2005 A Bonds are subject to redemption prior to maturity as described herein. The proceeds of the Fiscal 2005 A Bonds are expected to be applied (i) to pay principal and interest on a portion of the Authority's Outstanding commercial paper notes, (ii) to pay certain costs of issuance, and (iii) to fund certain reserves.

**The Fiscal 2005 A Bonds are special obligations of the Authority, payable solely from and secured by a pledge of and first lien on the gross revenues of the System. The Authority has no taxing power. The Fiscal 2005 A Bonds are not a debt of the State of New York, The City of New York or the New York City Water Board and none of the State of New York, The City of New York or the New York City Water Board is liable on the Fiscal 2005 A Bonds.**

The Fiscal 2005 A Bonds are offered when, as and if issued by the Authority and received by the Underwriters, and subject to the approval of legality by Orrick, Herrington & Sutcliffe LLP, New York, New York, Bond Counsel. Certain legal matters will be passed upon for the Underwriters by Nixon Peabody LLP, New York, New York. It is anticipated that the Fiscal 2005 A Bonds will be available for delivery to The Depository Trust Company in New York, New York, on or about August 5, 2004.

**\$150,000,000 5.00% Fiscal 2005 A Term Bonds due June 15, 2039 Yield 5.07%**

**Siebert Brandford Shank & Co., LLC**

**First Albany Capital Inc.**

**Goldman, Sachs & Co.**

**Merrill Lynch & Co.**

**UBS Financial Services Inc.**

**Bear, Stearns & Co. Inc.**  
**JPMorgan**

**Citigroup Global Markets Inc.**

**Lehman Brothers**  
**Morgan Stanley**

**Banc of America Securities LLC**  
**RBC Dain Rauscher Inc.**  
**Raymond James & Associates, Inc.**

**M.R. Beal & Company**  
**A.G. Edwards & Sons, Inc.**  
**Roosevelt & Cross Incorporated**

**CIBC World Markets**  
**First American Municipals, Inc.**  
**Wachovia Bank, National Association**

[THIS PAGE INTENTIONALLY LEFT BLANK.]

**New York City Municipal Water Finance Authority**  
**75 Park Place, 6th Floor**  
**New York, New York 10007**  
**212-788-5889**

Mark Page, <i>ex officio</i>	<i>Member</i>
Erin M. Crotty, <i>ex officio</i>	<i>Member</i>
Martha E. Stark, <i>ex officio</i>	<i>Member</i>
Christopher O. Ward, <i>ex officio</i>	<i>Member</i>
Charles E. Dorkey III	<i>Member</i>
Arthur B. Hill	<i>Member</i>
Judy Wesalo Temel	<i>Member</i>
Alan L. Anders	<i>Executive Director</i>
Thomas G. Paolicelli	<i>Treasurer</i>
Marjorie E. Henning	<i>Secretary</i>
Lawrence R. Glantz	<i>Comptroller</i>
Philip Wasserman	<i>Deputy Treasurer</i>
Prescott D. Ulrey	<i>Assistant Secretary</i>
Jeffrey M. Werner	<i>Assistant Secretary</i>
Raymond Orlando	<i>Manager of Investor Relations</i>

**New York City Water Board**  
**59-17 Junction Boulevard, 8th Floor**  
**Flushing, New York 11373-5108**  
**718-595-3586**

James T.B. Tripp	<i>Chairman</i>
Lilyan H. Affinito	<i>Member</i>
Dawn S. Davis	<i>Member</i>
Amaziah Howell	<i>Member</i>
Stacey Coleman Morse	<i>Member</i>
Maria Santos Valentin	<i>Member</i>
David B. Tweedy	<i>Executive Director</i>
William Kusterbeck	<i>Treasurer</i>
Carmelo Emilio	<i>Deputy Treasurer</i>
Albert F. Moncure, Jr.	<i>Secretary</i>

**Authority Consultants**

Bond Counsel	<i>Orrick, Herrington &amp; Sutcliffe LLP</i>
Consulting Engineer	<i>Metcalf &amp; Eddy of New York, Inc.</i>
Financial Advisors	<i>Lamont Financial Services Corporation/Ramirez &amp; Co., Inc.</i>
Rate Consultant	<i>Black &amp; Veatch New York LLP</i>

This Official Statement does not constitute an offer to sell or the solicitation of an offer to buy any of the Fiscal 2005 A Bonds in any jurisdiction to any person to whom it is unlawful to make such offer in such jurisdiction. No dealer, salesperson or any other person has been authorized to give any information or make any representation, other than those contained herein, in connection with the offering of any of the Fiscal 2005 A Bonds and if given or made, such information or representation must not be relied upon. Information contained on the Authority's web page, or on any other web page, on the City's web site is not a part of this Official Statement. Neither the delivery of this Official Statement nor the sale of any of the Fiscal 2005 A Bonds implies that there has been no change in the affairs of the Authority, the Board or the City or the other matters described herein since the date hereof.

If and when included in this Official Statement, the words "expects," "forecasts," "projects," "intends," "anticipates," "estimates" and analogous expressions are intended to identify forward-looking statements as defined in the Securities Act of 1933, as amended, and any such statements inherently are subject to a variety of risks and uncertainties that could cause actual results to differ materially from those projected. Such risks and uncertainties include, among others, general economic and business conditions, changes in political, social and economic conditions, regulatory initiatives and compliance with governmental regulations, litigation and various other events, conditions and circumstances, many of which are beyond the control of the Authority. These forward-looking statements speak only as of the date of this Official Statement. The Authority disclaims any obligation or undertaking to release publicly any updates or revisions to any forward-looking statement contained herein to reflect any change in the Authority's expectations with regard thereto or any change in events, conditions or circumstances on which any such statements are based.

IN CONNECTION WITH THIS OFFERING, THE UNDERWRITERS MAY OVERALLOT OR EFFECT TRANSACTIONS WHICH STABILIZE OR MAINTAIN THE MARKET PRICE OF THE FISCAL 2005 A BONDS AT A LEVEL ABOVE THAT WHICH MIGHT OTHERWISE PREVAIL IN THE OPEN MARKET, SUCH STABILIZING, IF COMMENCED, MAY BE DISCONTINUED AT ANY TIME.

## TABLE OF CONTENTS

	<u>Page</u>		<u>Page</u>
SUMMARY STATEMENT . . . . .	v	The Water System . . . . .	36
INTRODUCTORY STATEMENT . . . . .	1	History . . . . .	36
General . . . . .	1	Water Collection and Distribution . . . . .	37
Financial Projection Assumptions . . . . .	2	Drought Response Measures . . . . .	41
PLAN OF FINANCING . . . . .	3	Governmental Regulation . . . . .	42
USE OF PROCEEDS . . . . .	3	The Sewer System . . . . .	47
THE FISCAL 2005 A BONDS . . . . .	3	History . . . . .	47
General . . . . .	3	Sewage Collection and Treatment . . . . .	47
Book-Entry Only . . . . .	3	Governmental Regulation . . . . .	49
Redemption of Fiscal 2005 A Bonds . . . . .	3	ECONOMIC AND DEMOGRAPHIC INFORMATION . . . . .	52
SECURITY FOR THE BONDS . . . . .	4	New York City Economy . . . . .	52
Revenues . . . . .	4	Personal Income . . . . .	53
Debt Service Reserve Fund . . . . .	7	Employment Trends . . . . .	53
Rate Covenant . . . . .	7	Sectoral Distribution of Employment and Earnings . . . . .	55
Additional Bonds . . . . .	8	Population . . . . .	56
Authority Debt . . . . .	8	Housing . . . . .	57
Other Authority Indebtedness . . . . .	9	LITIGATION . . . . .	57
Derivatives . . . . .	9	APPROVAL OF LEGAL PROCEEDINGS . . . . .	58
Covenant of the State . . . . .	9	FINANCIAL ADVISORS . . . . .	58
THE AUTHORITY . . . . .	10	FURTHER INFORMATION . . . . .	58
Purpose and Powers . . . . .	10	CONTINUING DISCLOSURE UNDER SEC RULE	
Membership . . . . .	10	15c2-12 . . . . .	59
THE BOARD . . . . .	12	INVESTMENTS . . . . .	60
Purpose and Powers . . . . .	12	RATINGS . . . . .	60
Membership . . . . .	12	UNDERWRITING . . . . .	61
THE DEPARTMENT OF ENVIRONMENTAL		LEGALITY FOR INVESTMENT AND DEPOSIT . . . . .	61
PROTECTION . . . . .	14	FINANCIAL STATEMENTS AND INDEPENDENT	
Organization . . . . .	14	AUDITORS . . . . .	61
Labor Relations . . . . .	15	ENGINEERING FEASIBILITY REPORT AND	
CAPITAL IMPROVEMENT AND FINANCING		FORECASTED CASH FLOWS . . . . .	61
PROGRAM . . . . .	16	TAX MATTERS . . . . .	62
Capital Improvement Program . . . . .	16	CERTAIN LEGAL OPINIONS . . . . .	64
Historical Capital Program . . . . .	20	APPENDICES	
Financing Program . . . . .	21	Appendix A — LETTER OF METCALF & EDDY OF	
Sources and Uses of Funds . . . . .	22	NEW YORK, INC., CONSULTING	
Debt Service Requirements . . . . .	25	ENGINEERS . . . . .	A-1
FINANCIAL OPERATIONS . . . . .	26	Appendix B — LETTER OF BLACK & VEATCH NEW	
Revenues . . . . .	26	YORK LLP, RATE CONSULTANTS . . . . .	B-1
Expenses . . . . .	27	Appendix C — GLOSSARY AND SUMMARY OF	
Projected Revenues . . . . .	28	CERTAIN DOCUMENTS . . . . .	C-1
Projected Operating and Maintenance Expenses . . . . .	29	Summary of the Agreement . . . . .	C-9
Projected Financial Operations . . . . .	31	Summary of the Lease . . . . .	C-15
RATES AND BILLINGS . . . . .	32	Summary of the Resolution . . . . .	C-17
Rates . . . . .	32	Appendix D — FINANCIAL STATEMENTS . . . . .	D-1
Accounts, Billing and Collection . . . . .	34	Appendix E — FORM OF OPINION OF BOND	
THE SYSTEM . . . . .	36	COUNSEL . . . . .	E-1
Overview . . . . .	36	Appendix F — BOOK-ENTRY-ONLY FORM . . . . .	F-1
		Appendix G — SYSTEM MAPS . . . . .	G-1

[THIS PAGE INTENTIONALLY LEFT BLANK]

## SUMMARY STATEMENT

*The following is a brief summary of the information contained in this Official Statement and is subject in all respects to the additional information contained herein, including the appendices attached hereto. Defined terms have the same meaning herein as elsewhere in this Official Statement.*

**Authority Contact:**

Mr. Raymond Orlando  
Manager of Investor Relations  
Phone: (212) 788-5875  
Fax: (212) 788-9197  
E-mail: orlandor@omb.nyc.gov

**Use of Proceeds:**

The proceeds of the Fiscal 2005 A Bonds are expected to be applied (i) to pay principal and interest on a portion of the Authority's Outstanding commercial paper notes, (ii) to pay certain costs of issuance, and (iii) to fund certain reserves.

**Description of the Bonds:**

The Fiscal 2005 A Bonds are being issued by the Authority in the principal amount of \$150,000,000, pursuant to its Water and Sewer System General Revenue Bond Resolution adopted on November 14, 1985, as amended, and its Sixty-ninth Supplemental Resolution adopted on July 21, 2004. The Fiscal 2005 A Bonds are issued in book-entry only form and in authorized denominations of \$5,000 and integral multiples thereof.

**Redemption Provisions:**

The Fiscal 2005 A Bonds are subject to optional redemption as described herein.

**The System:**

The Water System provides approximately 1,250 million gallons per day (mgd) of water to approximately 824,000 accounts. It supplies water to approximately 9,000,000 people, of which approximately 8,000,000 are in the City and the balance are in Westchester, Putnam, Orange and Ulster Counties. The Sewer System is comprised of an extensive network of sewage collection and treatment facilities that treat over 1,200 mgd of dry-weather sewage. Under the Act, the Lease and the Agreement, the Board is obligated to pay the operating expenses of the System. The City is obligated to operate and maintain the System regardless of payment by the Board.

Summary Financial Information:

	Historical			Projected(1)		
	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
Revenues Available for Debt Service(2) . . . . .	\$1,527.0	\$1,592.4	\$1,653.7	\$1,756.6	\$1,791.1	\$1,930.5
Other Revenues(2) . . . . .	—	31.0	99.1	—	—	—
Net Operating Expenses(2) . . . . .	672.5	708.3	782.4	977.6	911.7	843.9
Other Expenses (including Rental Payments to the City)(2) . . . . .	198.3	172.2	263.3	114.8	175.0	193.0
Total Expenses(2) . . . . .	870.8	880.5	1,045.7	1,092.4	1,086.7	1,036.9
Total First Resolution Bond Debt Service . . . . .	487.2	496.4	496.7	490.3	494.9	567.6
Net Debt Service on Second Resolution Bonds(3) . . . . .	9.0	—	—	—	87.7	187.9
Net Surplus . . . . .	160.0	246.0	210.4	174.0	121.8	138.1
First Resolution Debt Service Coverage . . . . .	3.13x	3.20x	3.33x	3.58x	3.62x	3.40x
First and Second Resolution Debt Service Coverage(3) . . . . .	3.08x	3.20x	3.33x	3.58x	3.07x	2.56x
Rate Increase . . . . .	1.0%	3.0%	6.5%	5.5%(4)	5.5%(4)	5.0%

Totals may not add due to rounding.

- (1) Projections are as of June 2004.
- (2) Historical figures are derived from the accounting records utilized in preparation of the statements of cash flows contained in the annual financial statements.
- (3) Includes interest on Commercial Paper Notes and reflects offset of carryforward revenues and Debt Service Fund earnings.
- (4) Actual rate increase for Fiscal Year 2004 and 2005.

**Total Authority Debt Outstanding:** The Authority has approximately \$9.0 billion of Bonds (defined below) and \$3.5 billion of Second Resolution Bonds (defined below) Outstanding. See “CAPITAL IMPROVEMENT AND FINANCING PROGRAM—Debt Service Requirements.” In addition, the Authority currently has an \$800 million commercial paper program.

**Capital Program:** The City’s Ten Year Capital Strategy published in April 2003 (the “Ten Year Capital Strategy”), which is updated every two years, includes the projected capital improvements to the System for Fiscal Years 2004 through 2013. The City’s Current Capital Plan (the “Current Capital Plan”) is updated quarterly and supercedes the Ten Year Capital Strategy for Fiscal Years 2004 through 2008. The Ten Year Capital Strategy as modified by the Current Capital Plan comprises the Capital Improvement Program (the “CIP”). The CIP includes projected capital commitments of \$17.2 billion for water and sewer facilities of which approximately 98% is expected to be provided from System funds. The CIP is designed to maintain a satisfactory level of service, to improve operation of the System and to address future System requirements.



Bond Financing Program:

The following table shows total Authority indebtedness expected to be issued for capital purposes, excluding refunding bonds, from Fiscal Year 2005 to Fiscal Year 2009 as of June 2004. Actual bond issuance in Fiscal Year 2004 was \$1,766.6 million.

<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Period Total</u>
(Millions of Dollars)					
\$1,490.1	\$1,858.7	\$1,722.1	\$1,673.9	\$1,771.4	\$8,516.2

Security for the Bonds:

Revenue Pledge:

The Bonds are special obligations of the Authority, payable solely from and secured by a pledge of the gross revenues of the System prior to the payment of operation and maintenance costs or any other expenses.

Debt Service Reserve Fund:

Upon the delivery of the Fiscal 2005 A Bonds, the Debt Service Reserve Fund will be funded in an amount at least equal to the maximum annual Adjusted Aggregate Debt Service on the Bonds.

Rate Covenant:

The Board has covenanted to establish and collect rates, fees and charges sufficient in each Fiscal Year so that Revenues collected in such Fiscal Year will be at least equal to the sum of 115% of Aggregate Debt Service on all Bonds Outstanding and on any Projected Series of Bonds (excluding Refundable Principal Installments for the payment of which funds are held in trust) payable in such Fiscal Year, and 100% of the Operating Expenses and Required Deposits (which includes debt service on the Second Resolution Bonds and other subordinate debt) to the extent required to be paid from Revenues for such Fiscal Year.

Additional Bonds Test:

Additional Bonds may be issued only if the estimated Revenues for the Fiscal Year in which such Bonds are issued and each of the following five Fiscal Years will be at least equal to the sum of 115% of the maximum estimated Adjusted Aggregate Debt Service on all Bonds, including the Bonds to be issued, and 100% of the sum of the projected Operating Expenses and Required Deposits (including Debt Service Reserve Fund replenishment and subordinate debt service) for such Fiscal Years and only if the Revenues for either of the last two Fiscal Years preceding the Fiscal Year in which the Bonds are to be issued were at least equal to the sum of (i) 115% of the Aggregate Debt Service for such Fiscal Year (excluding any Principal Installments, or portion thereof, paid from sources other than the Revenues) and (ii) 100% of the sum of Operating Expenses and Required Deposits for such Fiscal Year. Refunding Bonds may be issued under the Resolution either upon satisfaction of such

conditions or other conditions. Second Resolution Bonds may be issued under the Second Resolution only if the Revenues for either of the last two Fiscal Years preceding the Fiscal Year in which the Bonds are to be issued were at least equal to the sum of (i) 110% of the Aggregate Debt Service for such Fiscal Year on the First Resolution Bonds, the Second Resolution Bonds and certain other Subordinated Indebtedness (excluding any Debt Service paid from sources other than the Revenues) and (ii) 100% of the sum of Operating Expenses and Required Deposits for such Fiscal Year. Refunding Second Resolution Bonds may be issued under the Second Resolution either upon satisfaction of such conditions or other conditions.

Summary of Certain Legal Opinions: Bond Counsel has rendered opinions to the effect that, in the event of a bankruptcy of the City, (i) a court, exercising reasonable judgment after full consideration of all relevant factors, would not hold that the Revenues are property of the City and would not order the substantive consolidation of the assets and liabilities of either the Board or the Authority with those of the City and (ii) the Board, in the event the City should reject the Lease, would be entitled to remain in possession of the System for the balance of the Lease term. Bond Counsel has also opined that under current law neither the Board nor the Authority qualifies as a debtor under the United States Bankruptcy Code.

Rates: Rates, fees and charges are imposed by the Board and are not subject to regulatory approval except for those rates charged to a limited class of upstate users representing approximately 1% of Revenues.

The Authority: The Authority, a separate legal entity established in 1984, has the power to (i) issue bonds, bond anticipation notes and other obligations for the purpose of financing the renovation and improvement of the System, (ii) refund its bonds and notes and general obligation bonds of the City issued for water or sewer purposes, (iii) require the Board to fix rates sufficient to pay the costs of operating and financing improvements to the System and (iv) require the City to maintain the System adequately. The Authority has no taxing power.

The Board: The Board, a separate legal entity established in 1984, has leased the System from the City. It is authorized to fix and collect rates, fees and charges adequate to pay the cost of operating and financing the System.

The Agreement: Pursuant to the Agreement, the Authority has agreed to finance capital projects for the System, both current work and work commenced in prior years, through the issuance of bonds, notes or other indebtedness secured by revenues of the System.

The Lease:

Pursuant to the Lease, the Board has acquired the System from the City for a term continuing until provision has been made for the repayment of all Outstanding Bonds or other indebtedness of the Authority.

Financial Statements and Independent Auditors:

The financial statements (for the years ended June 30, 2002 and June 30, 2003) of the New York City Water and Sewer System included in Appendix D to this Official Statement have been audited by KPMG LLP, independent certified public accountants, to the extent and for the periods indicated in their report thereon.

[THIS PAGE INTENTIONALLY LEFT BLANK.]

## OFFICIAL STATEMENT

\$150,000,000

### NEW YORK CITY MUNICIPAL WATER FINANCE AUTHORITY WATER AND SEWER SYSTEM REVENUE BONDS, FISCAL 2005 SERIES A

#### INTRODUCTORY STATEMENT

##### General

The purpose of this Official Statement is to set forth certain information pertaining to the New York City Municipal Water Finance Authority (the “Authority”), a public benefit corporation duly created and existing under the New York City Municipal Water Finance Authority Act, as amended (the “Act”); the New York City Water Board (the “Board”), a public benefit corporation created and existing under Chapter 515 of the Laws of 1984, both of which laws were enacted by the Legislature of the State of New York (the “State”); and the Authority’s \$150,000,000 Water and Sewer System Revenue Bonds, Fiscal 2005 Series A (the “Fiscal 2005 A Bonds”). Capitalized terms used in this Official Statement and not defined herein shall have the meanings ascribed thereto in APPENDIX C—GLOSSARY AND SUMMARY OF CERTAIN DOCUMENTS—Glossary.”

Pursuant to a lease agreement (the “Lease”) between the Board and The City of New York (the “City”), dated as of July 1, 1985, as amended, the Board has leased from the City its facilities for the collection, transmission and distribution of water (the “Water System”) and its facilities for the collection, treatment and disposal of sewage (the “Sewer System”) (collectively, the “System”). As required by the Act and the Lease, the System is operated and maintained by the Department of Environmental Protection of the City (“DEP”). The Board has also entered into a financing agreement, dated as of July 1, 1985, as amended (the “Agreement”), with the Authority and the City for the financing of capital improvements to the System through the issuance of bonds, notes and other obligations under the Authority’s Water and Sewer System General Revenue Bond Resolution adopted on November 14, 1985, as amended (the “Resolution” or the “First Resolution” and, when issued thereunder, the “Bonds”), or subordinate obligations of the Authority under its Second Resolution (defined below). Pursuant to the Lease and the Agreement, the Board has agreed to levy and collect rates, fees and charges. Pursuant to the Lease, the City may, with the prior written consent of the Board, grant interests in the Leased Property which, in the reasonable judgment of the Board, do not interfere with the operation and maintenance of the System and the collection of the Revenues from the System.

The Fiscal 2005 A Bonds will be issued by the Authority pursuant to the Resolution and its Sixty-ninth Supplemental Resolution adopted on July 21, 2004 (the “Sixty-ninth Supplemental Resolution”). The Resolution and the Sixty-ninth Supplemental Resolution are collectively referred to herein as the “Resolutions”. The Bank of New York serves as trustee under the Resolutions (in such capacity, the “Trustee”) and will continue to serve as Trustee unless a successor is appointed in accordance with the Resolutions. The Authority has issued subordinate revenue bonds (the “Second Resolution Bonds”) pursuant to its Water and Sewer Second General Revenue Bond Resolution adopted on March 30, 1994, as amended (the “Second Resolution”).

The Bonds are special obligations of the Authority, payable solely from and secured by a pledge of the Revenues, all moneys or securities in any of the funds and accounts established under the Resolution, including the Debt Service Reserve Fund, and all other moneys and securities to be received, held or set aside pursuant to the Resolution, subject only to provisions of the Resolution and the Agreement relating to the use and application thereof. The Board has covenanted in the Agreement to maintain rates, fees and charges at sufficient levels to produce in each twelve-month period beginning on July 1 (a “Fiscal Year”) an amount equal to 115% of the Aggregate Debt Service and Projected Debt Service on the Bonds (excluding Refundable Principal Installments for the payment of which funds are held in trust) to become due in such Fiscal Year on Bonds, plus 100% of the operation and maintenance expenses of the System certified by the City and of Required Deposits (which includes the debt service on the Second Resolution Bonds and other subordinate debt) to the extent required to be paid from Revenues. The Agreement requires a report of the Rate Consultant setting forth its recommendations as to any revisions of the rates,

fees and charges necessary or advisable to meet the requirements of the rate covenant. The Board is obligated to take necessary action to cure or avoid any deficiency. See “SECURITY FOR THE BONDS—Rate Covenant.” The Agreement also requires a Consulting Engineer to review the operation and maintenance of the System, and further requires the City to operate and maintain the System in accordance with the advice and recommendations of the Consulting Engineer. See “SECURITY FOR THE BONDS.”

Rates, fees and charges are imposed by the Board and are not subject to regulatory approval under current law except for the rates charged to a limited class of upstate users, representing approximately 1% of Revenues. See “RATES AND BILLINGS.”

The Authority has relied upon Metcalf & Eddy of New York, Inc. (“Metcalf & Eddy”), its Consulting Engineer, for certain engineering feasibility information and upon Black & Veatch New York LLP (“Black & Veatch”), its Rate Consultant, for certain financial estimates and projections. See “ENGINEERING FEASIBILITY REPORT AND FORECASTED CASH FLOWS.”

### **Financial Projection Assumptions**

The estimates and projections contained in this Official Statement are based on, among other factors, evaluations of historical revenue and expenditure data and analyses of economic trends affecting the Authority’s finances. The financial projections contained herein are subject to certain contingencies that cannot be quantified and are subject to the uncertainties inherent in any attempt to predict the results of future operations. Accordingly, such projections are subject to periodic revision which may involve substantial change. Consequently, the Authority makes no representation or warranty that these estimates and projections will be realized.

The financial projections contained in this Official Statement, including projected operating and maintenance expenses, debt service, revenues, sources and uses of funds, and the forecasted cash flows and rate increases, were prepared in June 2004 and are expected to be updated annually. Based on results to date and other factors, actual financial results for Fiscal Year 2004 and subsequent years will differ from these projections.

## PLAN OF FINANCING

A portion of the Fiscal 2005 A Bonds is expected to be used for payment of the principal of and interest on \$139,500,000 aggregate principal amount of the Authority's Commercial Paper Notes, Series One, maturing on or before October 28, 2004.

Shortly after the issuance of the Fiscal 2005 A Bonds, the Authority expects to issue and privately place with the New York State Environmental Facilities Corporation ("EFC" or the "Corporation") approximately \$230,000,000 Second Resolution Bonds, Fiscal 2005 Series 1. The proceeds of such Second Resolution Bonds will be applied (i) to pay principal and interest on a portion of the Authority's Outstanding Commercial Paper Notes (defined below) and (ii) to pay certain costs of issuance.

## USE OF PROCEEDS

It is anticipated that the proceeds of the Fiscal 2005 A Bonds will be applied in the following manner:

Deposit to Escrow Fund for Payment of Commercial Paper Notes .....	\$139,679,748
Deposit to Debt Service Reserve Fund .....	7,500,000
Original Issue Discount.....	1,719,000
Underwriters' Discount.....	911,252
Costs of Issuance .....	<u>190,000</u>
Total Uses of Proceeds of the Fiscal 2005 A Bonds .....	<u>\$150,000,000</u>

## THE FISCAL 2005 A BONDS

### General

The Fiscal 2005 A Bonds initially delivered to the Underwriters will be dated their date of delivery. The Fiscal 2005 A Bonds will mature on and will bear interest payable on the dates and at the rates shown on the inside cover of this Official Statement.

Principal of, redemption premium, if any, and interest on the Fiscal 2005 A Bonds will be payable in lawful money of the United States of America. The Fiscal 2005 A Bonds will be issued only as fully registered bonds without coupons in denominations of \$5,000 and integral multiples thereof.

### Book-Entry Only

The Fiscal 2005 A Bonds will be issued as registered bonds and will be registered in the name of Cede & Co., as nominee of The Depository Trust Company ("DTC"), which will act as securities depository for the Fiscal 2005 A Bonds. Purchases of beneficial interests in such Fiscal 2005 A Bonds will be made in book-entry-only form. Purchasers will not receive certificates representing the ownership interest in the Fiscal 2005 A Bonds purchased by them. See "APPENDIX F—BOOK-ENTRY-ONLY FORM."

### Redemption of Fiscal 2005 A Bonds

#### *Optional Redemption*

The Fiscal 2005 A Bonds are subject to redemption prior to maturity at the option of the Authority from any moneys available therefor on and after June 15, 2014 in whole or in part, at any time, by lot at the redemption price of par plus accrued interest to the redemption date.

#### *Notice of Redemption.*

Notice of redemption is to be given by first class mail, postage prepaid, at least 30 days prior to the date fixed for redemption, to the registered owners of Fiscal 2005 A Bonds to be redeemed at their addresses shown on the books of registry. So long as Cede & Co., as nominee of DTC, is the registered

owner of the Fiscal 2005 A Bonds, notice of redemption is to be sent to DTC. No assurance can be given by the Authority that DTC and DTC participants will promptly transmit notices of redemption to Beneficial Owners. See “APPENDIX F—BOOK-ENTRY-ONLY FORM.”

If, on any redemption date, moneys for the redemption of the Fiscal 2005 A Bonds to be redeemed, together with interest thereon to the redemption date, are held by the Trustee so as to be available therefor on such date, and if notice of redemption has been mailed, then interest on the Fiscal 2005 A Bonds to be redeemed will cease to accrue from and after the redemption date and such Fiscal 2005 A Bonds will no longer be considered to be Outstanding under the Resolution.

The notice of redemption may provide that the Fiscal 2005 A Bonds will be due and payable on the redemption date only if moneys sufficient to accomplish such redemption are held by the Trustee on the scheduled redemption date.

## **SECURITY FOR THE BONDS**

### **Revenues**

The Act empowers the Board to establish and collect rates, fees and charges for the use of service provided by the System in order to receive Revenues, which together with other available amounts, will be sufficient to place the System on a self-sustaining basis. All Revenues of the System are deposited by the Board in the Local Water Fund held by the Board. The Authority holds a statutory first lien on the Revenues for the payment of all amounts due to the Authority under the Agreement. In the event that the Board fails to make any required payment to the Authority, the Authority or the Trustee may petition for the appointment, by any court having jurisdiction, of a receiver to administer the affairs of the Board, and, with court approval, establish rates and charges to provide Revenues sufficient to make required payments. However, no holder or owner of any bond or note issued by the Authority, or any receiver of the System, may compel the sale of any part of the System.

The City has covenanted in the Agreement to operate and maintain the System in accordance with the advice and recommendations of the Consulting Engineer. Such obligation to operate and maintain the System may be enforced by the Authority in accordance with the provisions of the Act and the terms of the Agreement and the Lease and is not contingent on payment by the Board. The amounts required to operate and maintain the System are certified to the Board by the City and reviewed by the Consulting Engineer.

Beginning on the first day of each month the Board is required to pay to the Trustee under the Resolution the Revenues in the Local Water Fund, for deposit in the Revenue Fund established under the Resolution until the amount so deposited equals the Minimum Monthly Balance and the Required Deposits for such month. The Minimum Monthly Balance is the amount required to accumulate the funds necessary for timely payment of all debt service on Outstanding Bonds. Required Deposits are the amounts required to be paid from Revenues for deposit to the Authority Expense Fund, the Debt Service Reserve Fund and the Subordinated Indebtedness Fund, including amounts required for payment of the Second Resolution Bonds and other subordinate debt. See “APPENDIX C—GLOSSARY AND SUMMARY OF CERTAIN DOCUMENTS—Summary of the Agreement—Minimum Monthly Balance.”

Amounts on deposit in the Revenue Fund are required to be paid to the following funds established under the Resolution in the following order of priority: first, to the Debt Service Fund; second, to the Authority Expense Fund; third, to the Debt Service Reserve Fund to replenish any deficiency therein; and fourth, to the Subordinated Indebtedness Fund. If amounts on deposit in such Debt Service Fund or such Debt Service Reserve Fund are less than the requirements thereof, amounts on deposit in the Subordinated Indebtedness Fund are required to be used to make up such deficiency. See “APPENDIX C—GLOSSARY AND SUMMARY OF CERTAIN DOCUMENTS—Summary of the Resolution—Payments into Certain Funds.”

In each month, after making required payments to the Revenue Fund the Board is required, after paying monthly Board Expenses, to pay the City  $\frac{1}{12}$  of the Operating Expenses for the current Fiscal Year from the balance remaining in the Local Water Fund. After making such payments, any amounts remaining in the Local Water Fund in each month are paid proportionately (a) to the Trustee for deposit

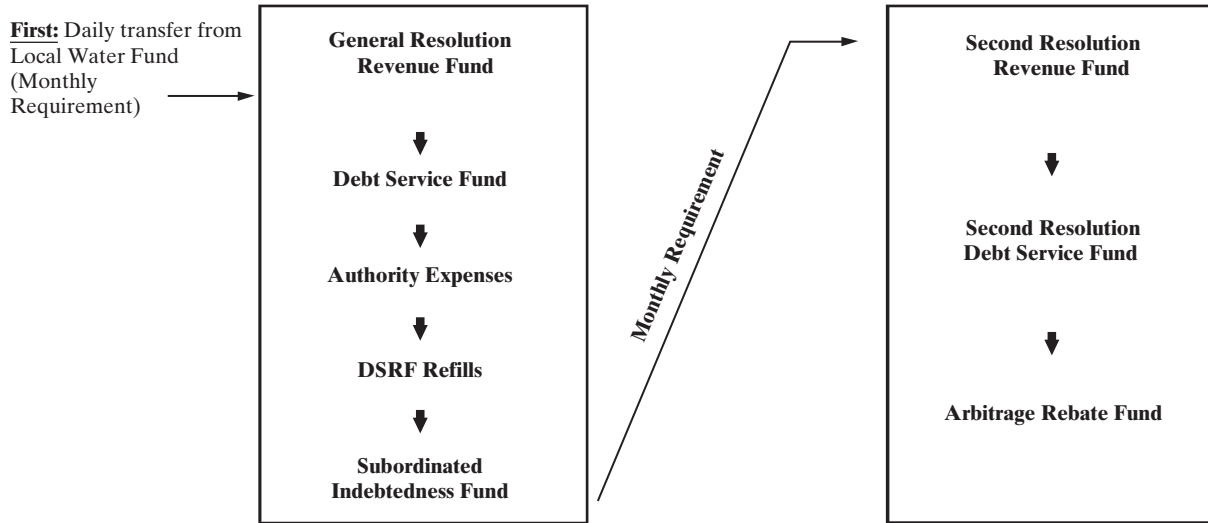


in the Revenue Fund until the total of all amounts deposited in the Revenue Fund equals the Cash Flow Requirement for such Fiscal Year and (b) to the City until all amounts required to be paid to the City for Operating Expenses for such Fiscal Year have been paid. For a more complete description of the required payments from the Local Water Fund, see “APPENDIX C—GLOSSARY AND SUMMARY OF CERTAIN DOCUMENTS—Summary of the Resolution” and “Summary of the Agreement.”

The Fiscal 2005 A Bonds will be on a parity with the currently Outstanding Bonds and with Bonds hereafter issued and are payable from and secured by a pledge of (i) all Revenues, (ii) all moneys or securities in any of the Funds and Accounts established under the Resolutions, except that moneys or securities on deposit in a Special Account are pledged only to the Series of Bonds to which such Account relates and moneys and securities on deposit in the Common Account are pledged only to the Bonds for which a Special Account has not been established pursuant to the Resolution, and (iii) all other moneys and securities to be received, held or set aside pursuant to the Resolution, subject only to the provisions of the Resolution and the Agreement permitting the application thereof for the purposes and on the terms and conditions set forth therein, including the making of any required payments to the United States with respect to arbitrage earnings. No such Special Account has been established by the Authority. See “APPENDIX C—GLOSSARY AND SUMMARY OF CERTAIN DOCUMENTS—Summary of the Resolution” and “—Summary of the Agreement.”

Pursuant to the Agreement, the Resolution and the Second Resolution, the Revenues received by the Board will be applied in the manner set forth in the following chart. The information contained in such chart is qualified by reference to the Agreement, the Resolution and the Second Resolution.

# Consolidated Flow of Funds



**Second:** Daily transfer from Local Water Fund (Monthly Requirement) → • Water Board Expenses

**Third:** Daily transfer from Local Water Fund (Monthly Requirement) → • System Operating and Maintenance

**Fourth:** Daily transfer from Local Water Fund (Up to Annual Requirement) → Pro rata to:

- General Resolution Revenue Fund: for annual Debt Service, Authority expenses, DSRF, Subordinate Indebtedness (Second Resolution)
- Systems Operations and Maintenance

**Fifth - Seventh:** Daily transfer from Local Water Fund (After Debt Service is set aside; typically funded during the last few months of the fiscal year) → • City lease payment, operating and maintenance reserve replenishment, surplus including pay as you go capital

## **Debt Service Reserve Fund**

The Resolution establishes a Debt Service Reserve Fund and requires as a condition to the issuance of each Series of Bonds that there be deposited into the Debt Service Reserve Fund the amount, if any, necessary to make the amount on deposit therein equal to the Debt Service Reserve Requirement, after giving effect to the issuance of such Bonds. The Debt Service Reserve Requirement is an amount equal to maximum annual Adjusted Aggregate Debt Service in the then current or any future Fiscal Year on all Bonds Outstanding. Adjusted Aggregate Debt Service includes an assumed amortization of Refundable Principal Installments under certain circumstances. Amounts on deposit in the Debt Service Reserve Fund will be applied, to the extent Revenues are not available, to pay Principal Installments and interest on the Bonds. In lieu of making cash deposits to the Debt Service Reserve Fund, the Authority may satisfy the Debt Service Reserve Requirement by depositing Financial Guaranties into the Debt Service Reserve Fund. See “APPENDIX C—GLOSSARY AND SUMMARY OF CERTAIN DOCUMENTS—Summary of the Resolution—Debt Service Reserve Fund.”

On June 30, 2004 the market value of the securities and cash in the Debt Service Reserve Fund was in excess of the Debt Service Reserve Fund Requirement which was approximately \$664.4 million as of such date. Upon the delivery of the Fiscal 2005 A Bonds, the Debt Service Reserve Fund will be funded in an amount at least equal to the maximum annual Adjusted Aggregate Debt Service on the Bonds.

## **Rate Covenant**

The Board has covenanted in the Agreement to establish, fix, revise and collect rates, fees and charges for the use of, or the services furnished by the System, adequate, together with other available funds, to provide for (i) the timely payment of Principal Installments of and interest on all Bonds, and the principal of and interest on any other indebtedness of the Authority (which includes Second Resolution Bonds and other subordinate debt) payable from Revenues, (ii) the proper operation and maintenance of the System, (iii) all other payments required for the System not otherwise provided for, and (iv) all other payments required pursuant to the Agreement and the Lease.

Without limiting the generality of the foregoing, the Board has covenanted to establish and collect rates, fees and charges sufficient in each Fiscal Year so that Revenues collected in such Fiscal Year will be at least equal to the sum of 115% of Aggregate Debt Service and Projected Debt Service on all Bonds (excluding Refundable Principal Installments that are payable from funds held in trust therefor) payable in such Fiscal Year, and 100% of the Operating Expenses and Required Deposits (including debt service on Second Resolution Bonds and other subordinate debt) required to be paid from Revenues for such Fiscal Year (the “Rate Covenant”). Amounts on deposit in the Revenue Fund on July 1 of a Fiscal Year will reduce the amount of Revenues required to be raised to meet the Required Deposits for such Fiscal Year. A failure to generate Revenues as set forth in this paragraph will not constitute an “event of default” under the Agreement if the Board takes timely action to correct any such deficiency as described in the following paragraph.

Under the Resolution and the Second Resolution, the Authority is required to submit to the Board by May 1 of each year the Authority Budget for the ensuing Fiscal Year showing the itemized estimated Cash Flow Requirement for such Fiscal Year. At the beginning of each month, the Authority is to recalculate the Cash Flow Requirement for the then current Fiscal Year and to submit any revisions to the Authority Budget required as a consequence to the Board. The Authority Budget and Cash Flow Requirement are to be used by the Board to set rates, fees and charges.

The Board has covenanted in the Agreement to review the adequacy of rates, fees and charges at least annually. If such annual review, or the report of the Rate Consultant required pursuant to the Agreement, indicates that the rates, fees and charges are or will be insufficient to meet the requirements of the Rate Covenant described above, the Board will promptly take the necessary action to cure or avoid any such deficiency. In addition, under the Agreement, the City, which is responsible for billing, collecting and enforcing collections of rates and charges established by the Board, has agreed that it will diligently pursue all actions necessary to cure or avoid any such deficiency.

The Board has covenanted in the Agreement that it will not furnish or supply or cause to be furnished or supplied any product, use or service of the System free of charge or at a nominal charge, and will enforce (or cause the City to enforce) the payment of any and all amounts owing to the Board for use of the System, except to the extent required by the Act, as in effect on July 24, 1984.

## **Additional Bonds**

The Authority may issue additional Bonds to pay for capital improvements to the System, to pay or provide for the payment of Bonds, Second Resolution Bonds and bond anticipation notes, including commercial paper notes, to refund general obligation bonds of the City issued for water or sewer purposes and to fund certain reserves. Under the Resolution, additional Bonds may be issued only upon satisfaction of certain requirements, including receipt by the Trustee of:

(a) a certificate by an Authorized Representative of the Authority to the effect that the Revenues for either of the last two Fiscal Years immediately preceding the Fiscal Year in which such Bonds are to be issued were at least equal to the sum of 115% of the Aggregate Debt Service during such Fiscal Year (excluding from Aggregate Debt Service any Principal Installments, or portion thereof, paid from a source other than Revenues), and 100% of the sum of the Operating Expenses of the System certified by the City and the Required Deposits for such Fiscal Year, and

(b) a certificate of the Rate Consultant to the effect that the estimated Revenues for each of the following five Fiscal Years (plus the Fiscal Year in which such Bonds are issued) after giving effect to any increases or decreases in rates, fees and charges projected for such Fiscal Years will be at least equal to the sum of 115% of the maximum estimated Adjusted Aggregate Debt Service on all Bonds then Outstanding including the Bonds to be issued, and 100% of the sum of the projected Operating Expenses and Required Deposits for such Fiscal Years. Adjusted Aggregate Debt Service includes an assumed amortization of Refundable Principal Installments under certain circumstances. See “—Refundable Principal Installments.”

The Authority may issue additional Bonds for the purpose of refunding Outstanding Bonds without satisfaction of the requirements described above only if:

(a) the average annual debt service on the refunding Bonds does not exceed the average annual debt service on the Bonds to be refunded, and

(b) the maximum debt service in any Fiscal Year on the refunding Bonds does not exceed the maximum debt service in any Fiscal Year on the Bonds to be refunded.

See “APPENDIX C—GLOSSARY AND SUMMARY OF CERTAIN DOCUMENTS—Summary of the Resolution.”

## **Authority Debt**

At the date of this Official Statement, the Authority has approximately \$9.0 billion aggregate principal amount of Outstanding Bonds (Capital Appreciation Bonds are included at their accreted value as of July 1, 2004). In addition, at the date of this Official Statement, the Authority has approximately \$3.5 billion aggregate principal amount of outstanding Second Resolution Bonds. The Authority is authorized to have outstanding up to \$800 million of commercial paper notes (the “Commercial Paper Notes”).

For purposes of the Board’s rate covenant, Refundable Principal Installments may be excluded from Debt Service to the extent they are payable from funds held in trust therefor. See “—Rate Covenant.”

Second Resolution Bonds are payable from, among other sources, and secured by, a pledge of amounts on deposit in the Subordinated Indebtedness Fund, subject to the first lien on such amounts in favor of the Bonds. Amounts on deposit in the Subordinated Indebtedness Fund will be available, to the extent not utilized for Bonds, to pay debt service on Second Resolution Bonds.

The Commercial Paper Notes are special obligations of the Authority the proceeds of which are used to pay the costs of capital improvements to the System. The Series One Commercial Paper Notes, the Series Five Commercial Paper Notes, and the Series Six Commercial Paper Notes are each secured by standby line of credit agreements which provide liquidity for such Commercial Paper Notes. In March 2003, the Authority authorized its Extendable Municipal Commercial Paper Notes, Series Seven (the “Series Seven Notes”). Principal of and interest on the Series Seven Notes are not secured by any liquidity or credit facility and are payable from remarketing proceeds and the proceeds of additional Series Seven Notes, Bonds or Second Resolution Bonds. Interest on the Commercial Paper Notes is secured by the

Revenues of the System and the moneys and investments from time to time on deposit in the Subordinated Indebtedness Fund and the funds and accounts established under the resolutions authorizing their issuance. The pledge of the Revenues and the moneys and investments from time to time on deposit in the Subordinated Indebtedness Fund is subject and subordinate to the pledge thereof made by the Resolution for the benefit of the holders of Bonds. The pledge of the moneys and investments on deposit in the Subordinated Indebtedness Fund securing Commercial Paper Notes is of equal priority with the pledge securing Second Resolution Bonds.

The Authority's obligations to the banks providing standby lines of credit, including the Authority's obligation to pay interest on moneys advanced, are secured by a pledge of the moneys and investments on deposit in the Subordinated Indebtedness Fund on a parity with the pledge to secure the Second Resolution Bonds. Interest on such advances is also secured by a pledge of Revenues which is subordinate to the pledge securing the Bonds.

### **Other Authority Indebtedness**

The Authority has issued \$665,370,000 of its Crossover Refunding Bonds in six separate series (the "Crossover Bonds"). Each series of Crossover Bonds was issued pursuant to a separate Crossover Refunding Bond Resolution of the Authority. Each series of Crossover Bonds is secured by the proceeds of such series of bonds and any investment income thereon, until such bonds' respective Tender Dates. Guaranteed investment contracts are expected to provide sufficient amounts to pay debt service on the Crossover Bonds until their respective Tender Dates. The Crossover Bonds have a subordinate lien on the Subordinated Indebtedness Fund under the Second Resolution but have no lien on Revenues. If certain conditions are met on the relevant Tender Date, the Crossover Bonds of the respective series will be exchanged for Bonds to be issued pursuant to the Resolution and the proceeds of the respective series of Crossover Bonds will be applied to redeem other Outstanding Bonds of specified series. The Authority exchanged \$41,745,000 of its Crossover Refunding Bonds, 2002 D Issue, for Bonds on June 15, 2004.

### **Derivatives**

In an effort to reduce its borrowing costs over the life of its bonds, the Authority has entered into interest rate exchange agreements.

On June 18, 2002, the Authority entered into an interest rate exchange agreement in connection with \$20,000,000 of its Fiscal 2003 Series A Bonds. Under this contract, which covers the period from July 9, 2002 through June 15, 2013, the Authority receives from Morgan Stanley Capital Services a floating rate tied to the Consumer Price Index, which matches the interest rate on such bonds, on the notional amount of \$20,000,000 and pays a fixed interest rate on such notional amount.

On December 17, 2003, the Authority entered into an interest rate exchange agreement with BNP Paribas. This agreement, which took effect on December 23, 2003 and covers the period through June 15, 2014, requires the Authority to pay the weighted weekly average of the Bond Market Association Municipal Swap Index on a notional amount of \$200,000,000. In return, BNP Paribas pays the Authority a fixed rate of 3.567% per annum on the notional amount.

### **Covenant of the State**

Section 1045-t of the Act constitutes a pledge of the State to the holders of Bonds not to limit or alter the rights vested in the Authority or the Board by the Act to fulfill the terms of any agreement made with or for the benefit of the holders of the Bonds until such obligations together with the interest thereon are fully met and discharged.

## THE AUTHORITY

### Purpose and Powers

The New York City Municipal Water Finance Authority is a public benefit corporation created pursuant to the Act. Among its powers under the Act, the Authority may borrow money, issue debt and enter into the Agreement, and refund its bonds and notes and general obligation bonds of the City issued for water or sewer purposes. Additionally, the Authority has the power to require that the Board charge and collect sufficient rates to pay the costs of operating and financing the System and to enforce the obligation of the City to adequately operate and maintain the System, regardless of reimbursement by the Board of costs incurred by the City for operation and maintenance.

Pursuant to the Act, there is a statutory first lien on the Revenues in favor of the payment of all amounts due to the Authority under the Agreement. The Revenues remain subject to this lien until provision for payment of all indebtedness issued by the Authority has been made. See “Certain Legal Opinions” for a description of the opinion rendered by Bond Counsel that in the event of a City bankruptcy, a court, exercising reasonable judgment after full consideration of all relevant factors, would not hold that the Revenues are property of the City.

### Membership

The Act authorizes a seven-member board to administer the Authority. Four of the members of the Board of Directors are designated in the Act as *ex officio* members: the Commissioner of Environmental Protection of the City, the Director of Management and Budget of the City, the Commissioner of Finance of the City and the Commissioner of Environmental Conservation of the State. Of the three remaining public members, two are appointed by the Mayor and one is appointed by the Governor. The public members have terms of two years. Pursuant to the Act, all members continue to hold office until their successors are appointed and qualified.

The current members of the Board of Directors are:

<u>Member</u>	<u>Occupation</u>
Mark Page(1).....	Director of Management and Budget of the City
Erin M. Crotty(1).....	Commissioner of Environmental Conservation of the State
Martha E. Stark(1).....	Commissioner of Finance of the City
Christopher O. Ward(1).....	Commissioner of Environmental Protection of the City
Charles E. Dorkey III(2).....	Partner, Torys
Arthur B. Hill(3).....	Retired, United Parcel Service
Judy Wesalo Temel(2).....	Principal, JWT Consulting

(1) *Ex officio*.

(2) Appointed by the Mayor.

(3) Appointed by the Governor.

The following is a brief description of certain officers and staff members of the Authority:

Alan L. Anders, Executive Director

Mr. Anders was appointed Executive Director in June 2002 after serving as Treasurer from October 1990. Mr. Anders also serves as Deputy Director for Finance of the Office of Management and Budget of the City. Prior to joining the Authority and the City in September 1990, Mr. Anders had been a senior investment banker for J. P. Morgan Securities since 1977. Prior to that date, he was Executive Director of the Commission on Governmental Efficiency and Economy in Baltimore, Maryland. Mr. Anders is a graduate of the University of Pennsylvania and the University of Maryland Law School.

Thomas G. Paolicelli, Treasurer

Mr. Paolicelli was appointed Treasurer in June 2002 after having served as Deputy Treasurer from November 2000. He is a graduate of the State University of New York at Buffalo and the University at Albany's Rockefeller College of Public Affairs and Policy.

Marjorie E. Henning, Secretary

Ms. Henning was appointed Secretary in November 1993. Ms. Henning also serves as General Counsel to the Office of Management and Budget of the City. Ms. Henning is a graduate of the State University of New York at Buffalo and the Harvard Law School.

Lawrence R. Glantz, Comptroller

Mr. Glantz was appointed Comptroller in January 2000. He is a graduate of Hofstra University.

Philip Wasserman, Deputy Treasurer

Mr. Wasserman was appointed Deputy Treasurer in June 2002. He joined the Authority in June of 2000 as a financial analyst and was appointed Assistant Treasurer in November 2000. He is a graduate of Cornell University, Columbia University, and the University of Texas at Austin.

Prescott D. Ulrey, Assistant Secretary

Mr. Ulrey was appointed Assistant Secretary in February 1998. Mr. Ulrey also serves as Counsel to the Office of Management and Budget of the City. He is a graduate of the University of California at Berkeley, the Fletcher School of Law and Diplomacy of Tufts University and Columbia Law School.

Jeffrey M. Werner, Assistant Secretary

Mr. Werner was appointed Assistant Secretary in March 2004. Mr. Werner also serves as Deputy Counsel to the Office of Management and Budget of the City. He is a graduate of Bowdoin College and Columbia Law School.

Raymond Orlando, Manager of Investor Relations

Mr. Orlando was appointed Manager of Investor Relations in June 2000. He is a graduate of the University of Pennsylvania and the John F. Kennedy School of Government at Harvard University.

## THE BOARD

### Purpose and Powers

The Board is a public benefit corporation of the State created by Chapter 515 of the Laws of 1984. The primary responsibility of the Board is to fix, revise, charge, collect and enforce rates and other charges for the System.

The Board is required under the Act to establish rates that will provide adequate funds to pay the debt service on outstanding Authority indebtedness and the City's cost of operating and maintaining the System. In each Fiscal Year, any amounts remaining in the Local Water Fund, after making the required payments under the Agreement, shall be deposited in the General Account in the Operation and Maintenance Reserve Fund and shall be available either as a source of funding for System expenditures or upon certification of the City for deposit to the Authority's Construction Fund to pay for the costs of System capital projects. See "APPENDIX C—GLOSSARY AND SUMMARY OF CERTAIN DOCUMENTS—Summary of the Agreement—Application of Moneys in the Operation and Maintenance Reserve Fund."

Pursuant to the Lease, the Board has a leasehold interest in the System for a term continuing until all Bonds or other obligations issued by the Authority are paid in full or provision for payment has been made. Under the Lease, the City is required to provide billing, collection, enforcement and legal services to the Board. The Board is required to compensate the City for the cost of these services.

### Membership

The Board consists of seven members who are appointed by the Mayor for terms of two years. There is currently one vacancy on the Board. The Act provides that at least one member will have experience in the science of water resource development and that no member of the Board will be a member of the Authority. The Chairman is appointed by the Mayor. Pursuant to the Act, all members continue to hold office until their successors are appointed and qualified.

The current members of the Board are:

<u>Member</u>	<u>Occupation</u>
James T.B. Tripp, Chairman . . . .	General Counsel, Environmental Defense Fund
Lilyan H. Affinito . . . . .	Retired
Dawn S. Davis . . . . .	Bronx Pro Real Estate Management
Amaziah Howell . . . . .	President, Howell Petroleum Products, Inc.
Stacy Coleman Morse . . . . .	Retired
Maria Santos Valentin . . . . .	Senior Associate General Counsel, Open Society Institute

The following is a brief description of the staff members of the Board:

David B. Tweedy, Executive Director

Mr. Tweedy was appointed Executive Director of the Board in November 2002 and First Deputy Commissioner of DEP in September 2002. Prior to joining DEP, Mr. Tweedy served for twelve years in various management and executive positions at the New York City Transit Authority ("NYCT"), most recently as Senior Director in the Capital Program Management Department of NYCT, managing non-engineering functions such as Personnel, Systems and Administration and Budgeting. Prior to the NYCT, Mr. Tweedy served as a Vice President at Bankers Trust Company in the Global Operating Services unit. He also worked in financial functions at International Paper Co. Mr. Tweedy is a graduate of Yale University and received an M.B.A. in Finance from Columbia University.

William Kusterbeck, Treasurer

Mr. Kusterbeck has served as Treasurer since his appointment in November 1985. For the period from August through November 2002 he also served as Acting Executive Director. Mr. Kusterbeck has worked for DEP since 1979. He has served in various positions in DEP including Director of



Rates and Revenue, and Director of the Office of Planning. Mr. Kusterbeck is a graduate of Hunter College of the City University of New York and Columbia University Graduate School of Business.

Carmelo Emilio, Deputy Treasurer

Mr. Emilio was appointed Deputy Treasurer in June 2000. He has worked for the City since 1976, and has served as the Chief of Financial Operations at the Water Board from 1996. Prior to joining the Water Board, Mr. Emilio worked with the New York City Office of Management and Budget as a Revenue Analyst. Mr. Emilio is a graduate of Baruch College of the City University of New York.

Albert F. Moncure, Jr., Secretary

Mr. Moncure was named Acting Secretary in February 1997 and Secretary in April 1997. Mr. Moncure also serves as Chief of the Municipal Finance Division of the New York City Law Department. Mr. Moncure has worked for the Law Department since 1986. Mr. Moncure is a graduate of Dartmouth College and the Yale Law School.

## THE DEPARTMENT OF ENVIRONMENTAL PROTECTION

### Organization

Over 5,700 DEP staff members are assigned to the System. Approximately 800 people within the System staff are assigned to the design and construction of ongoing capital projects, including projects within the Capital Improvement Program, as hereinafter defined, and approximately 400 provide administrative and support services to both System and non-System staff. There are approximately 300 additional employees within the DEP staff whose duties are not related to water and sewer service and whose cost is not included as a System cost.

The New York City Department of Design and Construction (the “DDC”) has responsibility for the construction and reconstruction of water and sewer mains in the City. Based upon current workloads, a proportion of DDC’s staff equivalent to 350 full-time positions is devoted to System construction projects.

DEP is managed by a Commissioner, who is appointed by the Mayor. It is organized into seven bureaus: Customer Services; Water and Sewer Operations; Water Supply; Environmental Engineering; Wastewater Treatment; Management and Budget; and Executive Bureaus.

The following are brief descriptions of certain management personnel responsible for the operation of the System.

Christopher O. Ward, Commissioner

Mr. Ward was appointed Commissioner in April 2002. Prior to joining DEP, Mr. Ward served as the Chief of Planning and External Affairs for The Port Authority of New York and New Jersey (the “Port Authority”), where he also was the Director of the Port Redevelopment Program for the Port Commerce Department, a position he had held since 1997. Prior to joining the Port Authority, Mr. Ward held positions as the Director of Business Development for American Stevedoring, Inc., Senior Vice-President of Transportation and Commerce for the New York City Economic Development Corporation, Assistant Commissioner of Energy Policy and Programming at the New York City Department of Telecommunications and Energy, and General Manager of New York City Public Utility Service. Mr. Ward has also served as an Adjunct Professor at the School of International and Public Affairs of Columbia University. He is a graduate of Macalester College and received a Masters Degree from Harvard University.

David B. Tweedy, First Deputy Commissioner

Mr. Tweedy was appointed First Deputy Commissioner of DEP in September 2002 and Executive Director of the Board in November 2002. Prior to joining DEP, Mr. Tweedy served for twelve years in various management and executive positions at NYCT, most recently as Senior Director in the Capital Program Management Department of NYCT, managing non-engineering functions such as Personnel, Systems and Administration and Budgeting. Prior to the NYCT, Mr. Tweedy served as a Vice President at Bankers Trust Company in the Global Operating Services unit. He also worked in financial functions at International Paper Co. Mr. Tweedy is a graduate of Yale University and received an M.B.A. in Finance from Columbia University.

Denise M. Richardson, Deputy Commissioner

Denise M. Richardson was appointed Deputy Commissioner for Customer Services in January 2003. Ms. Richardson has held various positions in City government since 1983. Prior to joining Customer Services, Ms. Richardson served as Chief Procurement Officer for the capital construction program of NYCT. Ms. Richardson’s other government positions have included that of Assistant Commissioner/Agency Chief Contracting Officer at the Department of Information Technology and Telecommunications, Deputy Agency Chief Contracting Officer at DEP, Construction Contract Administrator for the Department of General Services (now the Department of Design and Construction), and Director of Administration and Budget Analyst, respectively, at the Department of Sanitation. She also previously worked as Business Manager for Honeywell, Inc. Ms. Richardson is a graduate of Simmons College and received a Master’s Degree in Public Administration/Urban and Regional Planning from Princeton University.

Douglas S. Greeley, P.E., Deputy Commissioner

Mr. Greeley was appointed Director of the Bureau of Water and Sewer Operations in 1996. He has been with DEP since 1973 and has served in numerous capacities, including Chief of System Operations, Chief of the Maintenance Division, and Chief of the Repairs Division of DEP's Bureau of Water Supply and Wastewater Collection. Mr. Greeley is a graduate of the Stevens Institute of Technology. He is a Professional Engineer.

Michael A. Principe, Ph.D., Deputy Commissioner

Dr. Principe was appointed Acting Deputy Commissioner of the Bureau of Water Supply ("BWS") in June 2000 and Deputy Commissioner in May 2001. He has been with DEP since 1981, serving in a variety of roles, most recently as the Deputy Director of BWS and Chief of the Division of Drinking Water Quality Control within BWS. Dr. Principe graduated from Cornell University with a B.S. in Natural Resources, received a M.S. in Environmental Science from SUNY College of Environmental Science and Forestry at Syracuse, New York, and a Ph.D. in Biology from CUNY Graduate School and University Center.

Warren Kurtz, P.E., Deputy Commissioner

Mr. Kurtz was appointed Deputy Commissioner of the Bureau of Environmental Engineering ("BEE") in November 2002. He has been with DEP since 1969, and has served as the Chief of the Program Management Division, Deputy Director of the Section 208 Area-wide Wastewater Treatment Management Planning Program, Assistant Chief Engineer and most recently as Deputy Director for Facilities Planning within the BEE. He also previously served in the City's Legislative Office of Budget Review and the Mayor's Office of Construction. Mr. Kurtz received a Bachelor's Degree in Civil Engineering and a Master's Degree in Engineering from City College of New York, an M.S. in Urban Affairs from Hunter College, and an M.B.A. from California State University, Northridge.

Alfonso R. Lopez, P.E., Deputy Commissioner

Mr. Lopez was appointed Acting Deputy Commissioner of the Bureau of Wastewater Treatment in January 2001 and Deputy Commissioner in May 2001. He has been with the DEP since 1973 and has served in numerous positions including Chief of Process Engineering, Chief of North Facilities Operations, Chief of Biosolids Engineering and Planning Division and most recently as Deputy Director of Facilities Operations. Mr. Lopez is a graduate of New York University with a degree in Civil Engineering and is a Professional Engineer.

Dana K. Reed, Deputy Commissioner

Mr. Reed was appointed Deputy Commissioner for Human Resources and Administration in June 2004. He has previously served more than 25 years in the private sector, working in executive level human resources positions at American Telephone & Telegraph, Lucent Technologies and Sara Lee Coffee & Tea. Mr. Reed has also provided consulting services on human resources and management issues. Mr. Reed is a graduate of Southern Illinois University with concentrations in government, psychology and sociology. Mr. Reed has also completed graduate work in the areas of international affairs and business management at the University of Pittsburgh and Pace University respectively.

## **Labor Relations**

During the last decade, there have been no strikes or major work stoppages of DEP employees affecting the System. Approximately 95% of DEP's employees are members of labor unions which represent such employees in collective bargaining with the City. The majority of DEP employees who are members of unions are members of District Council 37 of the American Federation of State, County and Municipal Employees ("DC 37"). A new agreement with DC 37, covering the period from July 1, 2002 through June 30, 2005, was reached on April 20, 2004 and ratified on June 1, 2004.

## CAPITAL IMPROVEMENT AND FINANCING PROGRAM

### Capital Improvement Program

The City's Ten Year Capital Strategy published in April 2003 (the "Ten Year Capital Strategy"), which is updated every two years, includes the projected capital improvements to the System for Fiscal Years 2004 through 2013. The City's Current Capital Plan (the "Current Capital Plan") is updated quarterly and supercedes the Ten Year Capital Strategy for Fiscal Years 2004 through 2008. The Ten Year Capital Strategy as modified by the Current Capital Plan comprises the Capital Improvement Program (the "CIP"). The CIP includes projected capital commitments of \$17.2 billion for water and sewer facilities. As of June 2004, the Current Capital Plan increased the total projected costs of projects included in the Ten Year Capital Strategy for Fiscal Years 2004 through 2008 from \$8.97 billion to \$9.72 billion.

The CIP establishes long range programmatic goals for the System and reflects a review of the present condition and long-term needs of the plant and equipment constituting the System. The CIP incorporates the requirements of legal mandates, the present replacement cycle for System facilities, extensions to the present service area, and programs to enhance and optimize the operation of the System. Allowances are included in the CIP for emergency repair and replacement. The value of the actual work done in any given year will differ from that outlined in the CIP. Capital commitments in the CIP for the years beyond the Current Capital Plan will change due to the addition of new projects, as well as due to changes in project schedules and costs. The capital program projected in the CIP substantially exceeds levels required in order to maintain the current condition of the System.

The CIP is presented in the following table.

**CAPITAL IMPROVEMENT PROGRAM**  
(Thousands of Dollars)

<b>CITY FUNDS</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>FY 2008</b>	<b>FY 2009</b>	<b>FY 2010</b>	<b>FY 2011</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>Total</b>
<b>WATER SUPPLY AND TRANSMISSION</b>											
Conveyance . . . . .	\$ —	\$ 40,000	\$ —	\$ —	\$ 50,000	\$ —	\$ 425,000	\$ —	\$ 550,000	\$ —	\$ 1,065,000
Kensico-City Tunnel . . . . .	15,000	—	—	—	—	500,000	150,000	500,000	—	500,000	1,665,000
City Tunnel No. 3, Stage 1 . . . . .	3,283	1,100	192,500	—	—	—	—	—	2,800	—	199,683
City Tunnel No. 3, Stage 2 . . . . .	69,986	646,700	5,000	—	—	—	150,000	—	15,000	—	886,686
Miscellaneous Programs . . . . .	838	2,000	—	—	—	—	—	—	—	—	2,838
Subtotal . . . . .	89,107	689,800	197,500	—	50,000	500,000	725,000	500,000	567,800	500,000	3,819,207
<b>WATER DISTRIBUTION</b>											
Brooklyn-Queens Aquifer . . . . .	—	11,762	8,200	—	—	—	—	—	—	—	19,962
Croton Filtration Project . . . . .	28,574	196,978	—	1,016,500	268,000	—	7,000	—	—	—	1,517,052
Dam Safety Program . . . . .	56,875	58,419	92,475	—	244,000	—	—	—	—	—	451,769
Trunk Distribution and Main Extension . . . . .	16,631	22,655	90,617	21,485	17,939	5,729	5,872	6,031	6,206	6,398	199,563
Trunk Distribution and Main Replacement . . . . .	143,375	77,760	80,950	53,383	41,304	110,271	110,128	109,969	111,534	113,256	951,930
Water Quality Preservation . . . . .	436,683	257,965	165,463	501,186	14,300	11,609	11,927	11,255	11,593	44,191	1,466,172
Other System Improvements . . . . .	8,708	4,140	9,100	4,000	4,000	—	—	—	—	—	29,948
Subtotal . . . . .	690,846	629,679	446,805	1,596,554	589,543	127,609	134,927	127,255	129,333	163,845	4,636,396
<b>WATER POLLUTION CONTROL</b>											
Consent Decree Upgrading & Construction . . . . .	752,933	255,653	290,721	92,000	33,000	260,000	48,457	10,000	31,000	70,000	1,843,764
Plant Upgrading & Reconstruction . . . . .	129,800	93,559	143,818	63,950	184,025	86,050	100,500	93,500	83,500	83,500	1,062,202
Sludge Disposal . . . . .	24,718	5,900	—	—	—	148,250	—	—	—	—	178,868
Plant Component Stabilization (1) . . . . .	231,634	99,840	462,268	—	212,500	345,000	325,000	330,000	345,000	365,000	2,716,242
Water Quality Mandates . . . . .	40,451	138,636	65,259	(11,650)	6,870	31,000	16,000	205,000	10,000	100,000	601,566
Subtotal . . . . .	1,179,536	593,588	962,066	144,300	436,395	870,300	489,957	638,500	469,500	618,500	6,402,642
<b>SEWERS</b>											
Replacement or Augmentation . . . . .	20,830	7,890	5,586	10,014	13,138	—	—	—	—	—	57,458
Extensions to Accommodate New Development . . . . .	110,675	45,387	72,895	22,559	61,144	83,802	70,800	89,801	69,219	92,560	718,842
Programmatic Response to Regulatory Mandates . . . . .	—	—	—	—	9,000	—	—	—	—	—	9,000
Programmatic Replacement and Reconstruction . . . . .	4,070	—	500	—	—	3,200	3,200	3,200	3,293	3,395	20,858
Replacement of Chronically Failing Components . . . . .	132,249	115,771	67,141	33,790	39,519	46,998	45,000	45,999	49,127	48,587	624,181
Trunks . . . . .	1,671	5,000	5,136	—	—	—	—	—	—	—	11,807
Subtotal . . . . .	269,495	174,048	151,258	66,363	122,801	134,000	119,000	139,000	121,639	144,542	1,442,146
<b>EQUIPMENT</b>											
Conservation . . . . .	23,298	24,650	30,861	4,612	4,611	4,223	4,223	4,223	4,345	4,480	109,526
Management Information Systems . . . . .	4,329	16,733	4,547	2,000	2,000	—	—	—	—	—	29,609
Facility Purchases & Reconstruction . . . . .	15,066	84,399	3,300	25,728	13,975	38,118	—	—	—	—	180,586
Utility Relocation . . . . .	27,789	20,156	20,480	20,375	20,375	20,375	20,375	20,405	20,435	20,510	211,275
Vehicles and Equipment . . . . .	10,842	6,568	6,000	5,999	6,000	4,000	4,000	4,000	4,000	4,000	55,409
Subtotal . . . . .	81,324	152,506	65,188	58,714	46,961	66,716	28,598	28,628	28,780	28,990	586,405
<b>TOTAL CITY FUNDS</b> . . . . .	<b>2,310,308</b>	<b>2,239,621</b>	<b>1,822,817</b>	<b>1,865,931</b>	<b>1,245,700</b>	<b>1,698,625</b>	<b>1,497,482</b>	<b>1,433,383</b>	<b>1,317,052</b>	<b>1,455,877</b>	<b>16,866,796</b>
<b>STATE, FEDERAL, AND PRIVATE FUNDS</b>											
Water Quality Preservation . . . . .	6,419	—	—	—	—	—	—	—	—	—	6,419
Consent Decree Upgrading & Construction . . . . .	32,862	—	—	—	—	—	—	—	—	—	32,862
Plant Upgrading & Reconstruction . . . . .	2,563	—	—	—	—	—	—	—	—	—	2,563
Plant Component Stabilization (1) . . . . .	62,958	—	—	—	—	—	—	—	—	—	62,958
Water Quality Mandates . . . . .	25,550	25,000	25,000	25,000	25,000	25,000	25,000	25,000	—	—	200,550
Other System Improvements . . . . .	1,413	569	—	—	—	—	—	—	—	—	1,982
<b>TOTAL NON-CITY FUNDS</b> . . . . .	<b>131,765</b>	<b>25,569</b>	<b>25,000</b>	<b>25,000</b>	<b>25,000</b>	<b>25,000</b>	<b>25,000</b>	<b>25,000</b>	<b>—</b>	<b>—</b>	<b>307,334</b>
<b>TOTAL FUNDS</b> . . . . .	<b>\$2,442,073</b>	<b>\$2,265,190</b>	<b>\$1,847,817</b>	<b>\$1,890,931</b>	<b>\$1,270,700</b>	<b>\$1,723,625</b>	<b>\$1,522,482</b>	<b>\$1,458,383</b>	<b>\$1,317,052</b>	<b>\$1,455,877</b>	<b>\$17,194,130</b>

(1) Plant Component Stabilization includes amounts for the biological nutrient removal program.

The difference between the Current Capital Plan and the Ten Year Capital Strategy for fiscal years 2004 through 2008 reflects increases in total funds of approximately \$749.9 million, which includes an increase of approximately \$107.3 million in State, federal and private funds and an increase of approximately \$642.5 million in System funds, including the proceeds of Authority bonds. The following table presents a comparison of the Ten Year Capital Strategy and Current Capital Plan.

**COMPARISON OF FY 2004-2008 PROJECTIONS  
(Thousands of Dollars)**

	<b>Ten Year Capital Strategy FY 2004-2008</b>	<b>Current Capital Plan FY 2004-2008</b>	<b>Increase (Decrease)</b>
<b>SYSTEM FUNDS</b>			
Water Supply and Transmission.....	\$1,145,671	\$1,026,407	\$(119,264)
Water Distribution.....	3,512,783	3,953,427	440,644
Water Pollution Control.....	3,238,951	3,315,885	76,934
Sewers.....	651,914	783,965	132,051
Equipment.....	<u>292,527</u>	<u>404,693</u>	<u>112,166</u>
Total System Funds.....	<u>\$8,841,846</u>	<u>\$9,484,377</u>	<u>\$ 642,531</u>
<b>STATE, FEDERAL AND PRIVATE FUNDS.....</b>	<b>\$ 125,012</b>	<b>\$ 232,334</b>	<b>\$ 107,322</b>
Total Funds-All Sources.....	<u>\$8,966,858</u>	<u>\$9,716,711</u>	<u>\$ 749,853</u>

The CIP was evaluated independently by Metcalf & Eddy. Metcalf & Eddy concluded that the CIP is responsive to the long-term operating requirements of the area served by the System. See “APPENDIX A—LETTER OF METCALF & EDDY, CONSULTING ENGINEERS.”

Although Black & Veatch, the Authority’s rate consultant, has not performed a detailed independent review of the capital program elements and has not made an engineering evaluation of the System, Black & Veatch has concluded that the gross level of anticipated commitments through 2013 as reflected in the CIP appears to be reasonable compared to other large water and wastewater utilities.

Following is a detailed explanation of the capital program elements within the CIP.

*Water Supply and Transmission*

*Kensico-City Tunnel.* The Kensico-City Tunnel will be a 16 mile long tunnel from the Kensico Reservoir to the Van Cortlandt Park Valve Chamber, bypassing the Hillview Reservoir. This tunnel will provide redundancy for the sections of the Catskill and Delaware Aqueducts that run from the Kensico Reservoir to the City.

*Conveyance.* This program will research and develop alternate conveyance conduits and/or water supplies for the City in order to provide more dependability within the Water System. The alternate water supplies could be used during drought situations, to augment the City’s daily water supply, or during repairs and inspections of existing aqueducts and tunnels.

*Tunnel 3.* Stages I and II of Tunnel 3 include completion of the Brooklyn/Queens and Manhattan segments. Excavation of Stage I was completed in 1985. Stage I became operational in July 1998 and has improved the reliability of the transmission system. Stage I amounts relate to facility improvements at Hillview Reservoir. Completion of the Brooklyn/Queens segment of Stage II will improve services to Staten Island, Brooklyn and Queens. Construction of the Manhattan segment of Stage II will follow completion of the Brooklyn/Queens segment of Stage II which is expected to be completed in 2006. The entire Stage II is scheduled to be completed in 2012. See “THE SYSTEM—The Water System—Water Collection and Distribution.”

### *Water Distribution*

*Croton Filtration Project.* The City is a party to a federal court consent decree with the United States and the State which sets out a timetable for the design and construction of a full-scale water treatment facility to filter Croton System water. See “THE SYSTEM—The Water System—Governmental Regulation.”

*Water Quality Preservation.* The City provides for improvements to the upstate watersheds including projects undertaken pursuant to the Filtration Avoidance Determination (as hereinafter defined) in the Catskill and Delaware watersheds such as the acquisition of environmentally sensitive property, the upgrade of non-City owned water pollution control facilities and the construction of an ultraviolet water treatment facility. Other projects in the upstate watersheds include enhanced security systems and repair of the leak in the Rondout-West Branch Tunnel. See “THE SYSTEM—Overview,” “THE SYSTEM—The Water System—Water Collection and Distribution,” and “THE SYSTEM—The Water System—Governmental Regulation.”

### *Water Pollution Control*

*Consent Decree Upgrading and Construction.* The Clean Water Act (as hereinafter defined) and the State Consent Decrees (as hereinafter defined) require construction of an intercepting sewer for one of the fourteen plants, and the upgrading of six plants. These projects are designed to improve the quality of the surrounding waters.

*Water Quality Mandates.* During periods of heavy rainfall, a combination of stormwater and sewage bypasses treatment and is released into the City’s waterways. This program provides for the study, design and construction of the facilities necessary to control the polluting effects of such releases.

*Plant Upgrading and Reconstruction.* This program includes various projects undertaken to upgrade or reconstruct treatment plants, sewage pump stations, motor vessels, regulators and components of the plant treatment system.

*Plant Component Stabilization.* This program includes the replacement and reconstruction of failing components within the fourteen plants and their related facilities necessary to maintain process reliability and the retrofit of five water pollution control plants to decrease the amount of nitrogen discharged into the surrounding water.

### *Sewers*

*Replacement of Chronically Failing Components.* This program provides for the replacement of sewers that have already collapsed or experience chronic malfunctions (for example, sagging, bends or improper alignment) that cannot be overcome through maintenance or experience chronic malfunction due to inadequate capacity.

*Programmatic Replacement and Reconstruction.* Systematic replacement of sewers constructed with what are now considered to be substandard methods and materials or with materials that have exceeded their useful life has been undertaken. This will avoid more costly future repairs and will improve the general reliability of the System.

*Programmatic Response to Regulatory Mandates.* A program to address the mandated construction of new sewers required by the Clean Water Act has been established. This program is designed to eliminate the occasional discharge of untreated sewage.

*Replacement or Augmentation of Existing System.* The combined sewers must be large enough to convey a certain amount of both stormwater and sewage flow based on population density, industrial discharges and stormwater runoff in the sewered area. Some existing sewers fail to handle this flow adequately due to events occurring subsequent to their original design.

The sewer projects contained within this category will increase the capacity of these sewers to adequate levels through reconstruction, repair, replacement or diversion of flow into supplemental sewer

pipe. Also included in this category are sewer projects that are undertaken primarily because other infrastructure projects make such sewer work desirable. These projects include the construction of sewers in conjunction with other utilities' (such as water, gas and electric) road reconstruction and major land use changes.

*Extensions to Accommodate New Development.* The City must provide acceptable sewage disposal methods for residents within its jurisdiction and must therefore construct new sewers as required. The construction of sewers to replace septic tanks in populated areas avoids health problems associated with viruses, bacteria and other sewage-related pollutants and minimizes stormwater flooding.

*Equipment*

*Utility Relocation for Sewers and Water Main Projects.* Under the City's cost-sharing agreement with gas utilities, the City is required to pay 51% of utility work required as a result of water main and sewer construction projects.

**Historical Capital Program**

The following table presents capital commitments and capital expenditures of the System for Fiscal Years 1999 through 2003. Capital commitments are contractual obligations entered into during the Fiscal Year while capital expenditures represent cash payments made during the Fiscal Year.

**System Capital Commitments and Expenditures  
(Millions of Dollars)**

	FY 1999		FY 2000		FY 2001		FY 2002		FY 2003	
	System Funds(1)	All Funds(2)	System Funds(1)	All Funds(2)	System Funds(1)	All Funds(2)	System Funds(1)	All Funds(2)	System Funds(1)	All Funds(2)
<b>Commitments</b>										
Water Supply . . . . .	\$ 4	\$ 4	\$ 71	\$ 71	\$ 130	\$ 130	\$ 135	\$ 135	\$ 63	\$ 63
Water Mains . . . . .	200	203	271	271	178	178	492	492	337	337
Sewer . . . . .	185	185	240	240	90	90	199	199	201	202
Water Pollution Control	198	199	420	420	970	970	806	806	681	687
Equipment . . . . .	81	81	66	66	56	56	37	37	84	84
Total . . . . .	<u>\$668</u>	<u>\$672</u>	<u>\$1,068</u>	<u>\$1,068</u>	<u>\$1,423</u>	<u>\$1,423</u>	<u>\$1,669</u>	<u>\$1,669</u>	<u>\$1,366</u>	<u>\$1,373</u>
	FY 1999		FY 2000		FY 2001		FY 2002		FY 2003	
<b>Expenditures</b>	System Funds(1)	All Funds(2)	System Funds(1)	All Funds(2)	System Funds(1)	All Funds(2)	System Funds(1)	All Funds(2)	System Funds(1)	All Funds(2)
Water Supply . . . . .	\$ 87	\$ 87	\$ 75	\$ 75	\$ 77	\$ 77	\$ 84	\$ 84	\$ 87	\$ 87
Water Mains . . . . .	187	190	168	169	214	215	325	325	269	270
Sewer . . . . .	174	174	218	218	196	196	184	185	187	187
Water Pollution Control	274	278	263	268	275	276	327	328	568	575
Equipment . . . . .	59	59	68	68	78	78	50	50	47	47
Total . . . . .	<u>\$781</u>	<u>\$788</u>	<u>\$792</u>	<u>\$798</u>	<u>\$840</u>	<u>\$842</u>	<u>\$970</u>	<u>\$972</u>	<u>\$1,158</u>	<u>\$1,166</u>

- (1) System Funds include the proceeds of Authority bonds sold directly to the public and those privately placed with the EFC (as defined below) under the revolving fund program and System revenues.
- (2) All Funds include federal and State capital grants.



## **Financing Program**

*Prior Financing.* Since the first issuance of bonds by the Authority in 1985, capital improvements to the System have been financed primarily with (1) proceeds of bonds sold directly to the public and privately placed with EFC in connection with the revolving loan fund program described below, (2) federal and State capital grants, and (3) pay-as-you-go capital paid from System revenues. See “Debt Service Requirements” below.

*Future Financing.* The Authority estimates that approximately 98% of the System’s capital costs will be paid from proceeds of bonds and other forms of indebtedness sold to the public and privately placed with EFC and System revenues. For purposes of forecasting revenue requirements for the System, the principal amount of bonds estimated to be issued for capital purposes in each of the Fiscal Years 2005 through 2009 averages approximately \$1.7 billion per year. See the table entitled “Sources and Uses of Funds” below.

Historically, federal grant funds were provided pursuant to the federal Water Pollution Control Act, as amended by the Clean Water Act of 1977 and by the Water Quality Act of 1987 (the “Clean Water Act”), in a program administered by the states, for construction and reconstruction of water pollution control facilities. The City has used these grant funds for five water pollution control plants: Oakwood Beach, Coney Island, Owls Head, Red Hook and North River. The Clean Water Act currently requires states to use federal funds in revolving loan programs in lieu of a federal grant program for water pollution control facilities. To this end, a revolving loan program has been established by the State and administered by EFC in order to use federal financial assistance together with State matching grants in a program to assist municipalities to construct eligible sewage facilities by providing subsidized loans. In addition, pursuant to the Safe Drinking Water Act Amendments of 1996, the State has also initiated a revolving loan program, also administered by EFC to provide loans for drinking water projects. The Authority has participated in loans under both of the revolving loan programs and anticipates further borrowing under the programs. These revolving loan programs have routinely featured the public sale of bonds by EFC to finance the purchase by EFC of Authority Second Resolution Bonds. See “THE SYSTEM—The Water System—Governmental Regulation” and “THE SYSTEM—The Sewer System—Governmental Regulation.” Implementation of the CIP is dependent upon the Authority’s ability to market its securities successfully in the public credit markets.

## Sources and Uses of Funds

The following table presents the projected sources and uses of the funds for the System as of June 2004.

### Sources and Uses of Funds (Millions of Dollars)

<b>Description</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>FY 2008</b>	<b>FY 2009</b>	<b>Period Total</b>
<b>Sources of Funds</b>							
Proceeds from Sale of Bonds and Second Resolution							
Bonds . . . . .	\$ 1,766.6	\$ 1,540.1	\$ 2,294.1	\$ 1,827.7	\$ 1,673.9	\$ 1,771.4	\$10,873.8
Proceeds from Commercial Paper Notes . . . . .	964.5	1,389.5	1,683.0	1,561.0	1,518.0	1,605.0	8,721.0
<b>Total Sources . . . . .</b>	<b>2,731.1</b>	<b>2,929.6</b>	<b>3,977.1</b>	<b>3,388.7</b>	<b>3,191.9</b>	<b>3,376.4</b>	<b>19,594.8</b>
<b>Uses of Funds</b>							
Refunding of Prior Bonds (1) . . . . .	691.0	50.0	435.3	105.6	—	—	1,281.9
Retirement of Commercial Paper Notes . . . . .	964.5	1,389.5	1,683.0	1,561.0	1,518.0	1,605.0	8,721.0
Deposit to Refundable Principal Installment (RPI) Trust Fund (2) . . . . .	50.0	—	—	—	—	—	50.0
Deposit to Construction Fund . . . . .	964.5	1,389.5	1,683.0	1,561.0	1,518.0	1,605.0	8,721.0
Other (3) . . . . .	61.1	100.6	175.8	161.1	155.9	166.4	820.9
<b>Total Uses of Funds . . . . .</b>	<b>2,731.1</b>	<b>2,929.6</b>	<b>3,977.1</b>	<b>3,388.7</b>	<b>3,191.9</b>	<b>3,376.4</b>	<b>19,594.8</b>
<b>Construction Fund</b>							
Beginning Balance . . . . .	555.2	288.5	250.0	250.0	250.0	250.0	555.2
Transfer from Proceeds . . . . .	964.5	1,389.5	1,683.0	1,561.0	1,518.0	1,605.0	8,721.0
Transfer from RPI Trust Fund (2) . . . . .	—	50.0	—	—	—	—	50.0
Pay As You Go Capital Construction . . . . .	—	60.0	60.0	80.0	100.0	100.0	400.0
<b>Total Available Construction Funds . . . . .</b>	<b>1,519.7</b>	<b>1,788.0</b>	<b>1,993.0</b>	<b>1,891.0</b>	<b>1,868.0</b>	<b>1,955.0</b>	<b>9,726.2</b>
<b>Less: Total Capital Spending . . . . .</b>	<b>(1,231.2)</b>	<b>(1,538.0)</b>	<b>(1,743.0)</b>	<b>(1,641.0)</b>	<b>(1,618.0)</b>	<b>(1,705.0)</b>	<b>(9,476.2)</b>
<b>Ending Balance . . . . .</b>	<b>\$ 288.5</b>	<b>\$ 250.0</b>	<b>\$ 250.0</b>	<b>\$ 250.0</b>	<b>\$ 250.0</b>	<b>\$ 250.0</b>	<b>\$ 250.0</b>

- (1) For Fiscal Year 2004, includes refunding Bonds actually issued and Bonds issued to refund Crossover Bonds. For Fiscal Year 2005, projects Bonds to be issued to refund RPI Bonds. For Fiscal Year 2006, projects Bonds to be issued to refund RPI Bonds and Crossover Bonds. For Fiscal Year 2007, projects Bonds to be issued to refund Crossover Bonds.
- (2) Bond proceeds have been deposited in trust to pay the RPI Bonds maturing June 15, 2005. The Authority anticipates using other available funds to make this payment and using the money deposited in trust to pay the Costs of Water Projects or to provide for the payment of Commercial Paper Notes.
- (3) Includes issuance costs, Debt Service Reserve Fund requirements and capitalized interest.

The following table shows projected debt service requirements including payments on outstanding bonds and on future bonds projected to be issued in financing the CIP as of June 2004. See “—Debt Service Requirements.”

**Future Debt Service Requirements  
(Millions of Dollars)**

<u>Description</u>	<u>Bond Issue</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
First Resolution Debt Service						
Outstanding Bonds (1) . . . . .		\$ 481.0	\$ 486.6	\$ 476.5	\$ 501.3	\$ 519.7
Anticipated Future Bond Issues						
Fiscal Year 2005 Bonds . . . . .	783.8	14.9	52.1	40.5	40.5	40.5
Fiscal Year 2006 Bonds . . . . .	1,994.0	—	29.9	129.5	95.6	95.6
Fiscal Year 2007 Bonds . . . . .	1,527.7	—	—	29.0	123.7	91.6
Fiscal Year 2008 Bonds . . . . .	1,373.9	—	—	—	28.2	119.5
Fiscal Year 2009 Bonds . . . . .	1,471.4	—	—	—	—	30.1
Cash defeasance . . . . .		(1.0)	(1.0)	(1.0)	(21.4)	(31.5)
Total First Resolution Debt Service . . . . .		\$ 494.9	\$ 567.6	\$ 674.5	\$ 767.9	\$ 865.5
Subordinated Obligations						
Interest Payments on Commercial Paper Notes . . . . .		30.0	34.0	34.0	34.0	34.0
Outstanding Bonds . . . . .		293.7	304.4	305.8	308.7	307.4
Anticipated Future Second Resolution Bonds . . . . .						
Fiscal Year 2005 Bonds . . . . .	756.4	23.9	66.5	54.1	54.1	54.1
Fiscal Year 2006 Bonds . . . . .	300.0	—	7.4	30.3	22.6	22.6
Fiscal Year 2007 Bonds . . . . .	300.0	—	—	7.8	31.4	23.5
Fiscal Year 2008 Bonds . . . . .	300.0	—	—	—	7.8	31.4
Fiscal Year 2009 Bonds . . . . .	300.0	—	—	—	—	7.8
Less: Current Capitalized Interest (2) . . . . .		—	—	—	—	—
Less: Future Capitalized Interest (3) . . . . .		—	(1.5)	(1.5)	(1.5)	(1.5)
Less: Current EFC Subsidy (4) . . . . .		(70.1)	(72.6)	(71.3)	(68.4)	(65.0)
Less: Future EFC Subsidy (5) . . . . .		(6.4)	(20.1)	(25.2)	(31.6)	(37.9)
Less: EFC Payments (6) . . . . .		(8.8)	(7.7)	(6.8)	(5.9)	(4.9)
Actual Debt Service on Subordinated Indebtedness . . . . .		\$ 262.3	\$ 310.4	\$ 327.2	\$ 351.2	\$ 371.5
Less: Interest Earnings-Subordinate Debt Service Fund . . . . .		(0.6)	(0.8)	(1.3)	(2.0)	(2.7)
Less: Carryforward Revenues . . . . .		(174.0)	(121.8)	(138.1)	(105.2)	(78.4)
Net Debt Service on Subordinated Indebtedness . . . . .		\$ 87.7	\$ 187.9	\$ 187.8	\$ 244.0	\$ 290.4
Total Debt Service Payable from Current Revenues (7)		<u>\$ 582.6</u>	<u>\$ 755.5</u>	<u>\$ 862.3</u>	<u>\$1,011.9</u>	<u>\$1,155.9</u>

- (1) Includes debt service on bonds issued in Fiscal Year 2004.
- (2) Includes capitalized interest on outstanding subordinated bonds.
- (3) Includes capitalized interest on anticipated future subordinated bonds.
- (4) Includes the estimated EFC subsidy on outstanding subordinated bonds.
- (5) Includes the estimated EFC subsidy on anticipated future subordinated bonds.
- (6) Represents the anticipated transfer of surplus payments used to offset interest payments on Second Resolution Bonds.
- (7) Includes Total First Resolution Debt Service plus Net Debt Service on Subordinated Indebtedness.

Debt service payments on anticipated future Bond issues reflect a 30-year term bond structure. The interest rates used in computing the anticipated debt service payments for future First Resolution fixed rate issues average 6% in Fiscal Year 2005, 6.375% in Fiscal Year 2006, and 6.75% in each year thereafter. The interest rate used for currently outstanding and future variable rate issues is 3.75% per annum in Fiscal Year 2005 and 4.25% per annum from Fiscal Year 2006 through maturity. The amount of long-term variable rate debt currently outstanding is approximately 13.5% of the Authority's total debt outstanding and is expected to range between 15% and 20% in the future. Debt service payments on anticipated future Authority Second Resolution Bond issues assume that Authority Second Resolution Bonds continue to be issued to EFC and reflect a 30-year term with relatively level annual payments of combined principal and interest. The actual debt service requirements of the Authority will likely differ from the debt service requirements projected in the foregoing table.

The interest rates used in computing the anticipated debt service payments for future EFC bonds secured by Authority Second Resolution Bonds average 5.95% in Fiscal Year 2005 and 6.33% in Fiscal Year 2006 and 6.7% in each year thereafter. The Capitalized Interest and EFC subsidy shown in the table include interest capitalized for one year on bonds sold to EFC and subsidies expected to be provided by EFC for these issues, respectively. It is also anticipated that Authority bond issues sold to EFC will continue to be structured so that the interest on such bonds is calculated net of the anticipated EFC subsidy.

## Debt Service Requirements

The following schedule sets forth the amount required during each Fiscal Year (ending June 30) shown below for the payment of the principal of and the interest (including the Accreted Value of all Capital Appreciation Bonds) on Outstanding Bonds issued under the First Resolution and the Second General Resolution assuming that Variable Rate Bonds bear interest at a fixed rate to their maturity of 3.75% per annum in Fiscal Year 2005 and 4.25% per annum from Fiscal Year 2006 through maturity. The schedule does not include debt service on any outstanding Commercial Paper Notes.

Fiscal Year	Outstanding Bonds(1)(2)(3)	Fiscal 2005 A Bonds			Bonds including Fiscal 2005 A Bonds (1)(2)(3)	Outstanding Second Resolution Bonds (2)(4)	Bonds (including Fiscal 2005 A Bonds) and Second Resolution Bonds (1)(2)(3)(4)
		Principal	Interest	Total			
2005	\$ 480,953,464	—	\$ 6,458,333	\$ 6,458,333	\$ 487,411,798	\$ 214,857,346	\$ 702,269,143
2006	486,576,890	—	7,500,000	7,500,000	494,076,890	224,109,178	718,186,068
2007	476,494,801	—	7,500,000	7,500,000	483,994,801	227,770,903	711,765,705
2008	501,321,646	—	7,500,000	7,500,000	508,821,646	234,459,251	743,280,897
2009	519,670,116	—	7,500,000	7,500,000	527,170,116	237,506,427	764,666,543
2010	513,633,373	—	7,500,000	7,500,000	521,133,373	245,195,369	766,328,743
2011	554,720,926	—	7,500,000	7,500,000	562,220,926	250,682,439	812,903,365
2012	540,540,378	—	7,500,000	7,500,000	548,040,378	255,627,005	803,667,384
2013	531,811,250	—	7,500,000	7,500,000	539,311,250	217,317,476	756,628,725
2014	599,174,377	—	7,500,000	7,500,000	606,674,377	203,366,180	810,040,557
2015	634,164,870	—	7,500,000	7,500,000	641,664,870	189,563,165	831,228,035
2016	634,116,003	—	7,500,000	7,500,000	641,616,003	189,825,885	831,441,888
2017	633,694,847	—	7,500,000	7,500,000	641,194,847	190,112,187	831,307,034
2018	641,660,435	—	7,500,000	7,500,000	649,160,435	186,732,572	835,893,007
2019	642,386,257	—	7,500,000	7,500,000	649,886,257	184,090,354	833,976,611
2020	645,771,797	—	7,500,000	7,500,000	653,271,797	174,832,851	828,104,648
2021	642,765,756	—	7,500,000	7,500,000	650,265,756	166,450,803	816,716,558
2022	643,113,256	—	7,500,000	7,500,000	650,613,256	163,852,626	814,465,882
2023	642,898,818	—	7,500,000	7,500,000	650,398,818	158,769,765	809,168,583
2024	647,769,050	—	7,500,000	7,500,000	655,269,050	120,192,099	775,461,149
2025	647,198,612	—	7,500,000	7,500,000	654,698,612	119,910,074	774,608,686
2026	649,852,453	—	7,500,000	7,500,000	657,352,453	109,917,463	767,269,916
2027	655,471,422	—	7,500,000	7,500,000	662,971,422	108,587,605	771,559,027
2028	593,256,747	—	7,500,000	7,500,000	600,756,747	99,493,831	700,250,578
2029	572,940,728	—	7,500,000	7,500,000	580,440,728	91,170,669	671,611,398
2030	593,637,185	—	7,500,000	7,500,000	601,137,185	76,852,874	677,990,058
2031	634,487,260	—	7,500,000	7,500,000	641,987,260	72,142,724	714,129,984
2032	643,887,091	—	7,500,000	7,500,000	651,387,091	45,235,190	696,622,281
2033	622,270,585	—	7,500,000	7,500,000	629,770,585	25,530,984	655,301,568
2034	599,302,960	—	7,500,000	7,500,000	606,802,960	—	606,802,960
2035	599,301,760	—	7,500,000	7,500,000	606,801,760	—	606,801,760
2036	9,391,172	—	7,500,000	7,500,000	16,891,172	—	16,891,172
2037	9,391,172	—	7,500,000	7,500,000	16,891,172	—	16,891,172
2038	109,391,172	—	7,500,000	7,500,000	116,891,172	—	116,891,172
2039	4,391,172	150,000,000	7,500,000	157,500,000	161,891,172	—	161,891,172
2040	4,391,172	—	—	—	4,391,172	—	4,391,172
2041	4,391,172	—	—	—	4,391,172	—	4,391,172
2042	4,391,172	—	—	—	4,391,172	—	4,391,172
<b>Total</b>	<b>\$18,570,583,317</b>	<b>\$150,000,000</b>	<b>\$261,458,333</b>	<b>\$411,458,333</b>	<b>\$18,982,041,651</b>	<b>\$4,784,155,295</b>	<b>\$23,766,196,946</b>

Totals may not add due to rounding. Debt service is not included for bonds that have been refunded and are no longer Outstanding.

- (1) Assumes that on the respective tender dates, the Crossover Bonds will be exchanged for the Bonds and the proceeds of the respective series of Crossover Bonds will be applied to redeem certain Outstanding Bonds.
- (2) Net of anticipated capitalized interest, subsidy and surplus payments from EFC.
- (3) Assumes that the maturities of Refundable Principal Installments will be amortized as provided in the definition of Adjusted Debt Service rather than paid in full at maturity.
- (4) Does not include debt service on the Authority's Fiscal 2005 Series 1 Bonds which are expected to be issued in August 2005. See "Plan of Finance."

## FINANCIAL OPERATIONS

The following tables present certain historical data relating to the System which have been derived from the books and records of the City, the Authority and the Board. For more information, see “INTRODUCTORY STATEMENT—Financial Projection Assumptions.”

### Revenues

The following table presents, on a cash basis, the System revenues received during Fiscal Year 1999, as derived from the supplemental schedule of cash receipts and disbursements, and System revenues received during Fiscal Years 2000 through 2003, as derived from the accounting records utilized in preparation of the statement of cash flows, which is contained in the annual financial statements for Fiscal Years 1999 through 2003.

#### System Revenues (Thousands of Dollars)

<u>Revenue Category</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>
Flat Rate—Water and Sewer Charges(1) . . .	\$ 466,837	\$ 454,887	\$ 490,181	\$ 513,894	\$ 530,200
Metered—Water and Sewer Charges(1) . . .	842,436	907,350	872,132	946,922	1,009,677
Meter—Upstate Customers . . . . .	14,252	18,994	18,552	21,102	22,790
Miscellaneous Revenues(2) . . . . .	51,136	49,950	53,452	70,482	73,633
Interest Penalty—Late Charges . . . . .	19,445	24,250	24,987	24,930	38,235
Interest Income . . . . .	85,872	74,467	85,724	95,201	97,351
Tax Lien Sale(3) . . . . .	25,912	7,449	40,129	20,152	0
Total . . . . .	<u>\$1,505,890</u>	<u>\$1,537,347</u>	<u>\$1,585,157</u>	<u>\$1,692,683</u>	<u>\$1,771,886</u>

- 
- (1) Includes both current payments and payments relating to accounts in arrears.
  - (2) Miscellaneous Revenues are primarily comprised of water and sewer connection and disconnection fees, repair fees, meter installation fees, water usage permits, special meter reading fees and subsidy payments from EFC.
  - (3) In connection with sales of liens on real property securing delinquent property taxes, the City Department of Finance also sold liens on such property securing delinquent water and sewer charges.

The table above records actual cash received by the System and does not reflect either accounts receivable or billing accruals. The System has consistently realized collections of cash revenues in amounts exceeding costs for debt service, current operations and required levels of coverage. This has been achieved while maintaining residential water and sewer service costs at a level which is below the average of comparable large cities.

The forecasted cash flows and anticipated future rate increases take into consideration the anticipated effects of new initiatives by the Board and DEP to enhance the efficiency of collection for water and sewer billings. It is assumed that some of these initiatives or others will gradually result in a 3% increase in the overall rate of cash collections for frontage customers and a 6% increase in the overall rate of cash collections for metered customers during the forecast period through Fiscal Year 2009, in addition to increases from higher rates. In the event that DEP is not as successful as anticipated in implementing the enhancement to current collection strategies, the actual increases in user rates in future years may be higher than the increases currently forecasted. For a more detailed discussion of billing and collection, including collection initiatives, see “RATES AND BILLINGS.”

**Expenses**

The following table presents System expenses for Fiscal Years 1999 through 2003 on an accrual basis which have been derived from the accounting records utilized in preparation of the annual financial statements for Fiscal Years 1999 through 2003. These expenses represent operation, maintenance and general expenses excluding the lease rental payment to the City and certain other items.

**System Expenses  
(Thousands of Dollars)**

<u>Expense Category</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>
Water(1)					
Personal Service(2) .....	\$100,010	\$118,598	\$120,797	\$129,292	\$135,627
Other Than Personal Service(3) .....	<u>159,516</u>	<u>146,331</u>	<u>165,068</u>	<u>181,034</u>	<u>176,913</u>
Total.....	259,526	264,929	285,865	310,326	312,540
Wastewater(1)					
Personal Service(2) .....	162,310	187,003	188,704	197,522	196,851
Other Than Personal Service(3) .....	<u>193,433</u>	<u>158,037</u>	<u>169,459</u>	<u>169,548</u>	<u>183,200</u>
Total.....	<u>355,743</u>	<u>345,040</u>	<u>358,163</u>	<u>367,070</u>	<u>380,051</u>
Sub-Total.....	615,269	609,969	644,028	677,396	692,591
Administrative and General(4).....	13,506	10,092	11,215	14,171	15,181
Indirect Expenses(5).....	<u>37,676</u>	<u>40,811</u>	<u>41,195</u>	<u>53,361</u>	<u>51,613</u>
Total System.....	<u>\$666,451</u>	<u>\$660,872</u>	<u>\$696,438</u>	<u>\$744,928</u>	<u>\$759,385</u>

- 
- (1) Certain historical, administrative and overhead costs of DEP were allocated to the water and sewer functions based upon the proportion of applicable personnel within DEP.
  - (2) Personal Service costs include salaries, fringe benefits and pension costs.
  - (3) Other Than Personal Service costs include real estate taxes paid to upstate communities for watershed properties, land-based sludge disposal costs and for electricity, chemicals and supply costs.
  - (4) Administrative and General costs include Authority and Board expenses.
  - (5) Indirect Expenses include City agency support, customer accounting, and judgments and claims costs.

## Projected Revenues

As indicated in the table below, user payments are projected as of June 2004 to increase from approximately \$1.8 billion in Fiscal Year 2004 to approximately \$2.4 billion in Fiscal Year 2009. Projected rate increases in future Fiscal Years provide the majority of the increase in user payments. Upstate revenues are projected to increase from approximately \$22.2 million in Fiscal Year 2004 to approximately \$33.3 million in Fiscal Year 2009. This revenue growth is due to expected increases in the cost of water supply services and the assumption that future revenue from these customers will more closely match the cost of providing service. Miscellaneous revenues include fees from activities such as the review, inspection, and approval of System connections.

### Projected Revenues (Millions of Dollars)

<u>Description</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Operating Revenues						
User Payments (1) . . . . .	\$1,668.9	\$1,708.5	\$1,832.1	\$1,937.8	\$2,091.8	\$2,272.2
Upstate Revenues . . . . .	22.2	24.1	26.3	28.5	31.0	33.3
Subtotal Service Revenue . . . . .	1,691.1	1,732.5	1,858.4	1,966.3	2,122.8	2,305.5
Miscellaneous Revenues . . . . .	5.6	5.8	6.1	6.4	6.8	7.1
Subtotal Operating Revenue . . . . .	<u>1,696.7</u>	<u>1,738.4</u>	<u>1,864.5</u>	<u>1,972.7</u>	<u>2,129.5</u>	<u>2,312.6</u>
Nonoperating Revenues						
Interest Income on System Funds (2) . . . . .	59.8	52.7	66.0	76.4	86.1	96.1
Subtotal Nonoperating Revenues . . . . .	<u>59.8</u>	<u>52.7</u>	<u>66.0</u>	<u>76.4</u>	<u>86.1</u>	<u>96.1</u>
Total Revenues . . . . .	<u>\$1,756.5</u>	<u>\$1,791.1</u>	<u>\$1,930.5</u>	<u>\$2,049.1</u>	<u>\$2,215.6</u>	<u>\$2,408.7</u>

Figures are calculated on a cash basis.  
Totals may not add due to rounding.  
Source: Black & Veatch.

- (1) Includes late payment charges.
- (2) Includes interest income on the Construction Fund, Debt Service Fund and the Debt Service Reserve Fund.



## Projected Operating and Maintenance Expenses

The table set forth below shows, for Fiscal Years 2004 through 2009, the System's projected operation and maintenance expenses as of June 2004.

### Projected Operation and Maintenance Expense (Millions of Dollars)

<u>Line No.</u>	<u>Description</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
1	Authority/Board Operations . . . . .	\$ 17.5	\$ 22.0	\$ 23.1	\$ 24.3	\$ 25.5	\$ 26.7
2	Net Authority Expense for the Defeasance of Debt (1) . . . . .	184.6	90.0	—	—	—	—
	Water Operations						
3	Personal Services . . . . .	142.2	144.2	145.9	149.4	153.0	156.7
4	Other Than Personal Services . . . . .	186.4	205.5	213.5	219.9	226.5	233.5
5	Total Water Operations. . . . .	328.6	349.7	359.4	369.3	379.5	390.1
	Wastewater Operations						
6	Personal Services . . . . .	225.1	227.2	231.0	236.5	242.1	247.9
7	Other Than Personal Services . . . . .	200.9	201.9	209.5	214.3	220.4	226.7
8	Total Wastewater Operations . . . . .	426.0	429.1	440.5	450.8	462.5	474.6
9	Indirect Expenses . . . . .	12.9	12.9	12.9	12.9	12.9	12.9
10	Judgments and Claims . . . . .	8.0	8.0	8.0	8.0	8.0	8.0
11	Total Operating Expenses . . . . .	977.6	911.7	843.9	865.2	888.4	912.4
12	Less: Trust Account Withdrawals . . . . .	—	—	—	(15.0)	(35.0)	(43.6)
13	Net Operating Expenses . . . . .	977.6	911.7	843.9	850.2	853.4	868.8
14	Less: Credit for Prior Year Excess O&M Payment . . . . .	—	—	—	—	—	—
15	Net Operating Expense Payments . . . . .	<u>\$977.6</u>	<u>\$911.7</u>	<u>\$843.9</u>	<u>\$850.2</u>	<u>\$853.4</u>	<u>\$868.8</u>

(1) \$215.1 million of Bonds was defeased in Fiscal Year 2004 with \$184.6 million of excess Fiscal Year 2004 revenues and \$30.5 million of carry-forward revenues.

Totals may not add due to rounding.

Figures are calculated on a cash basis.

Source: Black & Veatch.

Operation and Maintenance Expenses include administrative costs associated with the Authority and the Board, direct operating costs for the System, indirect operating costs of DEP, and other expenses and adjustments to annual operating expenses. Each of these is explained more fully below.

*The Authority/Board Operations.* Administrative expenses of the Authority and the Board, shown on Line 1 of the table above, include annual fees required by EFC in connection with the Authority's participation in the State Revolving Fund Program. These fees are projected to be \$8.8 million in Fiscal Year 2005 and are expected to increase as the outstanding principal of bonds issued to EFC increases. Other expenses of the Authority include fees related to adjustable rate bonds and commercial paper and the management of investments.

*Water Operations.* The operating costs of the Water System include direct operation and maintenance costs applicable to one or more functional areas of the Water System and the distribution system as well as certain indirect operating costs of the DEP which are allocated between the Water System and the Sewer System. The operating costs of the Water System are divided into personal services costs and other than personal services costs. Personal services costs include direct salary costs plus fringe benefit and pension costs.

Other than personal services costs include property taxes paid to upstate communities for watershed properties as well as chemicals, electricity, and other expenses.

All but a small percentage of the Water System functions by gravity so that electricity costs necessary to maintain normal water transmission and distribution are relatively small. In drought conditions, additional pumping is necessary for optimal distribution of water available from the System, thereby causing increased electricity costs. The forecasted cash flows currently assume that water consumption levels will be constant, independent of any drought-related measures.

Personal services costs assume a 2.5% increase per year from Fiscal Years 2005 through 2009. Other than personal services costs are assumed to increase at an estimated rate of 3% per year for the forecast period.

In accordance with the watershed protection agreement, DEP will implement additional programs which will enhance the ability of the City and the communities located in the watershed area to protect the quality of the water supply. Such programs will include certain capital investments which are contained within the CIP. The forecasted operation and maintenance expenses for the Water System reflect the expected increase in operation and maintenance costs due to the Watershed Agreement.

*Wastewater Operations.* The operating costs of the Sewer System include direct operation and maintenance costs applicable to one or more functional areas of the Sewer System as well as certain indirect operating costs of DEP allocated to the Water System and the Sewer System. The operating costs of the Sewer System are also divided into personal services and other than personal services costs. Personal services costs include direct salary costs plus fringe benefits and pension costs.

Other than personal services costs include electricity for the water pollution control plants, pump stations and service yards, chemicals, and other expenses. Electricity, which represents a significant expense in operating the treatment plants and pump stations, is supplied primarily by the Power Authority of the State of New York. A major component of other than personal services cost is biosolids management. The annual costs of biosolids management are anticipated to remain relatively constant at approximately \$50 million per year for the next several years in accordance with the terms of current re-use contracts. Certain other cost adjustments are reflected in the forecasted cash flow as adjustments are made to specific operating programs based upon System needs.

*Other Expenses.* Other expenses of the System include indirect expenses and judgments and claims. Indirect expenses, shown on Line 9 of the table, reflect costs allocated to the System for support provided by various City agencies and departments. Services provided include budget preparation and review, cost and revenue accounting, billing and collection, and legal support. The method of allocating these costs to the System is based upon costs initially allocated to DEP and subsequently divided between those attributable to water and sewer and those costs associated with other activities of DEP. The costs allocated to DEP as a whole are derived from the total costs of City support agencies and departments and a formalized cost allocation plan which distributes the costs to affected departments and agencies. DEP's billing and collection expenses are included in the operation and maintenance costs of the Water System and the Wastewater System.

*Credits Against Operation and Maintenance Expense.* Pursuant to a consent decree (the "1989 Consent Decree") entered into in 1989 under the Marine Protection Research and Sanctuaries Act of 1972 ("MPRSA"), as amended by the Ocean Dumping Ban Act of 1988 (the "Ban Act"), DEP ceased the ocean disposal of sludge in June 1992. The Ban Act and the 1989 Consent Decree provide that 85% of the fees and penalties paid shall be deposited into a trust account and shall be available to reimburse the City for costs incurred for developing alternative biosolids management facilities. As of June 30, 2004, the value of the trust account was \$86.4 million. It is assumed that this value will increase with interest earnings at the rate of 2% per annum, until withdrawals are made. A portion of the balance of the fees and penalties was paid to United States Environmental Protection Agency ("USEPA") with the remainder divided equally between the New York State Water Pollution Control Revolving Fund and the New York State Clean Oceans Fund. It is anticipated that \$15 million in Fiscal Year 2007, \$35 million in Fiscal Year 2008, and \$43.6 million in Fiscal Year 2009 will be available as an offset to operation and maintenance expenses.

## Projected Financial Operations

The following table shows a summary of the forecasted cash flows for the Authority as of June 2004 for Fiscal Year 2004 through Fiscal Year 2009. See “CAPITAL IMPROVEMENT AND FINANCING PROGRAM—Debt Service Requirements.” The projected rate increases described herein under “RATES AND BILLING—Rates” have been assumed in order to meet cash expenditure requirements to comply with debt service requirements pursuant to the Resolution and the Second Resolution. See “FINANCIAL OPERATIONS—Projected Revenues.” As shown on Line 30 of the table, positive net surpluses are projected to be maintained throughout the reporting period. Line 31 illustrates the coverage of First Resolution debt service by current revenues available for debt service. Line 32 illustrates the coverage of First Resolution and Second Resolution debt service by current revenues available for debt service.

### Forecasted Cash Flows (Dollars in Millions)

Line No.	Description	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
	<b>Operating Revenues</b>						
1	Water and Sewer User Payments . . . . .	\$1,668.9	\$1,708.5	\$1,832.1	\$1,937.8	\$2,091.8	\$2,272.2
2	Upstate Revenue . . . . .	22.2	24.1	26.3	28.5	31.0	33.3
3	Miscellaneous Revenue . . . . .	5.6	5.8	6.1	6.4	6.8	7.1
4	Other Revenues . . . . .	—	—	—	—	—	—
	Interest on Funds . . . . .	59.8	52.7	66.0	76.4	86.1	96.1
5	<b>Current Revenues Available for Debt Service . . . . .</b>	<b>1,756.6</b>	<b>1,791.1</b>	<b>1,930.5</b>	<b>2,049.1</b>	<b>2,215.6</b>	<b>2,408.7</b>
	<b>First Resolution Debt Service</b>						
6	Outstanding Bonds . . . . .	490.3	481.0	486.6	476.5	501.3	519.7
7	Anticipated Future Bonds . . . . .	—	13.9	81.0	198.0	266.6	345.8
8	<b>Total First Resolution Debt Service . . . . .</b>	<b>490.3</b>	<b>494.9</b>	<b>567.6</b>	<b>674.5</b>	<b>767.9</b>	<b>865.5</b>
	<b>Subordinated Obligations</b>						
9	Interest Payments on Commercial Paper						
	Notes . . . . .	6.2	30.0	34.0	34.0	34.0	34.0
10	Outstanding Second Resolution Bonds . . . . .	260.1	293.7	304.4	305.8	308.7	307.4
11	Anticipated Future Second Resolution Bonds . . . . .	—	23.9	73.9	92.2	115.9	139.4
12	Less: EFC Subsidy and Capitalized Interest on Subordinated Bonds . . . . .	(86.4)	(85.3)	(101.9)	(104.8)	(107.4)	(109.3)
13	<b>Actual Debt Service on Subordinated</b>						
	Indebtedness . . . . .	179.9	262.3	310.4	327.2	351.2	371.5
14	Less: Carryforward Revenues and Other Revenues . . . . .	(179.9)	(174.6)	(122.6)	(139.4)	(107.2)	(81.1)
15	<b>Net Debt Service on Subordinated Indebtedness . . . . .</b>	<b>—</b>	<b>87.7</b>	<b>187.9</b>	<b>187.8</b>	<b>244.0</b>	<b>290.4</b>
16	<b>Total Debt Service Payable from Current Revenues (line 8 + line 15) . . . . .</b>	<b>490.3</b>	<b>582.6</b>	<b>755.5</b>	<b>862.3</b>	<b>1,011.9</b>	<b>1,155.9</b>
	<b>Operating Expenses</b>						
17	Authority/Board Operations . . . . .	17.5	22.0	23.1	24.3	25.5	26.7
18	Net Authority Expense for the Defeasance of Debt (1) . . . . .	184.6	90.0	—	—	—	—
19	Water System . . . . .	328.6	349.7	359.4	369.3	379.5	390.1
20	Wastewater System . . . . .	426.0	429.1	440.5	450.8	462.5	474.6
21	Indirect Expense . . . . .	12.9	12.9	12.9	12.9	12.9	12.9
22	Judgments and Claims . . . . .	8.0	8.0	8.0	8.0	8.0	8.0
23	<b>Total Operating Expenses . . . . .</b>	<b>977.6</b>	<b>911.7</b>	<b>843.9</b>	<b>865.2</b>	<b>888.4</b>	<b>912.4</b>
24	Less: Trust Account Withdrawals . . . . .	—	—	—	(15.0)	(35.0)	(43.6)
25	<b>Net Operating Expenses . . . . .</b>	<b>977.6</b>	<b>911.7</b>	<b>843.9</b>	<b>850.2</b>	<b>853.4</b>	<b>868.8</b>
26	Less: Credit for Prior Year Excess O&M Payment . . . . .	—	—	—	—	—	—
27	Rental Payment to the City of New York (2) . . . . .	114.8	115.0	133.0	151.4	172.0	191.0
28	Pay As You Go Capital Construction . . . . .	—	60.0	60.0	80.0	100.0	100.0
29	<b>Total Expenses . . . . .</b>	<b>1,092.4</b>	<b>1,086.7</b>	<b>1,036.9</b>	<b>1,081.6</b>	<b>1,125.4</b>	<b>1,159.8</b>
30	<b>Net Surplus (line 5-line 16-line 29) . . . . .</b>	<b>\$ 174.0</b>	<b>\$ 121.8</b>	<b>\$ 138.1</b>	<b>\$ 105.2</b>	<b>\$ 78.4</b>	<b>\$ 93.0</b>
31	<b>First Resolution Debt Service Coverage (line 5/line 8) . . . . .</b>	<b>3.58x</b>	<b>3.62x</b>	<b>3.40x</b>	<b>3.04x</b>	<b>2.89x</b>	<b>2.78x</b>
32	<b>First and Second Resolution Debt Service Coverage (line 5/line 16) . . . . .</b>	<b>3.58x</b>	<b>3.07x</b>	<b>2.56x</b>	<b>2.38x</b>	<b>2.19x</b>	<b>2.08x</b>

(1) \$215.1 million of Bonds was defeased in Fiscal Year 2004 with \$184.6 million of excess Fiscal Year 2004 revenues and \$30.5 million of Fiscal Year 2003 carry-forward revenues.

(2) Rental payments do not take into account savings in projected debt service associated with anticipated cash defeasance of Bonds.

Source: Black & Veatch.

Column subtotals and totals may reflect adjustments for rounding of amounts shown in individual line items.

## RATES AND BILLINGS

### Rates

The Board is responsible for setting rates in compliance with the Rate Covenant. See “SECURITY FOR THE BONDS—Rate Covenant.” The Board retains the firm of Black & Veatch for the purpose of conducting a detailed review of the structure of water and sewer rates. The Board considers the results of Black & Veatch rate studies in establishing its rates and charges for service.

The System’s rates and charges are largely exempt from federal and State regulation. Water rates, fees and charges for water supply are the responsibility of the Board and are not subject to further approval or regulation except for rates for upstate users. Currently approximately 1% of System Revenues are collected from such upstate users. Sewer charges are established by the Board as a percentage of water charges. Participation in the Construction Grants Program, however, requires the maintenance of sewer charges sufficient to defray costs of operation, maintenance and replacement. The Board, as a matter of policy, conforms with these requirements when setting sewer charges. The Board uses data compiled from meter readings for billings and to determine the effectiveness of City-mandated conservation measures.

The following table sets forth the changes in rates for water and sewer service since 1986:

### History of Water and Sewer Rate Increases

Effective Date	Change in Flat-Rate Water	Change in Metered Water	Metered Water Rate (per ccf)(1)	Change in Sewer
July 1, 1986	Increased 9.9%	Increased 9.9%	72.5¢	Remained at 60% of watercharge
July 1, 1987	Increased 12%	Increased 12%	81¢	Increased to 70% of watercharge
July 1, 1988	Increased from \$14.06 to \$26.40 per year for each additional family above the single family assumed in an individual flat-rate account.	No change	81¢	Increased to 75% of watercharge
July 1, 1989	Increased from \$26.40 to \$41.86 per year for each additional family above the single family assumed in an individual flat-rate account. Remaining flat-rate charges increased by 7.8%.	Increased 7.8%	87¢	Increased to 88% of watercharge
Jan. 1, 1990	Increased 9%	Increased 9%	95¢	Increased to 112% of watercharge
July 1, 1991	Increased 6.4%	Increased 6.4%	\$1.01	Increased to 136% of watercharge
July 1, 1992	No change	No change	\$1.01	Increased to 159% of watercharge
July 1, 1993	No change	No change	\$1.01	No change
July 1, 1994	No change	No change	\$1.01	No change
July 1, 1995	Increased 5%	Increased 5%	\$1.06	No change
July 1, 1996	Increased 6.5%	Increased 6.5%	\$1.13	No change
July 1, 1997	Increased 6.5%	Increased 6.5%	\$1.20	No change
July 1, 1998	Increased 4%	Increased 4%	\$1.25	No change
July 1, 1999	Increased 4%	Increased 4%	\$1.30	No change
July 1, 2000	Increased 1%	Increased 1%	\$1.31	No change
July 1, 2001	Increased 3%	Increased 3%	\$1.35	No change
July 1, 2002	Increased 6.5%	Increased 6.5%	\$1.44	No change
July 1, 2003	Increased 5.5%	Increased 5.5%	\$1.52	No change
July 1, 2004	Increased 5.5%	Increased 5.5%	\$1.60	No change

(1) ccf: 100 cubic feet.

*Projected Rates.* Although the Board sets rates for an annual period, it may increase rates during such period, as required. As of June 2004, forecasted debt service, operating and other costs for the System indicated that the anticipated future rate increases to be set by the Board for water and sewer services combined were 5% per year in Fiscal Year 2006, 5.5% per year in Fiscal Year 2007 and 7.7% per year in Fiscal 2008 and Fiscal Year 2009. Prior to setting rates for an annual period, the Board publicly notices a rate increase and conducts public hearings on that rate increase.

*Basic Sewer Charge.* For all properties connected to the Sewer System, or legally required to be connected after receiving proper notice, there is a charge imposed equal to a fixed percentage of the property’s water charge. Since July 1, 1992, the sewer charge has remained at 159% of the water charge.

*Sewer Allowances.* Certain commercial customers use water in their products and thus return less waste to the Sewer System than their water consumption might indicate. Upon application and approval,

these commercial users are entitled to an effective rate reduction which reflects the proportion of water which is retained in their products or evaporated and not returned as sewage.

*Sewer-only Customer Charges.* In the case of premises which receive water service from alternative sources, a sewer charge is determined by DEP. For the current Fiscal Year, the sewer charge to such premises is equal to 159% of the dollar amount that would be charged for water usage if it were supplied by the Water System.

*Upstate Water Rates.* Rates for water supply service provided to municipalities and water districts located north of the City are established in accordance with the provisions of the Water Supply Act of 1905 (the “1905 Act”). The 1905 Act provides that such rates shall be based on the System’s actual cost of service. The sale of water and the rates and charges for these accounts are regulated by State law as well as by individual agreements between these communities and the City. Each contract provides for the metering of water sales to individual communities and the application of a specific charge per unit of metered volume. In most cases, per capita consumption in the upstate communities is less than that of customers within the City. In those instances where the community per capita consumption exceeds that of the City, the specified rate of charge for the excess is increased to match the rates and charges applied to retail service in the City. As of July 1, 2004, water taken from either the Croton or Catskill/Delaware systems is charged at a rate of \$591.21 per million gallons for daily per capita amounts not in excess of daily per capita consumption within the City.

*Comparative Charges.* The following table presents comparative annual water and sewer charges in 24 large cities based upon a survey conducted by Black & Veatch. Using a ranking system where 1 represents the lowest rates, the City’s ranking relative to these cities is: for Single-Family Residential—9, for Commercial—12, and for Industrial—17.

**Comparative Annual Water and Sewer User Charges<sup>(1)(2)(3)</sup>**

Single Family Residential		Commercial		Industrial	
<u>City</u>	<u>Annual Charge</u>	<u>City</u>	<u>Annual Charge</u>	<u>City</u>	<u>Annual Charge</u>
Chicago <sup>(2)</sup> . . . . .	\$ 229	Chicago . . . . .	\$ 3,138	Indianapolis . . . . .	\$ 285,854
Newark . . . . .	372	Dallas . . . . .	3,386	Dallas . . . . .	287,353
St. Louis . . . . .	416	St. Louis . . . . .	3,591	St. Louis . . . . .	288,777
Milwaukee . . . . .	476	Newark . . . . .	3,721	Chicago . . . . .	313,777
Indianapolis . . . . .	481	Indianapolis . . . . .	3,722	Milwaukee . . . . .	336,669
Baltimore . . . . .	484	Milwaukee . . . . .	4,157	Newark . . . . .	339,286
Detroit . . . . .	503	Baltimore . . . . .	4,160	Detroit . . . . .	340,530
San Antonio . . . . .	525	Detroit . . . . .	4,522	Baltimore . . . . .	365,020
<b>New York</b> . . . . .	<b>526</b>	San Antonio . . . . .	4,627	Philadelphia . . . . .	382,740
Dallas . . . . .	534	Columbus . . . . .	4,932	San Antonio . . . . .	383,897
Columbus . . . . .	552	Honolulu . . . . .	5,122	New Orleans . . . . .	451,854
San Jose . . . . .	562	<b>New York</b> . . . . .	<b>5,263</b>	Columbus . . . . .	459,908
Honolulu . . . . .	563	San Jose . . . . .	5,291	San Jose . . . . .	467,926
Houston . . . . .	590	Jacksonville . . . . .	5,381	Jacksonville . . . . .	486,881
Los Angeles . . . . .	592	New Orleans . . . . .	5,421	Honolulu . . . . .	510,044
Cleveland . . . . .	606	Los Angeles . . . . .	5,484	Los Angeles . . . . .	525,590
Jacksonville . . . . .	631	Houston . . . . .	6,279	<b>New York</b> . . . . .	<b>526,310</b>
New Orleans . . . . .	639	Cleveland . . . . .	6,406	San Diego . . . . .	594,694
Washington, D.C. . . . .	664	San Diego . . . . .	6,410	Houston . . . . .	618,975
San Francisco . . . . .	874	Philadelphia . . . . .	6,426	Cleveland . . . . .	644,347
Boston . . . . .	925	Washington, D.C. . . . .	6,482	Washington, D.C. . . . .	646,231
Philadelphia . . . . .	926	Boston . . . . .	9,701	San Francisco . . . . .	987,785
San Diego . . . . .	930	San Francisco . . . . .	10,099	Boston . . . . .	1,037,636
Atlanta . . . . .	1,082	Atlanta . . . . .	11,899	Atlanta . . . . .	1,201,752
<b>Average</b> . . . . .	<b>\$ 612</b>	<b>Average</b> . . . . .	<b>\$ 5,651</b>	<b>Average</b> . . . . .	<b>\$ 520,160</b>

- (1) User Charges are based upon information provided by the identified cities and standardized assumptions regarding water consumption, wastewater discharge, and other factors. Actual charges in each city will vary in accordance with local usage patterns. Some cities bill for sewer use on the basis of winter water consumption which could affect sewer billings if a customer’s use was not uniform throughout the year.
- (2) In addition to the water and sewer user charge, a single family residence with a market value of \$100,000 pays \$158 per year in property taxes to the Metropolitan Water Reclamation District of Greater Chicago (March 2004).
- (3) Charges for all cities reflect rate schedules in effect in March 2004.

## **Accounts, Billing and Collection**

The Bureau of Customer Services of DEP renders bills to customers of the System and collects payments of such bills. This bureau installs and reads meters, verifies meter accuracy, and maintains current information for those customers on the flat-rate system of billing described below.

The System has approximately 824,000 water and sewer accounts, nearly all of which are for water and sewer service. Approximately 81% of the System's water and sewer customers are solely residential. The remainder are primarily commercial and industrial users, with industrial users accounting for only a small portion of water and sewer usage.

Approximately 72,000 accounts, representing 9% of total accounts, are billed annually through the flat-rate system. These accounts are charged for water either on a per unit charge or through a computation which incorporates, among other factors, the width of the front of the building ("frontage"), the number of stories, the number of dwelling units, and the number of water-using fixtures (such as bathtubs, showers and toilets) in the building. The frontage rate is computed when the building is first constructed, and amended upon notice from the City Department of Buildings ("DOB") of building alterations or when a DEP inspector determines that the basis for charges is incorrect. Flat-rate annual bills are normally sent to customers prior to the start of each Fiscal Year and are due at the end of the first month of the Fiscal Year.

Approximately 752,000 accounts, representing 91% of total accounts, are billed on a metered basis. Meters are read and billed on a quarterly basis except meters for some larger accounts which are read and billed more frequently. Most meter readings are captured electronically through the use of hand-held computers and a universal probe. Data from meter readings are relayed to computers in field offices and transmitted to a centralized computer billing system on a daily basis. Some older meters, however, must be read manually. Metered accounts are billed quarterly and bills are sent out regularly throughout the year. DEP is now testing the use of water meters that can report consumption via telephone lines transmitting data to the billing system. Unlike flat-rate charges which were commonly paid through mortgage escrow accounts, metered charges are billed directly to customers which, among other factors, has required DEP to handle a substantially higher volume of customer account inquiries. Commercial accounts are required by the Board and the City to have meters installed for all water services. Substantially all of these accounts are in compliance with this requirement.

Since 1988, the basis for service charges for residential properties has been in a continuous process of transition from a frontage or flat-rate basis of annual billing to a meter-based billing system which relies on the actual measurement of usage. The Universal Metering program is designed to improve water conservation, water supply system management, and rate equity. The City has issued contracts for the installation of meters for the remaining unmetered accounts and is testing and replacing meters where necessary. Approximately 95% of all water and sewer accounts have meters installed. Since July 2000, unmetered properties which have not taken steps to install a meter have been required to pay a surcharge doubling their annual water and sewer charge. A surcharge was levied on approximately 14,400 accounts in their May 2004 bills.

Revenues from newly metered accounts may increase or decrease somewhat depending on how closely the flat-rate billing factors previously used compare to actual metered consumption for these accounts. Based upon recent experience, a one-time decrease in collections will occur for each account as it is metered due to the transition from billing in advance under flat rates to billing after consumption occurs. The one-time effect is taken into account in the forecasted revenues of the System.

Billing based on actual usage has affected the level of charges to certain large multiple-family residential buildings, in particular, those buildings with above-average population density and those with improperly maintained plumbing fixtures. The result is often a significant increase in charges to such buildings. In response to the needs of this segment of the customer base, the Board has adopted a transitional program whereby owners of multiple-family buildings that have had meters installed under the Universal Metering Program will continue to be billed on a flat-rate basis during the transition period.

The transitional program allows owners time to review their water usage, educate tenants regarding conservation, repair leaky plumbing, and install low-flow fixtures in order to reduce consumption and charges. There are approximately 32,150 accounts in the transitional program.

On May 11, 1993, the Board adopted a program that provides for a cap on the per-unit charge on multiple-family dwellings. The cap is set at approximately 150% of the average per-family unit charge. In order to be eligible for this program, building owners must submit to a water audit by DEP and take measures to eliminate leakage and waste.

On May 3, 2001, the Board adopted its Conservation Program for Multiple Family Residential Buildings which replaces the existing transitional program and meter billing cap program referred to above for residential buildings consisting of six or more dwelling units. It provides that owners of such buildings who replace or have replaced at least 70% of the toilet, sink and showerhead fixtures in such buildings with low-flow fixtures may elect to be billed on the basis of metered consumption or a fixed charge per dwelling unit per year. The program became effective July 1, 2001. To date, 402 applications for the program have been approved. The program is designed to be revenue neutral.

Certain institutions are exempt under State law from the payment of all or a portion of their water and sewer charges depending upon usage. These institutions include religious, certain educational and other charitable institutions as well as homes for the aged, hospitals and other non-profit or charitable corporations. For Fiscal Year 2005, metered accounts of such institutions which would be charged less than \$15,538 per year for water service are fully exempt from water and sewer charges, with a 50% exemption for those accounts ranging from \$15,538 to \$31,073 in annual water charges. There are approximately 4,000 accounts which are entirely or partially exempt from water and sewer charges.

DEP manages its account and billing information through its Customer Information System ("CIS"), which incorporates both frontage and metered accounts. DEP has identified weaknesses in the ability of the CIS to identify and report account errors and corrections on a comparable basis over time. In addition, DEP continues to issue a high percentage of estimated bills and continues to have difficulty in verifying the accuracy of a significant proportion of its overall receivable balances. DEP is working to reduce estimated bills and correct billing inaccuracies, which requires both computer analyses and an account-by-account review.

The Board and DEP have undertaken initiatives to enhance the collection of water and sewer billings. These initiatives include establishing a delinquent accounts unit for small to mid-size customers, outsourcing selected delinquency notification and collection functions to reputable collection or credit organizations, and hiring a consultant to assist in analyzing and improving collection of the accounts receivable balance. In addition, in 1999, the Board adopted a regulation authorizing DEP to terminate water and sewer services to customers because of nonpayment of assessed charges. Subject to certain notice requirements, service may be terminated if at least one delinquent charge has remained open and unpaid for at least two years, in the case of non-residential accounts and residential accounts with six or more units, or three years, in the case of residential accounts with one to five units. In May 2002, the Board approved modifications to the regulation to authorize the termination of service, subject to notice requirements, if at least one delinquent charge of at least \$1,000 has remained open and unpaid for at least one year or at least one delinquent charge of at least \$10,000 has remained open and unpaid for 90 days. The Commissioner of Finance of the City has also been authorized by the City Council in conjunction with the sale of tax liens to sell liens on behalf of the Board securing unpaid water and sewer charges. Such authorization runs through March 1, 2006.

## THE SYSTEM

### Overview

DEP supplies water and sewer service to the Boroughs of the Bronx, Brooklyn, Manhattan, Queens, Staten Island, an area of over 300 square miles, and serves over eight million people. The City is also required by State law to sell water in counties where its water supply facilities are located and where it currently provides water to an additional approximately one million people. The Water System provides an average of approximately 1,250 mgd of water. Water consumption has decreased since 1990 when an average of approximately 1,500 mgd was provided by the Water System. The amount of water that can be safely drawn from a watershed during the worst period in the drought of record is the “Dependable Yield.” DEP has determined that the System could have furnished an average of 1,290 mgd during the drought of record in the mid-1960s. During periods of normal rainfall, watersheds supply more than the Dependable Yield. The Sewer System collects and treats an average of approximately 1,200 mgd of sewage during dry weather. Sewer service is provided to virtually the entire City, except for significant parts of the Borough of Staten Island, the Borough of Queens communities of Breezy Point and Douglaston, and the Borough of Brooklyn community of Seagate. Sewer service is also provided to certain upstate communities in System watershed areas. According to Metcalf & Eddy, the System is in adequate condition (the highest rating category; See “APPENDIX A—LETTER OF METCALF & EDDY, CONSULTING ENGINEERS.”)

In recent years, DEP has taken a number of steps to enhance and augment its security arrangements to protect the System, including water supply structures and facilities. These steps include, among others, increasing the size of the DEP police force to approximately 200 officers; obtaining legislation authorizing the DEP police to function as police officers within the City, as well as in the upstate watersheds; purchasing additional police vehicles and surveillance equipment; and further securing facilities through additional locks, fences and other physical barriers to prevent access by unauthorized persons. In addition, DEP has been consulting with other governmental agencies, including the Federal Bureau of Investigation and the U.S. Army Corps of Engineers, on longer-term plans to modernize and improve security systems. In response to the attacks on the World Trade Center, DEP, in concert with law enforcement authorities, immediately implemented certain further measures to protect the System. These include, among others, increased frequency of patrols, restricting vehicular access to certain facilities, and more frequent monitoring of the water supply for contaminants. Increased security requirements have resulted in additional labor costs and related expenses in the System.

### The Water System

#### *History*

Early Manhattan settlers obtained water for domestic purposes from shallow privately owned wells. In 1677 the first public well was dug in front of the old fort at Bowling Green. In 1776, when the population reached approximately 22,000, a reservoir was constructed on the east side of Broadway between Pearl and White Streets. Water pumped from wells sunk near the Collect Pond, east of the reservoir, and from the pond itself, was distributed through hollow logs laid in the principal streets. In 1800 the Manhattan Company (now JPMorgan Chase) sank a well at Reade and Centre Streets, pumped water into a reservoir on Chambers Street and distributed it through wooden mains to a portion of the community. In 1830 a tank for fire protection was constructed by the City at 13th Street and Broadway and was filled from a well. The water was distributed through two 12-inch cast iron pipes. As the population of the City increased, the well water became polluted and supply was insufficient. The supply was supplemented by cisterns and water drawn from a few springs in upper Manhattan.

After exploring alternatives for increasing supply, the City decided to impound water from the Croton River, in what is now Westchester County, and to build an aqueduct to carry water from the Old Croton Reservoir to the City. This aqueduct, known today as the Old Croton Aqueduct, had a capacity of about 90 million gallons per day (mgd) and was placed in service in 1842. The distribution reservoirs were located in Manhattan at 42nd Street (discontinued in 1890) and in Central Park south of 86th Street (discontinued in 1925). New reservoirs were constructed to increase supply: Boyds Corner in 1873 and



Middle Branch in 1878. In 1883 a commission was formed to build a second aqueduct from the Croton watershed as well as additional storage reservoirs. This aqueduct, known as the New Croton Aqueduct, was under construction from 1885 to 1893 and was placed in service in 1890, while still under construction.

Since 1842, there have been no significant interruptions of service.

In 1905 the Board of Water Supply was created by the State Legislature. Pursuant to the 1905 Act, the City may develop areas of the Catskill Mountains, located in the Hudson River Basin, and portions of the Delaware River Basin located to the west of the Catskill Mountains for water supply purposes. In return for these development rights, the 1905 Act requires the City to furnish, upon request, supplies of fresh water to municipalities and water districts in eight northern counties in which City water supply facilities and watersheds are located. The City's obligations under the 1905 Act in this respect have now passed to the Board. The 1905 Act also governs the rates that may be levied for such water. An eligible municipality or district may draw water based on a formula computed as the local population multiplied by the daily per capita consumption in the City. The City is currently engaged in a long-term project to update and modernize various water supply agreements governing the furnishing of water to such municipalities and water districts.

After careful study, the City decided to develop the Catskill region as an additional water source. The Board of Water Supply proceeded to plan and construct facilities to impound the waters of the Esopus Creek, one of the four watersheds in the Catskills, and to deliver the water throughout the City. This project, to develop what is known as the Catskill System, included the Ashokan Reservoir and the Catskill Aqueduct and was completed in 1915. It was subsequently turned over to the City's Department of Water Supply, Gas and Electricity for operation and maintenance. The remaining development of the Catskill System, involving the construction of the Schoharie Reservoir and Shandaken Tunnel, was completed in 1928.

In 1927 the Board of Water Supply submitted a plan to the Board of Estimate and Apportionment for the development of the upper portion of the Rondout watershed and tributaries of the Delaware River within the State of New York. This project was approved in 1928. Work was subsequently delayed by an action brought by the State of New Jersey in the Supreme Court of the United States to enjoin the City and State of New York from using the waters of any Delaware River tributary. In May 1931 the Supreme Court of the United States upheld the right of the City to augment its water supply from the headwaters of the Delaware River. Construction of the Delaware System was begun in March 1937. The Delaware System was placed in service in stages: The Delaware Aqueduct was completed in 1944, Neversink Reservoir in 1950, Rondout Reservoir in 1951, Pepacton Reservoir in 1954 and Cannonsville Reservoir in 1967.

Water for the System is derived from three upstate reservoir systems (the Croton, Catskill and Delaware Systems) and a system of wells in Queens that were acquired as part of the City's acquisition of the Jamaica Water Supply Company ("Jamaica Water"). The three upstate water collection systems include 18 reservoirs and three controlled lakes with a total storage capacity of approximately 550 billion gallons. They were designed and built with various interconnections to increase flexibility by permitting exchange of water from one system to another. This feature mitigates localized droughts and takes advantage of excess water in any of the three watersheds.

The Water System is currently furnishing water to users in portions of four of the eight eligible northern counties. The Water System provides approximately 85% of the water used in Westchester County and approximately 7.5% of the water used in Putnam, Orange and Ulster Counties.

Approximately 95% of the total water supply is delivered to buildings by gravity. Only about 5% of the water is regularly pumped by DEP to maintain the desired pressure. As a result, operating costs are relatively insensitive to fluctuations in the cost of power. When drought conditions exist, additional pumping is required.

#### *Water Collection and Distribution*

The three main reservoir systems are the Croton, Catskill and Delaware Systems. See "New York City Water Supply System" map in Appendix G. In addition, approximately 1% of the City's daily water supply is provided by wells in Queens.

The following tables set forth the capacities and original in-service dates of the System's collecting and balancing reservoirs and distribution facilities based on the City records.

### Collecting Reservoirs

<u>Name</u>	<u>Available Capacity(1) (Billion Gallons)</u>	<u>Original In-Service Date</u>
<b>Croton</b>		
New Croton.....	19.0	1905
Croton Falls Main.....	14.2	1911
Cross River.....	10.3	1908
West Branch.....	10.1	1895
Titicus.....	7.2	1893
Amawalk.....	6.7	1897
East Branch.....	5.2	1891
Muscot.....	4.9	1905
Bog Brook.....	4.4	1892
Middle Branch.....	4.0	1878
Boys Corner.....	1.7	1873
Croton Falls Diverting.....	<u>0.9</u>	1911
Total.....	88.6	
<b>Catskill</b>		
Ashokan.....	122.9	1915
Schoharie.....	<u>17.6</u>	1926
Total.....	140.5	
<b>Delaware</b>		
Pepacton.....	140.2	1955
Cannonsville.....	95.7	1964
Rondout.....	49.6	1950
Neversink.....	<u>34.9</u>	1954
Total.....	<u>320.4</u>	
Total Available Capacity.....	<u><u>547.5</u></u>	

(1) Capacity above minimum operating level.

## Balancing Reservoirs and Distribution Facilities

<u>Name</u>	<u>Storage Capacity (billion gallons)</u>	<u>Original In-Service Date</u>
<b>Balancing Reservoirs</b>		
Kensico .....	30.6	1915
Hillview .....	<u>0.9</u>	1915
Total Balancing Reservoirs.....	31.5	
<b>Distribution Facilities</b>		
Central Park .....	1.0	1862
Jerome Park .....	0.8	1905
Silver Lake (tanks) .....	<u>0.1</u>	1970
Total Distribution Facilities .....	<u>1.9</u>	
Total Storage Capacity .....	<u><u>33.4</u></u>	

The following table sets forth the Dependable Yield and storage capacity for each of the water supply systems.

### Water System Dependable Yield and Capacity

<u>System</u>	<u>Dependable Yield (mgd)</u>	<u>Storage Capacity(1) (billion gallons)</u>
Croton .....	240	86.6
Catskill.....	470	140.5
Delaware.....	580	320.4
Queens wells.....	<u>33</u>	<u>2.6</u>
Total.....	<u><u>1,323</u></u>	<u><u>550.1</u></u>

(1) Capacity above minimum operating level.

The Croton System normally provides approximately 10% of the City's daily water supply and can provide substantially more of the daily water supply during drought conditions. The Croton System consists of 12 reservoirs and three controlled lakes on the Croton River, its three branches and three other tributaries. The water in the Croton System flows from upstream reservoirs through natural streams to downstream reservoirs, terminating at the New Croton Reservoir. The watershed which supplies the Croton System has an area of 375 square miles. It lies almost entirely within the State, approximately 45 miles north of lower Manhattan, with a small portion in the State of Connecticut.

The Catskill System watersheds occupy sparsely populated areas in the central and eastern portions of the Catskill Mountains and normally provide approximately 40% of the City's daily water supply. Water in the Catskill System comes from the Esopus and Schoharie Creek watersheds, located approximately 100 miles north of lower Manhattan and 35 miles west of the Hudson River. The Catskill System is comprised of the Schoharie Reservoir (formed by the Gilboa Dam across Schoharie Creek) and Ashokan Reservoir (formed by the Olivebridge Dam across Esopus Creek) and the Catskill Aqueduct.

The Delaware System, located approximately 125 miles north of lower Manhattan, normally provides approximately 50% of the City's daily water supply. Three Delaware System reservoirs collect water from a sparsely populated region on the branches of the Delaware River: Cannonsville Reservoir (formed by the Cannonsville dam on the West Branch of the Delaware River); Pepacton Reservoir (formed by the Downsview Dam across the East Branch of the Delaware River); and Neversink Reservoir (formed by the Neversink Dam across the Neversink River, a tributary to the Delaware River).

Wells in Queens provide approximately 1% of the City's daily water supply. The wells could be used to provide more of the daily supply during drought conditions. Unlike the rest of the City's water supply, which is a surface and gravity-supplied system originating in a network of upstate reservoirs, well water is pumped from extensive underground aquifers. The acquisition of wells in Queens from Jamaica Water in 1996 represented the first new water supply source for the City since the 1960s when the Delaware surface water system initially came on line.

Current demand/flow projections show that if conservation programs, including metering, toilet replacement, hydrant locking, leak detection, and public information, remain effective there will be no immediate need for the City to find additional long-term water supply sources.

The System's water supply is transported through an extensive system of tunnels and aqueducts. See "New York City Water Tunnels" map in Appendix G. Croton System water is delivered from the New Croton Reservoir by the New Croton Aqueduct to the Jerome Park Reservoir in The Bronx. From Jerome Park Reservoir and from direct connections to the New Croton Aqueduct, trunk mains carry water to the service area. The Catskill and Delaware Aqueducts convey water from Ashokan Reservoir and Rondout Reservoir to Kensico Reservoir and then to Hillview Reservoir in Yonkers. Both Kensico and Hillview Reservoirs serve as balancing reservoirs. Water from the Catskill and Delaware Systems is mixed in the Kensico Reservoir, and is conveyed to Hillview Reservoir where water enters Tunnels 1, 2 and 3. Trunk mains carry water from tunnel shafts and from the distribution facilities (Jerome Park and Hillview Reservoirs and Silver Lake Tanks) to the service area.

DEP regularly assesses the condition and integrity of the System's tunnels and aqueducts to determine the extent and effect of water loss. In particular, DEP is focusing on an assessment of the condition of the Rondout-West Branch Tunnel, which comprises a portion of the Delaware Aqueduct. The Rondout-West Branch Tunnel carries water 45 miles from the Delaware System under the Hudson River and into West Branch Reservoir. It has a capacity of 900 mgd and normally contributes 50% of the City's water supply. It is unique in that it has the highest pressures and the highest velocities in the Water System. In addition, a portion of the tunnel crosses a fractured rock formation, which is potentially subject to greater stress than the deep rock tunnels located in the City. Since the early 1990s, DEP has monitored the condition of the Rondout-West Branch Tunnel. As a result of DEP's flow tests, visual observations and other analyses conducted over the last five years, it has been determined that between approximately 15 mgd and approximately 36 mgd of water is being lost from the tunnel and is surfacing in the form of springs or seeps in the area. This amounts to a loss of approximately 4% of the daily volume of water provided by the tunnel under peak flow conditions. DEP has initiated the engineering work to determine the nature and extent of repairs which may be necessary to remedy the water loss. DEP has also determined that the situation in the tunnel and amount of water loss is stable and that, in the opinion of the professional engineering firm retained by DEP in conjunction with that investigation, there is no immediate risk of failure of the tunnel. DEP intends to make the necessary repairs. The costs to perform such repairs could be substantial depending on the nature of the required repair. To perform the repair work, the tunnel may have to be shut down and de-watered. During any such period, it will be necessary for the City to increase reliance on its other water supplies, and to implement more stringent measures to encourage conservation and decrease demand. If it is necessary to shut down and de-water the tunnel, DEP believes that water service at normal volume could be provided for a period of two to four months depending upon time of year, rainfall, and reservoir storage levels, and approximately one billion gallons per day could be provided by other parts of the Water System for a longer period under normal rainfall conditions. However, under an extended shutdown of this tunnel, water quality in the remaining reservoirs could potentially suffer as storage volumes are drawn down. In general, the Delaware System continues to demonstrate a high degree of reliability after 55 years of continuous service. Nevertheless, DEP considers it prudent to conduct regular tunnel and aqueduct inspections and surveys to detect any problems that might arise so that corrective actions can be taken if needed.

*Tunnel 1.* From Hillview Reservoir, water from the Catskill and Delaware Systems is delivered into the City by a circular, cement-lined, pressurized, bedrock tunnel that narrows in diameter from 15 to 11 feet. Tunnel 1 is 18 miles in length and extends south from Hillview Reservoir through the West Bronx to Manhattan and Brooklyn. Tunnel 1 is 200 to 750 feet underground and thus avoids interference with

streets, buildings, subways, sewers, pipes and other underground infrastructure. These depths are necessary to ensure substantial rock covering necessary to withstand the bursting pressure of the water inside and to ensure watertightness. Tunnel 1 has a capacity of approximately 1,000 mgd. Shafts placed along the tunnel connect with surface mains which deliver water to the distribution system.

*Tunnel 2.* The second tunnel also delivers Catskill and Delaware System water from Hillview Reservoir. It is a circular, cement-lined, pressurized, bedrock tunnel, 200 to 800 feet below the street surface and 15 to 17 feet in diameter. Tunnel 2 extends south from Hillview Reservoir, east of Tunnel 1, through the Bronx, under the East River at Rikers Island, through Queens and Brooklyn, and connects with Tunnel 1 in Brooklyn. Tunnel 2 has a capacity of more than 1,000 mgd and is 20 miles in length. Shafts placed along the tunnel connect with surface mains which deliver water to the distribution system.

*Richmond Tunnel.* Connecting to Tunnel 2 in Brooklyn is the ten-foot diameter, five-mile long Richmond Tunnel, which was completed in 1970 and carries water 900 feet beneath Upper New York Bay to Staten Island. The Richmond Tunnel, the Richmond Distribution Chamber, the Richmond Aqueduct and the underground Silver Lake Tanks were designed to improve the water supply facilities of Staten Island. The underground storage tanks (among the world's largest) have a combined capacity of 100 million gallons and replaced the Silver Lake Reservoir (now Silver Lake).

*Tunnel 3.* A new water tunnel, Tunnel 3, connecting the reservoir system to the City is presently under construction to increase capacity to meet a growing demand in the eastern and southern areas of the City, permit inspection and rehabilitation of Tunnels 1 and 2, and provide water delivery alternatives to the City in the event of disruption in Tunnel 1 or 2. Tunnel 3 is being built in four stages. Stage I commenced operation in July 1998. It follows a 13-mile route which extends south from Hillview Reservoir in Yonkers under Central Park Reservoir in Manhattan, and east under the East River and Roosevelt Island to Long Island City in Queens. Stage II is currently under construction and is expected to be completed in 2012. It will extend from the end of Stage I to supply Queens, Brooklyn and the Richmond Tunnel and from the valve chamber at Central Park into lower Manhattan. Upon completion, and with the installation of additional surface mains, Stage II will enable the system to maintain full service even if Tunnel 1 or 2 was shut down. The Stage III project is now referred to as the Kensico-City Tunnel (the "Kensico Tunnel"). Stage IV is intended to deliver additional water to the eastern parts of the Bronx and Queens. It would extend southeast from the northern terminus of Stage I in the Bronx to Queens and then southwest to interconnect with the Queens portion of Stage II.

*Kensico-City Tunnel.* The Kensico-City Tunnel will extend from the Kensico Reservoir to the interconnecting chamber of Tunnel 3, Stage I, south of Hillview Reservoir. \$1.7 billion is included for the project in the CIP.

The water distribution system consists of a grid network of over 6,200 miles of pipe, as well as valves, fire hydrants, distribution facilities, gatehouses, pump stations, and maintenance and repair yards. Some pipe was installed before 1870 and approximately 6.5% is over 100 years old. Approximately 2,000 miles of pipe are unlined cast iron laid before 1930. Pipe laid between 1930 and 1969 is cement-lined cast iron and comprises about 2,300 miles of the distribution system. Pipe laid after 1970 is cement-lined ductile iron and comprises about 1,900 miles of the distribution system. The CIP provides for the programmatic replacement of water mains in accordance with certain established criteria. These criteria were reviewed and confirmed by the U.S. Army Corps of Engineers in its independent study of the City's distribution system completed in November 1988.

Various facilities provide storage to meet the hourly fluctuations in demand for water throughout the City, as well as any sudden increase in draft that might arise from fire or other emergencies. With the exception of some communities in the outlying areas of the City which may experience low pressure service during peak hours in summer months, the water distribution system provides generally excellent service.

#### *Drought Response Measures*

From time to time the Water System experiences drought conditions caused by significantly below-normal precipitation in the watershed areas. A Drought Watch (as defined herein) was declared in

late December 2001, a Drought Warning (as defined herein) was declared in late January 2002 and a Drought Emergency (Stage I) (as defined herein) was declared in March 2002. In November 2002, the City downgraded the Drought Emergency to a Drought Watch and in January 2003 the Drought Watch was lifted. As of July 19, 2004, the System's reservoirs contained approximately 91.1% of capacity. Normal levels at this time of year would be approximately 92.9% of capacity.

The Water System relies upon a surface water supply, and is sensitive to major fluctuations in precipitation. Throughout even the worst droughts, the Water System has continued to supply sufficient amounts of water to the City. To ensure adequate water supply during drought conditions, DEP, in conjunction with other City, State and interstate agencies, maintains a Drought Management Plan. The Drought Management Plan defines various drought phases that trigger specific management and operational action. Three defined phases are: "Drought Watch," "Drought Warning," and "Drought Emergency." A Drought Emergency is further subdivided in four stages based on the projected severity of the drought and provides increasingly stringent and restrictive measures.

A Drought Watch is declared when there is less than a 50% probability, based on the existing record since 1927, that either the Catskill or Delaware reservoir system will be filled by the following June 1. This phase initiates the pumping of water from the Croton System. In addition, during this phase a public awareness program begins and users, including upstate communities taking water from the System, are requested to initiate conservation measures. NYSDOH, NYSDEC, and the Delaware River Basin Commission (the "DRBC") are advised of the Water System's status, and discussions are held with City agencies concerning their prospective participation in the event of a declaration of a Drought Warning.

A Drought Warning is declared when there is less than a 33% probability that either the Catskill or Delaware reservoir system will fill by June 1. All previous efforts are continued or expanded and additional programs are initiated, including the coordination of specific water saving measures by other City agencies.

A Drought Emergency is declared when it becomes necessary to reduce consumption by imposing even more stringent measures. In addition to the imposition of restrictions, DEP may enhance existing System management and public awareness programs, expand its inspection force and perform additional leak and waste surveys in public and private buildings. DEP may also require communities outside of the City that are served by the System to adopt similar conservation measures. During several drought emergencies, DEP has operated the Chelsea Pump Station which can draw up to 100 mgd from the Hudson River. However, DEP has committed not to use the Chelsea Pump Station in its planning for future emergencies.

### *Governmental Regulation*

The System is subject to federal, State, interstate and municipal regulation. At the federal level regulatory jurisdiction is vested in USEPA; at the State level in NYSDEC and NYSDOH; at the interstate level in the DRBC and the Interstate Environmental Commission and at the municipal level in DEP, NYCDOH, DOB and the Department of Business Services and to a limited degree, in municipalities and districts located in eight counties north of the City. Water quality standards are enforced within the watershed areas north of the City through a network of overlapping governmental jurisdictions. Participating in that network, among others, are NYSDEC and NYSDOH, county, municipal and district police, engineers and inspectors; and City personnel from DEP. The various jurisdictions maintain physical security, take water samples, monitor the use of herbicides, insecticides and fertilizers, and generally oversee the physical condition of, activity on and the operation of water supply lands and facilities. Portions of the overall legislative and regulatory framework governing the watersheds may be found in the City's Administrative Code, Health Code and Water Supply Regulations. Regulatory enforcement within City limits is almost exclusively accomplished through City personnel. Provisions incorporating and augmenting the substance of the federal Safe Drinking Water Act ("SDWA"), related regulations and the Sanitary Code, are contained in the Health Code, Water Supply Regulations and the City's Building and Building Construction Codes. These provisions are enforced by personnel from DEP, NYCDOH and DOB.

*Croton Filtration.* Because of the quality of the System's water and the long periods of retention in the reservoirs, it has not been necessary to filter water from the System to reduce the bacterial content and the turbidity. The only treatment procedures routinely employed by DEP are screening, detention, disinfection, fluoridation, and the addition of caustic soda and phosphoric acid for corrosion control. Additions of copper sulfate for algae control and alum for turbidity control are made only when needed. This level of treatment proved to be more than sufficient to maintain water quality standards throughout the entire Water System. However, new water treatment standards led to a 1992 stipulation with NYSDOH which provided for the construction of a full scale water treatment facility to filter Croton System water. The stipulation has been superceded by a 1998 federal court consent decree (the "Croton Filter Consent Decree"). If the City fails to meet certain milestones set out in the Croton Filter Consent Decree it may be required to pay penalties to the State and federal governments.

In December 1998, after an extensive study of several alternative sites, DEP identified the Mosholu Golf Course in the Bronx as the City's preferred site for the full-scale water treatment facility to filter Croton System water. The selected Mosholu Golf Course site lies within the boundaries of Van Cortlandt Park, a mapped public park. Actions brought against the City resulted in a February 2001 New York Court of Appeals decision that the construction and operation of a Croton water treatment facility at this site would constitute an alienation of parkland by the City, requiring State legislative approval. Following the Court of Appeals decision, USEPA, the State and the City negotiated a supplement to the Croton Filter Consent Decree (the "First Supplement") which requires the City to simultaneously prepare preliminary designs for a Croton filtration facility at two alternate sites: a site in Bronx County, located alongside the Harlem River in the vicinity of Fordham Road, and a site in Westchester County, located on City-owned property in the Town of Mount Pleasant. The First Supplement sets forth a series of milestones, with associated stipulated penalties. The total estimated cost of the Westchester County facility, the more expensive facility, is approximately \$1.5 billion, with estimated costs of approximately \$1.5 billion provided for in the CIP. The First Supplement further required the City to identify its preferred site by April 30, 2003.

On April 30, 2003, the City asked the United States Attorney for the Southern District of New York for a 30-day extension of the April 30, 2003 milestone because of further developments including the City's introduction of alienation legislation to the State legislature to allow the Croton facility to be built at the Mosholu Golf Course site. The City requested an additional 30-day extension on May 30, 2003. On June 3, 2003 and June 5, 2003, the United States and the State, respectively, demanded the payment of penalties by the City for failure to meet the April 30, 2003 milestone for the selection of a preferred site. On June 20, 2003, the State legislature passed the proposed alienation legislation and on July 22, 2003 the governor signed the bill into law. The authorization to construct, install, operate and maintain a Croton filtration facility at the Mosholu Golf Course site is subject to certain conditions including that the City enter into a Memorandum of Understanding with the leaders of the State legislature, for ratification by the City Council. The Memorandum of Understanding will provide for the identification of projects for the development of other parklands in the Bronx, the provision of approximately \$200 million for such projects (which is expected to be financed by the issuance of bonds by the Authority) and the completion by the City of a supplemental environmental impact statement on the proposed facility at the Mosholu Golf Course site. On June 30, 2004, DEP issued a final supplemental environmental impact statement which identified the Mosholu Golf Course site as the preferred site. The City is close to finalizing negotiations with USEPA and the State the terms of a second supplement to the Croton Filter Consent Decree (the "Second Supplement") that will supersede the First Supplement. The Second Supplement will provide for consideration of siting the Croton filtration facility at the three potential sites, including the Harlem River site (by 2012), the Westchester County site (by 2010) and the Mosholu Golf Course site (by 2011). As part of those discussions, the parties are also negotiating what penalty will be paid by the City for having missed the April 30, 2003 milestone.

In the second quarter of 2003, the Croton System exceeded the water quality standard for haloacetic acids, a disinfection by-product regulated by USEPA. On June 19, 2003, USEPA issued an administrative order requiring DEP to inform consumers about the violation and to propose feasible and cost effective measures to reduce haloacetic acid levels until the Croton filtration plant is completed. DEP distributed

the required public notice to Croton System consumers on July 15, 2003 and submitted the required evaluation of potential interim measures to USEPA and NYSDOH on August 4, 2003. DEP is conducting additional analyses to determine which measures will be most efficacious and cost-effective.

*Watershed Protection/Catskill, Delaware Filtration.* Pursuant to the SDWA, USEPA has promulgated nationwide drinking water regulations which specify the maximum level of harmful contaminants allowed in drinking water and which govern the construction, operation, and maintenance of the System. USEPA has also promulgated filtration treatment regulations, known as the federal Surface Water Treatment Rule (“SWTR”), that prescribe guidelines concerning studies to be performed, programs to be implemented, timetables to be met and any other actions necessary to insure compliance with the regulations’ terms. Enforcement of SDWA and its related regulations, except for the SWTR, was delegated by USEPA to the State. USEPA has delegated primary enforcement responsibility for the SWTR to NYSDOH for all systems in the State other than the Catskill and Delaware Systems. With respect to the Catskill and Delaware systems, the City believes that under the SWTR promulgated by the USEPA it will continue to be able to meet the criteria for non-filtered supplies.

On January 21, 1997, the City and the State executed a Memorandum of Agreement with the communities in the Catskill, Delaware and Croton watersheds, USEPA and several environmental groups (the “Watershed Memorandum of Agreement”). The Watershed Memorandum of Agreement supplemented the City’s existing watershed protection program with approximately \$400 million in additional funding. This funding, at least \$290 million of which is expected to be provided through the issuance of Authority bonds, consists of \$350 million for economic-environmental partnership programs with upstate communities which include a water quality investment program, a regional economic development fund and a regional advisory forum for water quality initiatives and watershed concerns. As provided under the Watershed Memorandum of Agreement, the State has issued a land acquisition permit to the City to acquire water quality sensitive land in the watershed and has approved the City’s revised rules and regulations governing certain aspects of land use in the watershed. The State also promulgated the same regulations under state law procedures in July 1998.

Since 1993, USEPA has issued filtration avoidance determinations (“FADs”) pursuant to which the City is not required to filter water from the Catskill and Delaware Systems. If the City were to have to filter water from the Catskill and Delaware Systems, current estimates of the construction costs to provide for such filtration are approximately \$3 billion. On November 26, 2002, USEPA announced the issuance of a new FAD which supersedes previous determinations and will remain in effect until further determination is made, now scheduled for April 2007 (the “2002 FAD”). The 2002 FAD requires that the City take certain actions over the next five years to protect the Catskill and Delaware water supplies and justify the continuation of filtration avoidance. These actions include the continuation and enhancement of certain environmental and economic partnership programs established under the Watershed Memorandum of Agreement, and the creation of new programs. The 2002 FAD requires, among other things, continuation of the program for repair and rehabilitation of certain watershed septic systems, construction of an ultraviolet treatment facility (the “UV facility”) to be operable by August 2009, development of a new Community Wastewater Management Program, the continuation of the Stormwater Retrofit Program, and continuation of the Stream Management Program. Approximately \$588 million has been included in the CIP for the UV facility. In addition, the 2002 FAD requires upgrades to approximately 25 non-City owned wastewater treatment plants by varying dates, the latest of which is November 15, 2004 and the connection of certain other existing plants to new plants to be constructed under the New Infrastructure Program by the first half of 2005. Capital costs associated with the 2002 FAD, excluding the UV facility, are estimated to be approximately \$218 million, and are included in the CIP.

In addition, the 2002 FAD continues the requirement that the City solicit property from owners of 355,050 acres of land in the watershed and actually acquire (with certain limited exceptions) title to or conservation easements on any land used to satisfy the solicitation goal where the owner accepts the City’s purchase price. In particular, the City must continue to aggressively pursue additional land acquisition in the Kensico Reservoir basin. To be eligible for acquisition, land must satisfy specified natural features and minimum acreage criteria. The Watershed Memorandum of Agreement required the City to set aside \$250 million for land acquisition, with an option to increase the funding by up to \$50 million



("Supplemental Land Funds"). The 2002 FAD requires the City to confer with USEPA and NYSDOH biannually commencing in January 2004, on the need for allocating all or a portion of the Supplemental Land Funds. As required, the City met with USEPA and NYSDOH in January 2004, and as a result USEPA has directed the City to allocate an additional \$7 million to its watershed land acquisition program, for the purpose of acquiring agricultural easements on farm properties in the watershed. The City will confer with USEPA and NYSDOH again in January 2006, regarding the need to supplement the acquisition program with the remaining \$43 million in Supplemental Land Funds. Pursuant to the Watershed Memorandum of Agreement, in 1997 NYSDEC issued a land acquisition permit to the City that had a term of 10 years with an option to extend for five years. The 2002 FAD requires the exercise of the option for the five years which would extend the permit to 2012. As of June 15, 2004, the City has either acquired, or has contracts or option agreements to acquire, title to or conservation easements on approximately 56,000 acres of land in the Catskill and Delaware watersheds with an aggregate value of approximately \$138 million.

*USEPA Investigation/Regulations.* On August 23, 2001, DEP resolved a criminal investigation by USEPA and the United States Attorney's Office in the Southern District of New York concerning the presence of mercury, PCBs and lead at several DEP facilities in the watershed. Under the resolution, DEP pled guilty to a felony violation of the federal Clean Water Act and a misdemeanor violation of the federal Toxic Substances Control Act and paid a fine of \$50,000. DEP also accepted oversight of elements of the water supply and sewer system by a Court-appointed monitor and has been placed on probation, both for a term of three years, extendable by the Court for up to two additional years. On May 19, 2004, with the consent of DEP, the Court extended probation and the appointment of the monitor for one year, through August 29, 2005. The monitor delivers regular reports on DEP's compliance with applicable standards. The Clean Water Act violation is based on the discharge of water containing low levels of mercury from a DEP facility in Sullivan County. The Toxic Substances Control Act violation is based on DEP's use of flow control equipment which contains PCBs in other than a totally enclosed manner at a facility in Westchester County. The conditions which gave rise to the violations have not had any detectable impact on water quality and the City's water supply has been, and continues to be, safe and wholesome. The federal government, NYSDOH and DEP have all indicated that the water supply remains safe with respect to mercury, PCBs and lead. DEP has been and continues to be engaged in programs to remediate mercury, PCBs, lead, and other constituents of concern from the affected facilities. DEP's operation and management of the Water System will not materially change as a result of the plea. From time to time, the United States Attorney's Office has requested additional information from DEP concerning the System, and has issued subpoenas for additional documents. DEP is cooperating with that office and is providing information and documents in response to such requests and subpoenas.

On August 14, 2003, the City (along with major portions of the Northeastern United States) experienced a massive power blackout. With the loss of electrical power during the blackout, DEP's North River and Red Hook water pollution control plants were unable to treat wastewater being conveyed to those facilities, resulting in the outflow of approximately 490 gallons of untreated wastewater into the waters of New York Harbor. The United States Attorney's Office is investigating this matter and, beginning in November 2003, has issued a series of subpoenas to DEP for information and documents pertaining to back-up and emergency power systems at the North River and Red Hook plants, and has questioned certain DEP employees. DEP is cooperating with this investigation and is providing information and documents in response to such subpoenas.

DEP has historically monitored key locations in its distribution system for over 40 individual water quality parameters, including lead. Through 1998 DEP data indicated that lead was absent from both the water supply and distribution systems. Beginning in January 1999 tap water samples revealed that, although some lead was present, the City was in compliance with State lead standards. Recent USEPA regulations require water suppliers to monitor for lead and copper that may have leached into the water from service lines or interior building plumbing. To minimize this occurrence the City began the addition of corrosion control chemicals to the Water System. This addition promotes the formation of a protective coating inside pipes and plumbing thereby reducing the leaching of metals.

The System has six laboratories that monitor water quality, employing approximately 250 microbiologists, engineers, chemists, hydrologists and limnologists. Over 65,000 samples per year are collected and 800,000 analyses are performed annually. Routine checks are made for more than 60 different substances, including heavy metals and trace organics. The monitoring program meets or exceeds federal and State requirements and has the capability to meet potentially more stringent requirements.

*Hillview Reservoir.* In March 1996, DEP entered into an Administrative Order with NYSDOH which required, among other things, that the City install or construct a cover for the Hillview Reservoir to reduce the possibility of E. coli bacteria entering the Water System. The Administrative Order was modified in July 1997 and March 1999. As modified, it requires that the City complete installation or construction of the selected cover for Hillview Reservoir by December 31, 2005.

Over the past three years, DEP has conducted studies and has held discussions with NYSDOH to evaluate other strategies, including more aggressive waterfowl control, to protect the Hillview Reservoir. Although DEP believes that certain other strategies hold promise, DEP was advised by NYSDOH, in August 2001, that the Administrative Order will not be modified in this respect and that the City must cover Hillview Reservoir in accordance with the terms of the Order. DEP has renewed discussions with NYSDOH on modifications to the Administrative Order based on its overall water supply plan and possible scheduling conflicts with other water supply projects. While these discussions are proceeding, NYSDOH is requiring DEP to pay stipulated penalties into an escrow account as set forth in the Administrative Order. The estimated cost of a Hillview Reservoir cover is approximately \$400 million which is not included in the CIP. However, DEP has provided \$234 million in the CIP to upgrade Hillview Reservoir facilities to implement certain alternative strategies including aggressive water fowl control, increased security and other facility modifications.

*Consumer Confidence Report.* The SDWA requires that utilities prepare and distribute to their consumers a brief annual water quality report, referred to as the Consumer Confidence Report (the "CCR"). The CCR covering calendar year 2003, the most recent such report, noted that in May and December 2003, the Croton System violated the maximum containment level for haloacetic acids. The Croton filtration project is intended, among other things, to address the issue of haloacetic acid contamination in Croton System water. While the CCR further noted that the City's source water contains virtually no lead, tap water may contain lead due to releases of lead from internal household plumbing and fixtures.

*Delaware System.* The conditions under which the System's Pepacton, Neversink and Cannonsville Reservoirs may be operated are set forth under the terms of a 1954 decree of the Supreme Court of the United States (the "1954 Decree"). It allows the System to divert 800 mgd of water from the Delaware River Basin for use by the Water System. At the same time, the System is required to release, from the three reservoirs into the tributaries of the Delaware River, quantities of water sufficient to maintain flows of 1,750 cubic feet per second in the main branch of the Delaware River at Montague, New Jersey. In addition, the System must meet the State-mandated conservation releases and flow requirements in various tributaries contained in numerous deeds and condemnation decrees. Enforcement of the 1954 Decree is under the jurisdiction of a River Master appointed by the Supreme Court of the United States. The City and State, and the governments of New Jersey, Pennsylvania and Delaware are named parties to the 1954 Decree.

The DRBC was created in 1961 as a result of the Delaware River Basin Compact among the federal government, the State, and the states of New Jersey, Pennsylvania and Delaware. It has jurisdiction over water resources and is responsible for development, planning and coordination and protection of the interstate areas served by the Delaware River and its tributaries. Although not a participant in the Delaware River Basin Compact, the City functions as an advisor to the State in DRBC proceedings and assumes a major role both as a party to the 1954 Decree and as the owner and operator of the three largest reservoirs subject to DRBC jurisdiction.

In 1982, as a result of conditions during the drought of record in the mid-1960s, the drought of 1981, and the inability of the System's Pepacton, Neversink and Cannonsville Reservoirs to satisfy all of the requirements of the 1954 Decree during those drought periods, a set of Interstate Water Management

Recommendations (the “Good Faith Agreement”) was submitted to DRBC. Executed by all of the parties to the 1954 Decree, the Good Faith Agreement sets forth a series of recommendations, including various levels of diversions and releases necessary during normal hydrological conditions and during periods of drought. The Good Faith Agreement was also followed during the 1985, 1989 and 2002 droughts.

For more information regarding litigation relating to the Water System, see “LITIGATION.”

## **The Sewer System**

The Sewer System is comprised of the sewage collection system and the water pollution control facilities. See “New York City Drainage Areas and Water Pollution Control Plants” map in Appendix G.

### *History*

Systematic collection of sewage and building of sewers began in the City as early as 1696. Major portions of the Sewer System in lower and central Manhattan were begun in the early 1830s and completed by 1870. The oldest sewer now in service was built in 1851. The oldest components of the Sewer System, located in Manhattan and Brooklyn, are constructed mostly of brick, clay and cement. The other Boroughs have newer sewers made primarily of vitreous clay and concrete. Historically, waste collection and disposal was a matter of local jurisdiction. Upon consolidation of the City in 1898, Presidents of the five Boroughs were given responsibility for sewage collection and disposal in their respective Boroughs. A Commissioner of Borough Works was established in each Borough for planning, constructing and administering its sewer system. This local responsibility for sewage collection existed until the mid-1960s.

Although water pollution control did not become a major issue until recent years, it has been a concern of local conservationists and public officials for over a century. The first water pollution control facility in the City was opened in 1886, when a small plant was constructed on Coney Island to protect the bathing beaches. In 1904, a Sanitary Commission was established and charged with developing a master plan for water pollution control in the City. Although the Sanitary Commission completed its task in 1910, water pollution control plant construction did not receive serious attention until 1929, when the City established a department to construct water pollution control facilities under the jurisdiction of the Department of Sanitation. In the 1930s this function was transferred to the Department of Public Works. In 1931, a plant construction program was begun to construct a system of water pollution control plants and associated facilities to control and treat all sewage produced within the City. The first of these plants, Coney Island, opened in 1935. Three more large plants, Wards Island, Tallmans Island and Bowery Bay, were placed in operation before the end of the 1930s. During the 1940s two additional plants, Jamaica and 26th Ward, were opened. The post-war years witnessed an intensified construction effort and, by 1967, 12 major treatment plants were in operation treating about 1,000 mgd at an average removal efficiency of about 65%. At that time most other urban areas were providing only about 35% removal efficiency.

The City Charter of 1963 consolidated the Borough sewer organizations into a City-wide department under the Department of Public Works. In 1968, various municipal services were consolidated into a single agency known as the Environmental Protection Administration, which included responsibility for sanitation and water and air quality resources. Within the Environmental Protection Administration, the Department of Water Resources had jurisdiction over the Bureaus of Water Supply and Water Pollution Control. These Bureaus were responsible for water supply and sewage collection and treatment. In 1977, water supply, sewage collection and treatment, and air quality monitoring responsibilities were combined into DEP.

### *Sewage Collection and Treatment*

The Sewer System’s plants treat approximately 1,200 mgd of dry-weather sewage, virtually all of the dry-weather sewage generated in the City. The Sewer System is divided into 14 drainage areas corresponding to the 14 water pollution control plants and includes over 6,600 miles of sewer pipes of varying size which are classified as one of three types: sanitary, storm or combined. Sanitary sewers

accommodate household and industrial waste. Storm sewers carry rainwater and surface water runoff. Combined sewers carry both types of waste. Approximately 70% of the City's sewers are of the combined type. In addition to the sewage pipes, the Sewer System includes catch basins and seepage basins to prevent flooding and sewer backups.

The Sewer System is comprised of a number of sewer facilities built to varying standards. Different materials and methods of construction were used resulting in different life cycles. Approximately 4,000 miles or two-thirds of the City's sewer pipe is made of vitreous clay. Significant mileage of sewer pipe is composed of other building materials including cement, reinforced concrete, iron and brick. Some pipe in the collection system was installed before 1870, and about 16.7% of all sewer pipe in the collection system is over 100 years old.

The facilities related to the treatment of sewage include water pollution control plants, a combined sewer overflow treatment plant, wastewater pump stations, laboratories, sludge dewatering facilities and inner-harbor vessels which transport sludge between facilities. Sludge is a by-product of the sewage treatment process. Sludge that is treated through the sewage treatment process (or "biosolids") is acceptable for land-based beneficial use.

Issues of both water supply volume and consequent sewage treatment volume are raised from time to time in connection with the System. Measures to increase the supply of water available to the System and to increase the sewage treatment capacity of the various water pollution control plants in the System are either being constructed under the CIP or are under continuing review for feasibility and cost effectiveness. However, the immediate approach to both the issues of supply and treatment capacity is conservation, through voluntary changes in user behavior, through education and the effect of actual use charges based on metered water usage, leak detection and repair and increased use of newly designed low-flow water use fixtures such as toilets.

The following table describes water pollution control plants currently in service.

### Water Pollution Control Facilities

<u>Plants in Service</u>	<u>Capacity (mgd)</u>	<u>Year of Completion</u>	<u>Completion of Upgrading to Full Secondary Treatment or Reconstruction</u>
Newtown Creek.....	310	1967	2007
Wards Island.....	275	1937	1979
Hunts Point.....	200	1952	1978
Bowery Bay.....	150	1939	1978
Owls Head.....	120	1952	1995
Coney Island.....	110	1935	1994
Jamaica.....	100	1943	1978
26th Ward(1).....	85	1944	1979
Tallmans Island.....	80	1939	1978
Port Richmond.....	60	1953	1979
Rockaway.....	45	1952	1978
Oakwood Beach.....	40	1956	1979
North River.....	170	1986	1991
Red Hook.....	60	1987	1987
Total System-wide Capacity.....	<u>1,805</u>		

(1) There is a storm-overflow retention facility at Spring Creek, which is connected to the 26th Ward Plant.

The Sewer System's water pollution control pump stations convey wastewater to the water pollution control plants. When gravity flow becomes uneconomical or not feasible for engineering reasons, pump

stations lift the flow so that it can again flow by gravity. In some locations, pump stations utilize pressure piping called force mains to direct the flow of wastewater to the plants. The CIP includes an ongoing program to reconstruct and refurbish pump stations.

Sewer regulators and tide gates control flow in the System. Recent inspections of the regulator system have found it to be structurally adequate, but many portions are in need of mechanical reconstruction. A detailed evaluation of the regulator and tide gate system has been completed and funds have been provided in the CIP for mechanical refurbishment of these facilities.

During periods of heavy rainfall a combination of stormwater and sewage bypasses treatment and is released into the City's waterways via combined sewer overflows. The combined sewer overflow abatement program provides for studies, design and construction of facilities to address this issue.

DEP has awarded contracts for the beneficial use of 100% of its biosolids which commenced in July 1998. These current contracts include: thermally drying the biosolids into fertilizer pellets at a facility located in the Bronx; chemical reaction pelletization in Arkansas; direct land application in Colorado and Virginia; and lime stabilization in Colorado and New Jersey.

### *Governmental Regulation*

Under the Clean Water Act, USEPA oversees compliance with federal environmental laws, regulations and guidelines concerning sewage. Included in that regulatory framework is the National Pollutant Discharge Elimination System ("NPDES") Permit Program and the issuance of water pollution control plant operating permits. As authorized by the Clean Water Act, administration of the permit program has been delegated to the State.

Pursuant to the Water Quality Act of 1987, as a condition for receipt of federal funds the State must establish a revolving fund to provide a source for loans to local entities for the construction of publicly-owned wastewater treatment facilities. Initial funding for a revolving fund program is provided from federal capitalization grants and state matching funds. The State has designated EFC to be the administrator of such funds.

*Full Secondary Treatment Requirements.* Thirteen of the System's 14 in-City water pollution control plants have been upgraded to meet the full secondary treatment requirements of the Clean Water Act. The remaining plant, Newtown Creek, is in the process of being upgraded to meet federal requirements.

*SPDES.* Over the past several years, NYSDEC has notified the City of alleged violations of the SPDES permits for the City's water pollution control plants as a result of corrective and preventive maintenance at a level below that which NYSDEC believes is required by the permits. These alleged violations have been settled through a series of administrative consent orders. In addition, DEP hired a consultant to gather relevant data to enable DEP to determine the appropriate level of corrective and preventive maintenance for its water pollution control plants. This study included a review of the practices of other utilities in connection with corrective and preventive maintenance. Based on this study, DEP has implemented pilot studies at various water pollution control plants in an attempt to change its practices and priorities relating to plant maintenance.

On July 18, 2002, NYSDEC publicly noticed a proposal to modify the existing SPDES permits for the 14 in-City water pollution control plants operated and maintained by DEP. The SPDES permits for these facilities were issued in 1988 and, although administratively renewed from time to time, have not been significantly changed since such date. NYSDEC's proposed modifications, if ultimately adopted, could increase costs for operating and maintaining the plants. On February 28, 2003, NYSDEC issued modified SPDES permits for all 14 plants. Although these permits address some of the concerns noted by DEP, the permits included effluent limits and requirements for nitrogen removal based on the 10 and 15 year target nitrogen waste load allocations set out in the Total Maximum Daily Load ("TMDL") for dissolved oxygen in Long Island Sound (see "—Harbor and Waterway Protection"). Among other things, DEP objected to the inclusion of such limits and requirements because they were inconsistent with the limits and requirements of the Administrative Consent Order (as defined below) entered into with NYSDEC governing nitrogen discharges from the Upper East River water pollution control plant and because they

would extend well beyond the 5-year life of the SPDES permits. DEP requested an adjudicatory hearing before an administrative law judge on the modified permits. In January 2004, the administrative law judge denied DEP's request for an adjudicatory hearing. However, the administrative law judge asked the parties to submit briefs addressing the inconsistencies between the permits and the Administrative Consent Order. Currently, DEP and NYSDEC are attempting to negotiate a consensual resolution of this matter (see “—Harbor and Waterway Protection”).

The System includes eight City-owned upstate water pollution control plants to prevent untreated sewage from being released into the watersheds. To enhance watershed protection, DEP completed upgrades to seven of these facilities. The CIP includes funds to upgrade the eighth facility. DEP, through the City's Law Department, takes legal action pursuant to the Federal Clean Water Act to compel certain owners and operators of non-City owned water pollution control plants in the watersheds to comply with SPDES permits. In addition, DEP, together with the City Law Department, takes legal action to ensure that new developments are appropriately designed to be environmentally protective, in accordance with the Clean Water Act.

Over the past several years, NYSDEC and DEP have resolved various alleged permit violations at the System's 14 in-City water pollution control plants by entering into “omnibus” consent orders. These administrative orders typically detail the alleged violations for a specified period of time and set forth remedial actions related to such violations. The most recent such consent order (the “Omnibus VI Consent Order”) covers alleged violations from January 1, 2000 through December 31, 2001, including alleged effluent, operating and bypass violations at a number of plants.

The City is also a party to litigation in which the petitioners seek to require the City to obtain a SPDES permit to operate the Shandaken Tunnel. See “Litigation.” On February 18, 2004, NYSDEC publicly noticed a draft SPDES permit for the Shandaken Tunnel which, among other items, contained provisions setting limits on flow, phosphorus, turbidity and temperature of water being discharged from the Shandaken Tunnel and requiring that the City take additional measures to reduce the amount of turbidity in water collected in the Schoharie Reservoir. The limits contained in the draft permit would have, in certain circumstances, impacted the City's ability to operate the Shandaken Tunnel, and the requirements for additional measures to reduce turbidity would have involved substantial expenditures which are only partially included in the CIP. As a result of comments from DEP, as well as from other parties, NYSDEC subsequently withdrew the draft permit. DEP is reviewing a revised draft to determine the extent of its impact on operation of the Shandaken Tunnel, and is engaged in discussions with NYSDEC to modify certain terms and conditions before the revised draft is publicly noticed for comment. If necessary, DEP will seek to have the revised draft permit modified through administrative hearings before NYSDEC.

*Combined Sewer Overflows.* The System is also required to develop programs to reduce pollution from combined sewer overflows and to eliminate excess infiltration and inflow into the Sewer System from ground and storm water. In June 1992, DEP entered into a consent order with the State (the “CSO Consent Order”) establishing various deadlines through 2006 for the construction of nine combined sewer overflow projects, which may include storage tanks. The CIP includes approximately \$682 million for such combined sewer overflow projects. Certain of the CSO Consent Order interim deadlines have not been met. Failure to meet certain milestones in the CSO Consent Order could result in the imposition of monetary penalties. In December 2003, NYSDEC proposed revisions to the CSO Consent Order. DEP and NYSDEC have reached an agreement on revising the CSO Consent Order which would, when executed by the parties, provide for the payment of a penalty for missed milestones under the CSO Consent Order as well as establish revised milestones for these projects which suffered delays. Certain of these milestones extend beyond the end of the CIP. The estimated additional cost of meeting these milestones is \$500 million. The proposed revised CSO Consent Order must be publicly noticed prior to being deemed final. Consistent with USEPA guidelines, the City is exploring alternative approaches to combined sewer overflow problems that focus on cost-effective means of protecting water quality.

*Harbor and Waterway Protection.* According to the most recent Harbor Survey issued by DEP, water quality in New York Harbor and surrounding rivers has shown continuing signs of overall improvement. The Harbor Survey is an ongoing monitoring effort of the City's waterways that has been done since 1909. The Survey monitors over a dozen water quality parameters at 37 sampling stations within New York Harbor and its tributaries. A key parameter of the overall health of aquatic systems is dissolved oxygen ("DO"). The Harbor Survey has found DO levels in most parts of the harbor at historic highs, although river-bottom DOs are periodically below acceptable concentrations. Over the past decade, compliance with New York State total and fecal coliform standards continues to be measured at the highest levels recorded by the Harbor Survey. Many local waterways, which were unfishable just 20 years ago, now meet the coliform bathing standards. The NYCDOH's wet-weather advisories for most public beaches (i.e. no swimming within 48 hours of a heavy rain) were lifted in June 1993. These water quality improvements are primarily a response to: continued water pollution control plant construction and upgrades; abatement and surveillance of illegal discharges; and increased capture of wet-weather flows.

In April 2004, the City health code for bathing beaches began utilizing a standard based on enterococcus, rather than coliform, which is regarded as a more precise indicator of water quality. DEP's Harbor Survey has begun a monitoring program for enterococcus and will assist the NYCDOH in its beach assessments.

As part of a cooperative effort to further improve water quality in the City's waterways, USEPA, along with the States of New York and New Jersey, recently released a Comprehensive Conservation Management Plan for the New York-New Jersey Harbor and the waters of the New York Bight. This Plan, developed under the aegis of the federal Harbor Estuary Program, builds on many of the City's ongoing programs such as water pollution control plant upgrades, controlling and capturing wet weather flows and reducing floatable debris. Under the Plan, the City will continue to promote improved water quality through, among other things, its efforts to eliminate combined sewer overflows, encourage water conservation, enhance surveillance of industrial discharges, and install sewers in areas of the City where they are not yet available. All of the capital commitments to be undertaken by the City pursuant to the Plan are already included in the CIP.

The Long Island Sound Study ("LISS") is a joint federal-state-local (the states being New York and Connecticut) program to identify the Long Island Sound's major environmental problems and develop a plan to manage those problems. USEPA is the lead federal agency involved in LISS. Hypoxia, or low levels of dissolved oxygen, has emerged as the issue of greatest concern in Long Island Sound. Hypoxia is the result of a chemical chain reaction that begins with high levels of nutrients, largely nitrogen. In addition to natural sources, other nutrient sources include effluent from water pollution control plants, stormwater run-off carrying lawn and agricultural fertilizer, organic materials, and air-deposited nitrate substances. As a result of the first and second phases of the LISS, the City agreed to limits in its SPDES permits for nitrogen discharges from its four Upper East River water pollution control plants. The construction required to meet these limits is complete and the City is meeting its current nitrogen discharge limits. In addition, the City has also entered into an Administrative Order of Consent with NYSDEC (the "Administrative Consent Order") which requires DEP to upgrade five water pollution control plants that discharge into the Upper East River or Jamaica Bay, respectively, to meet future more stringent nitrogen discharge limits. The CIP provides approximately \$2 billion for the upgrade of these five plants, including the implementation of a biological nutrient removal ("BNR") program to further reduce nitrogen levels in order to meet the Administrative Consent Order requirements. During construction, the Administrative Consent Order establishes less stringent nitrogen discharge limits than currently allowed by the City's SPDES permits for these plants. Separately, more stringent nitrogen discharge limits will likely be imposed as a result of a TMDL analysis for Long Island Sound. The TMDL was jointly prepared by the States of New York and Connecticut and approved by the USEPA in April 2001. The TMDL proposes the achievement of the dissolved oxygen standard in the Long Island Sound through the increased control of nitrogen from point sources, including certain of DEP's water pollution control plants, as well as through the control of other sources. DEP has proposed to the NYSDEC and USEPA that the Facility Plan be modified to incorporate findings from the ongoing

research to alleviate some over-conservatism in designs and make the program more cost-effective while still complying with nitrogen limits and construction deadlines specified in the Administrative Consent Order. DEP's revised program places greater emphasis on research findings, application of new technologies, and efficient management of resources. Early modeling results show that the revised program can provide an equal reduction in nitrogen levels to those anticipated by the original program. The independent Nitrogen Technical Advisory Committee, a blue ribbon panel of experts in the field, has endorsed the revised program (see "—SPDES").

By letter dated May 9, 2003, NYSDEC advised DEP that it had not agreed to any modification of the Administrative Consent Order, that DEP must comply with the provisions of the Administrative Consent Order as written, and that NYSDEC will enforce violations of the Administrative Consent Order, including the imposition of stipulated penalties. On March 12, 2004, NYSDEC issued a Notice of Violation to DEP alleging that DEP had violated certain milestones under the Administrative Consent Order. Further, on March 25, 2004, NYSDEC issued a Determination rejecting DEP's revised Facility Plan. DEP and NYSDEC are attempting to negotiate a consensual resolution of this matter, which will impact the pending proceeding concerning SPDES permits for the 14 in-City water pollution control plants operated and maintained by DEP (see "—SPDES"). However, to protect the City's rights, on July 13, 2004, the City commenced an Article 78 proceeding against NYSDEC, challenging both the Notice of Violation and the Determination.

For more information on litigation relating to the Sewer System, see "LITIGATION."

## **ECONOMIC AND DEMOGRAPHIC INFORMATION**

This section presents information regarding certain economic and demographic information about the City. All information is presented on a calendar year basis unless otherwise indicated. The data set forth are the latest available. Sources of information are indicated in the text or immediately following the charts and tables. Although the Authority considers the sources to be reliable, the Authority has made no independent verification of the information provided by non-city sources and does not warrant its accuracy.

### **New York City Economy**

The City has a highly diversified economic base, with a substantial volume of business activity in the service, wholesale and retail trade and manufacturing industries, and is the location of many securities, banking, law, accounting, new media and advertising firms.

The City is a major seaport and focal point for international business. Many of the major corporations headquartered in the City are multinational in scope and have extensive foreign operations. Numerous foreign-owned companies in the United States are also headquartered in the City. These firms, which have increased substantially in number over the past decade, are found in all sectors of the City's economy, but are concentrated in trade, manufacturing sales offices, tourism and finance. The City is the location of the headquarters of the United Nations, and several affiliated organizations maintain their principal offices in the City. A large diplomatic community exists in the City to staff missions to the United Nations and the foreign consulates.

Economic activity in the City has experienced periods of growth and recession and can be expected to experience periods of growth and recession in the future. The City experienced a recession in the early 1970s through the middle of that decade, followed by a period of expansion in the late 1970s through the late 1980s. The City fell into recession again in the early 1990s which was followed by an expansion that lasted until 2001. The City Financial Plan assumes that the economic decline that began in 2001 as a result of the September 11 attack, a national recession and a downturn in the securities industry has largely ended. Although the job market outlook remains sluggish, the City Financial Plan assumes a moderate recovery of the City's economy in calendar year 2004, which gains momentum in 2005.

On September 11, 2001, two hijacked passenger jetliners flew into the World Trade Center, resulting in a substantial loss of life, destruction of the World Trade Center and damage to other buildings in the



vicinity. Trading on the major New York stock exchanges was suspended until September 17, 2001, and business in the financial district was interrupted. Recovery, clean up and repair efforts have resulted in substantial expenditures. The City has been largely reimbursed by the federal government for all of its direct costs for response and remediation of the World Trade Center site. It is not possible to quantify at present with any certainty the long-term impact of the September 11 attack on the City and its economy.

**Personal Income**

Total personal income for City residents, unadjusted for the effects of inflation and the differential in living costs, has increased from 1992 to 2002 (the most recent year for which City personal income data are available). From 1992 to 2001, personal income in the City averaged 4.8 percent growth compared to 5.5% for the nation. After falling 0.2 percent in 2002, total personal income is now projected by the Office of Management and Budget of the City to increase in 2003 and 2004. The following table sets forth information regarding personal income in the City from 1992 to 2002.

**Personal Income(1)**

<u>Year</u>	<u>Total City (\$ billions)</u>	<u>Per Capita City</u>	<u>Per Capita U.S.</u>	<u>Per Capita City as a Percent of U.S.</u>
1992 .....	\$197.94	\$26,644	\$20,870	127.7%
1993 .....	201.90	26,898	21,356	126.0
1994 .....	207.46	27,403	22,176	123.6
1995 .....	221.21	28,981	23,078	125.6
1996 .....	234.07	30,407	24,176	125.8
1997 .....	245.48	31,579	25,334	124.7
1998 .....	262.00	33,341	26,880	124.0
1999 .....	275.45	34,658	27,933	124.1
2000.....	295.96	36,916	29,848	123.7
2001.....	303.12	37,631	30,534	123.2
2002.....	302.51	37,476	30,913	121.2

Sources: U.S. Department of Commerce, Bureau of Economic Analysis and the Bureau of the Census Data as of July 1, 2004.

(1) In current dollars. Personal Income is based on the place of residence and is measured from income which includes wages and salaries, supplements to wages and salaries, proprietors' income, personal dividend income, personal interest income, rental income of persons and transfer payments.

**Employment Trends**

The City is a leading center for the banking and securities industry, life insurance, communications, publishing, fashion design and retail fields. From 1989 to 1992, the City lost approximately 9% of its employment base. From 1993 to 2001, the City experienced significant private sector job growth with the addition of approximately 423,000 new private sector jobs (an average growth rate of approximately 2%). In 2002 and 2003, average annual employment in the City fell by 108,600 and 55,000 jobs, respectively. In 2004, average annual employment in the City is projected by the Office of Management and Budget of the City to increase. As of May 2004, total employment in the City was approximately 3,555,800 compared to approximately 3,541,200 in May 2003, a decline of approximately 0.41%.

The table below shows the distribution of employment from 1993 to 2003.

### Employment Distribution

	Average Annual Employment (in thousands)										
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
<b>Goods Producing Sectors</b>											
Construction . . . . .	85	88	90	91	93	101	112	120	122	116	112
Manufacturing . . . . .	219	212	208	200	201	196	187	177	156	139	126
<b>Service Producing Sectors</b>											
Trade Transportation and Utilities . . . . .	528	526	533	533	538	542	556	570	557	537	533
Information . . . . .	152	152	154	159	163	166	173	187	200	177	164
Financial Activities . . . . .	465	472	467	464	468	477	481	489	474	445	434
Professional and Business Services . . . . .	425	437	445	468	494	525	553	587	582	550	536
Education and Health Services . . . . .	516	536	552	565	576	589	606	620	627	646	659
Leisure and Hospitality . . . . .	194	201	208	217	228	236	244	257	260	255	258
Other Services . . . . .	120	121	123	125	129	134	142	147	149	150	149
<b>Total Private</b> . . . . .	<b>2,704</b>	<b>2,744</b>	<b>2,779</b>	<b>2,823</b>	<b>2,890</b>	<b>2,966</b>	<b>3,053</b>	<b>3,154</b>	<b>3,127</b>	<b>3,015</b>	<b>2,972</b>
<b>Government</b> . . . . .	<b>588</b>	<b>578</b>	<b>560</b>	<b>546</b>	<b>552</b>	<b>561</b>	<b>567</b>	<b>569</b>	<b>565</b>	<b>569</b>	<b>557</b>
<b>Total</b> . . . . .	<b>3,291</b>	<b>3,322</b>	<b>3,339</b>	<b>3,369</b>	<b>3,442</b>	<b>3,528</b>	<b>3,621</b>	<b>3,723</b>	<b>3,692</b>	<b>3,584</b>	<b>3,529</b>

Note: Totals may not add due to rounding.

Source: U.S. Department of Labor, Bureau of Labor Statistics Data are presented using the North American Industry Classification System ("NAICS").

## Sectoral Distribution of Employment and Earnings

In 2002, the City's service producing sectors provided approximately 2.8 million jobs and accounted for approximately 77% of total employment. Figures on the sectoral distribution of employment in the City from 1980 to 2000 reflect a significant shift to the service producing sectors and a shrinking manufacturing base relative to the nation.

The structural shift to the service producing sectors affects the total earnings as well as the average wage per employee because employee compensation in certain of those sectors, such as financial activities and professional and business services, tends to be considerably higher than in most other sectors. Moreover, average wage rates in these sectors are significantly higher in the City than in the nation. In the City in 2002, the employment share for the financial activities and professional and business services sectors was approximately 28% while the earnings share for that same sector was approximately 50%. In the nation, those same service producing sectors accounted for only approximately 18% of employment and 25% of earnings in 2002. Due to the earnings distribution in the City, sudden or large shocks in the financial markets may have a disproportionately adverse effect on the City relative to the nation.

The City's and the nation's employment and earnings by sector for 2002 are set forth in the following table.

### Sectoral Distribution of Employment and Earnings in 2002(1)

	<u>Employment</u>		<u>Earnings(2)</u>	
	<u>NYC</u>	<u>U.S.</u>	<u>NYC</u>	<u>U.S.</u>
<b>Goods Producing Sectors</b>				
Mining . . . . .	0.0%	0.4%	0.3%	0.8%
Construction . . . . .	3.2	5.2	3.1	6.2
Manufacturing . . . . .	<u>3.9</u>	<u>11.7</u>	<u>2.8</u>	<u>13.3</u>
<b>Total Goods Producing</b> . . . . .	7.1	17.3	6.3	20.3
<b>Service Producing Sectors</b>				
Trade, Transportation and Utilities . . . . .	15.0	19.6	9.2	16.6
Information . . . . .	4.9	2.6	6.8	3.8
Financial Activities . . . . .	12.4	6.0	28.8	10.0
Professional and Business Services . . . . .	15.4	12.3	20.0	15.1
Education and Health Services . . . . .	18.0	12.4	10.3	10.6
Leisure & Hospitality . . . . .	7.1	9.2	3.6	3.8
Other Services . . . . .	<u>4.2</u>	<u>4.1</u>	<u>2.3</u>	<u>3.1</u>
<b>Total Service Producing</b> . . . . .	77.0	66.2	81.2	63.0
<b>Total Private Sector</b> . . . . .	84.1	83.5	88.9	83.7
<b>Government(3)</b> . . . . .	15.9	16.5	11.1	16.3

Note: Data may not add due to rounding or restrictions on reporting earnings data. Data are presented using NAICS.

Sources: The two primary sources are the U.S. Department of Labor, Bureau of Labor Statistics and the U.S. Department of Commerce, Bureau of Economic Analysis.

- (1) The sectoral distributions are obtained by dividing each industry's employment or earnings by total non-agricultural employment or earnings.
- (2) Includes the sum of wage and salary disbursements, other labor income and proprietor's income. The latest information available is 2002 data.
- (3) Excludes military establishments.

The comparison of employment and earnings in 1980 and 2000 set forth below is presented using the industry classification system which was in use until the adoption of NAICS in the late 1990s. Though NAICS has been implemented for most government industry statistical reporting, most historical earnings data have not been converted. Furthermore, it is not possible to compare data from the two classification

systems except in the general categorization of government, private and total employment. The table below reflects the overall increase in the service producing sectors and the declining manufacturing base in the City from 1980 to 2000.

The City's and the nation's employment and earnings by industry are set forth in the following table.

**Sectoral Distribution of Employment and Earnings(1)**

Sector	Employment				Earnings(2)			
	1980		2000		1980		2000	
	NYC	U.S.	NYC	U.S.	NYC	U.S.	NYC	U.S.
<b>Private Sector:</b>								
Non-Manufacturing:								
Services .....	27.0%	19.8%	39.1%	30.7%	26.0%	18.4%	30.2%	28.7%
Wholesale and Retail Trade .....	18.6	22.5	16.8	23.0	15.1	16.6	9.3	14.9
Finance, Insurance and Real Estate .....	13.6	5.7	13.2	5.7	17.6	5.9	35.5	10.0
Transportation and Public Utilities .....	7.8	5.7	5.7	5.3	10.1	7.6	5.2	6.8
Contract Construction .....	2.3	4.8	3.3	5.1	2.6	6.3	2.9	5.9
Mining .....	0.0	1.1	0.0	0.4	0.4	2.1	0.1	1.0
Total Non-Manufacturing .....	69.3	59.6	78.1	70.3	71.8	56.9	83.2	67.3
Manufacturing:								
Durable .....	4.4	13.4	1.6	8.4	3.7	15.9	1.3	10.5
Non-Durable .....	10.6	9.0	4.9	5.6	9.5	8.9	4.8	6.1
Total Manufacturing .....	15.0	22.4	6.5	14.0	13.2	24.8	6.1	16.6
<b>Total Private Sector .....</b>	<b>84.3</b>	<b>82.0</b>	<b>84.7</b>	<b>84.3</b>	<b>85.2</b>	<b>82.1</b>	<b>89.8</b>	<b>84.6</b>
<b>Government(3) .....</b>	<b>15.7</b>	<b>18.0</b>	<b>15.3</b>	<b>15.7</b>	<b>14.8</b>	<b>17.9</b>	<b>10.3</b>	<b>15.4</b>

Note: Totals may not add due to rounding. Data are presented using the Standard Industrial Classification System.  
Sources: The two primary sources of employment and earnings information are U.S. Department of Labor, Bureau of Labor Statistics, and U.S. Department of Commerce, Bureau of Economic Analysis.

- (1) The sectoral distributions are obtained by dividing each industry's employment or earnings by total non-agricultural employment or earnings.
- (2) Includes the sum of wage and salary disbursements, other labor income, and proprietors' income. The latest information available for the City is 2000 data.
- (3) Excludes military establishments.

**Population**

The City has been the most populous city in the United States since 1790. The City's population is almost as large as the combined population of Los Angeles, Chicago and Houston, the three next most populous cities in the nation.

The following table provides information concerning the City's population.

**Population**

<u>Year</u>	<u>Population Total</u>
1970 .....	7,895,563
1980 .....	7,071,639
1990 .....	7,322,564
2000 .....	8,008,278

Note: Figures do not include an undetermined number of undocumented aliens.  
Source: U.S. Department of Commerce, Bureau of the Census.

**Housing**

In 1999, the housing stock in the City consisted of approximately 3,039,000 housing units, excluding certain special types of units primarily in institutions such as hospitals and universities. The 1999 housing inventory represented an increase of approximately 44,000 units, or 1.5%, since 1996 and an increase of approximately 62,000 units, or 2.1% since 1993. The 1999 Housing and Vacancy Survey indicates that rental housing units predominate in the City. Of all occupied housing units in 1999, approximately 34% were conventional home-ownership units, cooperatives or condominiums and approximately 66% were rental units. The following table presents trends in the housing inventory in the City.

**Housing Inventory  
(In Thousands)**

<u>Ownership/Occupancy Status</u>	<u>1981</u>	<u>1984</u>	<u>1987</u>	<u>1991</u>	<u>1993</u>	<u>1996</u>	<u>1999</u>	<u>2002</u>
Total Housing Units . . . . .	2,792	2,803	2,840	2,981	2,977	2,995	3,039	3,209
Owner Units . . . . .	755	807	837	858	825	858	932	997
Owner-Occupied . . . . .	746	795	817	829	805	834	915	982
Vacant for Sale . . . . .	9	12	19	29	20	24	17	15
Rental Units . . . . .	1,976	1,940	1,932	2,028	2,040	2,027	2,018	2,085
Renter-Occupied . . . . .	1,934	1,901	1,884	1,952	1,970	1,946	1,953	2,024
Vacant for Rent . . . . .	42	40	47	77	70	81	64	61
Vacant Not Available for Sale or Rent(1) . . . . .	62	56	72	94	111	110	89	127

Note: Details may not add up to totals due to rounding.

Sources: U.S. Bureau of the Census, 1981, 1984, 1987, 1991, 1993, 1996, 1999 and draft 2002 New York City Housing and Vacancy Surveys.

(1) Vacant units that are dilapidated, intended for seasonal use, held for occasional use, held for maintenance purposes or other reasons.

**LITIGATION**

There is no action, suit, proceeding or investigation, at law or in equity, before or by any court, public board or body pending or, to the best knowledge of the Authority, threatened against or affecting the Authority to restrain or enjoin the issuance, sale or delivery of the Fiscal 2005 A Bonds or in any way contesting or affecting the validity of the Fiscal 2005 A Bonds or any proceedings of the Authority, the Board or the City taken with respect to the issuance or sale of the Fiscal 2005 A Bonds or with respect to the Resolution or the pledge or application of any money or security provided for the payment of the Fiscal 2005 A Bonds or the existence or powers of the Authority or the Board.

Pursuant to the Lease and the Agreement, the City has agreed, subject to certain conditions, to indemnify the Authority and the Board against any and all liability in connection with any act done or omitted in the exercise of their powers which is taken or omitted in good faith in pursuance of their purposes under the Act. The City, however, is entitled to reimbursement by the Board for the amount of any judgment or settlement paid by the City (and not otherwise reimbursed from any other source) arising out of a tort or contract claim to the extent that the City's liability therefor is related to the operation, maintenance and improvement of the System provided, however, that the Board is not required to reimburse the City in any one year for tort claims in excess of 5% of the Revenues of the Board for such Fiscal Year.

There are numerous claims seeking damages and injunctive and other relief against the City related to the System. Except as noted below, these claims represent routine litigation incidental to the performance of the City's governmental functions in connection with the operation, maintenance and improvement of the System. The City has paid an average of approximately \$3.5 million per year from Fiscal Years 1995 through 2003 in satisfaction of tort claims relating to the operation of the System. Approximately \$2.1 million of such claims allege property damage and approximately \$1.3 million of these claims allege personal injury. Contract claims on water supply, sewer and water pollution control projects arise in varying amounts based on alleged change orders and related matters. While most seek under \$10 million in damages, one action seeks damages of approximately \$32 million. While the probable

outcome of these actions cannot be determined at this time, contract claims are expected to be funded through the CIP, which may be revised from time to time to accommodate such claims as well as other changes therein. The ultimate outcome of the proceeding described below is not currently predictable, and unfavorable determinations therein could result in substantial expenditures.

In March 2000, several fishing and sporting groups filed a lawsuit against the City and DEP in the United States District Court for the Northern District of New York, claiming that DEP's operation of the Shandaken Tunnel violated the Clean Water Act. Because water discharged from the tunnel into the Esopus Creek is frequently turbid, plaintiffs alleged that the discharge of turbid water amounts to the addition of a pollutant to the creek from a point source, requiring a SPDES permit. Although the City's motion to dismiss was granted in October 2000 by the District Court, on October 23, 2001 the Second Circuit reversed and held that the Clean Water Act requires SPDES permits for discharges caused when one water body is artificially diverted into a second water body. In late May 2002, the District Court granted the plaintiffs' motion for summary judgment on the issue of liability. In February 2003, after a bench trial on the issues of remedies and penalties, the District Court determined that it was reasonable for the City to believe that a SPDES permit was not required for the operation of the Shandaken Tunnel prior to the Second Circuit decision in October 2001. The Court also determined that given the need to secure the safety of the water supply system after the events of September 11, 2001, the City's delay in filing an application for a SPDES permit until December 2002 did not evidence a lack of good faith. Nonetheless, the Court imposed approximately \$5.7 million in statutory penalties on the City for operating the Shandaken Tunnel without a SPDES permit from June 22, 2002 to December 30, 2002, the date of the City's application for a SPDES permit. Apart from directing the City to pursue the permit, the Court ordered no specific remedy. For information on the SPDES permit, see "THE SYSTEM—The Sewer System—Governmental Regulation—SPDES." The City has appealed the District Court's decision on penalties to the Second Circuit.

#### **APPROVAL OF LEGAL PROCEEDINGS**

The issuance of the Fiscal 2005 A Bonds is subject to the approval of legality by Orrick, Herrington & Sutcliffe LLP, New York, New York, Bond Counsel. Certain legal matters will be passed upon for the City and the Board by the City's Corporation Counsel. Certain legal matters will be passed upon for the Underwriters by Nixon Peabody LLP, New York, New York.

#### **FINANCIAL ADVISORS**

Lamont Financial Services Corporation and Ramirez & Co., Inc. have served as financial advisors to the Authority with respect to the sale of the Fiscal 2005 A Bonds.

#### **FURTHER INFORMATION**

The references herein to and summaries of federal, State and local laws, including but not limited to the Code, the Constitution and laws of the State, the Act, the 1905 Act, the Clean Water Act, the SDWA, the Ban Act, the MPRSA, and documents, agreements and court decisions, including but not limited to the Lease, the Agreement, the Resolution and the Second Resolution are summaries of certain provisions thereof. Such summaries do not purport to be complete and are qualified in their entirety by reference to such acts, laws, documents, agreements or decisions. Copies of the Lease, the Agreement, the Resolution and the Second Resolution are available for inspection during normal business hours at the office of the Authority.

Any statements in this Official Statement involving matters of opinion, whether or not expressly so stated, are intended as such and not as representations of fact. Neither this Official Statement nor any statement which may have been made orally or in writing shall be construed as a contract or as a part of a contract with the original purchasers or any holders of the Fiscal 2005 A Bonds.

## **CONTINUING DISCLOSURE UNDER SEC RULE 15c2-12**

To the extent that Rule 15c2-12 (the “Rule”) of the Securities and Exchange Commission (“SEC”) under the Securities and Exchange Act of 1934, as amended (the “1934 Act”), requires the respective Underwriters to determine, as a condition to purchasing the Fiscal 2005 A Bonds, that the Authority will covenant to the effect of the provisions here summarized (the “Undertaking”), and the Rule as so applied is authorized by a federal law that as so construed is within the powers of Congress, the Authority agrees with the record and beneficial owners from time to time of the Fiscal 2005 A Bonds (“Bondholders”) that it will:

(1) within 240 days after the end of the 2004 Fiscal Year and each subsequent Fiscal Year, deliver to each nationally recognized municipal securities information repository and to any New York State information depository, core financial information and operating data for the prior Fiscal Year, including (i) the System’s audited financial statements, prepared in accordance with generally accepted accounting principles in effect from time to time, and (ii) material historical financial and operating data concerning the System and the Revenues of the System generally of the type included in this Official Statement under the captions “CAPITAL IMPROVEMENT AND FINANCING PROGRAM,” “FINANCIAL OPERATIONS,” “RATES AND BILLING” and “THE SYSTEM;”

(2) provide in a timely manner, to each nationally recognized municipal securities information repository or to the Municipal Securities Rulemaking Board, and to any New York State information depository, notice of any of the following events with respect to the Fiscal 2005 A Bonds, if material:

- (a) principal and interest payment delinquencies;
- (b) non-payment related defaults;
- (c) in the case of credit enhancement that is provided in connection with the issuance of the Fiscal 2005 A Bonds, unscheduled draws on such credit enhancement reflecting financial difficulties and substitution of credit providers, or their failure to perform;
- (d) unscheduled draws on debt service reserves reflecting financial difficulties;
- (e) adverse opinions or events affecting the exclusion from gross income for federal income tax purposes of interest on the Fiscal 2005 A Bonds;
- (f) modifications to rights of security holders;
- (g) bond calls;
- (h) defeasances;
- (i) release, substitution, or sale of property securing repayment of the securities;
- (j) rating changes; and

(3) provide in a timely manner, to each nationally recognized municipal securities information repository or to the Municipal Securities Rulemaking Board, and to any New York State information depository, notice of any failure by the Authority to comply with clause (1), above.

The Authority expects to provide the information described in clause (1) above by delivering its first bond official statement that includes its financial statements for the preceding fiscal year.

Currently, there is no New York State information depository and the nationally recognized municipal securities information repositories are: Bloomberg Municipal Repository, 100 Business Park Drive, Skillman, New Jersey 08558; Standard & Poor’s J.J. Kenny Repository, 55 Water Street, 45th Floor, New York, New York 10041; FT Interactive Data, 100 William Street, New York, NY 10038, Attn: NRMSIR and DPC Data Inc., One Executive Drive, Fort Lee, New Jersey 07024.

No Bondholder may institute any suit, action or proceeding at law or in equity (“Proceeding”) for the enforcement of the Undertaking or for any remedy for breach thereof, unless such Bondholder has filed with the Authority evidence of ownership and a written notice of and request to cure such breach, and

the Authority has not complied within a reasonable time; provided, however, that any Proceeding challenging the adequacy of any information provided pursuant to paragraphs (1) and (2) above may be brought only by the Trustee or the holders of a majority in aggregate principal amount of the Fiscal 2005 A Bonds affected thereby which at the time are Outstanding. All Proceedings may be instituted only as specified herein, in the federal or State courts located in the Borough of Manhattan, State and City of New York, and for the equal benefit of all holders of the Outstanding Bonds benefited by the same or a substantially similar covenant. No remedy may be sought or granted other than specific performance of the covenant at issue.

Any amendment to the Undertaking will take effect only if:

(a) the amendment is made in connection with a change in circumstances that arises from a change in legal requirements, change in law, or change in the identity, nature, or status of the Authority or the Board, or type of business conducted; the Undertaking, as amended, would have complied with the requirements of the Rule at the time of sale of the Fiscal 2005 A Bonds to the Underwriters, after taking into account any amendments or interpretations of the Rule, as well as any change in circumstances; and the amendment does not materially impair the interests of Bondholders, as determined by parties unaffiliated with the Authority (such as, but without limitation, the Authority's financial advisor or bond counsel) and the annual financial information containing (if applicable) the amended operating data or financial information will explain, in narrative form, the reasons for the amendment and the "impact" (as that word is used in the letter from the staff of the SEC to the National Association of Bond Lawyers dated June 23, 1995) of the change in the type of operating data or financial information being provided; or

(b) all or any part of the Rule, as interpreted by the staff of the SEC at the date of the Undertaking, ceases to be in effect for any reason, and the Authority elects that the Undertaking will be deemed terminated or amended (as the case may be) accordingly.

For purposes of the Undertaking, a beneficial owner of a security includes any person who, directly or indirectly, through any contract, arrangement, understanding, relationship, or otherwise has or shares investment power which includes the power to dispose, or to direct the disposition of, such security, subject to certain exceptions, as set forth in the Undertaking. Any assertion of beneficial ownership must be filed, with full documentary support, as part of the written request to the Authority described above.

## **INVESTMENTS**

The Authority invests moneys available in the Debt Service Reserve Fund, Debt Service Fund, Construction Fund and the Revenue Fund. Investments are made pursuant to restrictions contained in the Resolutions and the Authority's Investment Guidelines as adopted and modified from time to time by the Authority's Board of Directors. In conjunction with the annual audit of the financial statements of the System, the independent auditors are required to provide to the Authority's Board of Directors an Investment Compliance letter confirming compliance with both the Authority's Investment Guidelines and with Investment Guidelines of Public Authorities of the State Comptroller of New York. Twice annual valuation of the Debt Service Reserve Fund and annual valuation of all other funds is at the lower of amortized cost or market value. For other investment restrictions, see "APPENDIX C—GLOSSARY AND SUMMARY OF CERTAIN DOCUMENTS." The Authority's primary objective in investment of its available funds is preservation of principal. The Authority is not legally authorized to enter into reverse repurchase agreements. The Authority does not make leveraged investments.

## **RATINGS**

Standard & Poor's Ratings Services has rated the Fiscal 2005 A Bonds "AA+". Moody's Investors Service, Inc. has rated the Fiscal 2005 A Bonds "Aa2". Fitch, Inc. has rated the Fiscal 2005 A Bonds "AA".

Such ratings reflect only the views of the respective rating agencies, from which an explanation of the significance of such ratings may be obtained. There is no assurance that any or all of such ratings will



continue for any given period of time or that any or all will not be revised downward or withdrawn entirely. Any such downward revision or withdrawal could have an adverse effect on the market price of the Fiscal 2005 A Bonds.

### **UNDERWRITING**

The Underwriters have jointly and severally agreed, subject to certain conditions, to purchase the Fiscal 2005 A Bonds from the Authority at an aggregate price which is \$911,251.67 less than the initial offering price thereof. The obligations of the Underwriters are subject to certain conditions precedent, and the Underwriters will be obligated to purchase all of the Fiscal 2005 A Bonds if any of the Fiscal 2005 A Bonds are purchased. The Fiscal 2005 A Bonds may be offered and sold to certain dealers (including dealers depositing the Fiscal 2005 A Bonds into investment trusts) and others at prices lower than such public offering price and such public offering price may be changed, from time to time, by the Underwriters. The Underwriters have designated Siebert Brandford Shank & Co. LLC as their Representative.

### **LEGALITY FOR INVESTMENT AND DEPOSIT**

Under the Act, the Fiscal 2005 A Bonds are securities in which all public officials and bodies of the State and all municipalities, all insurance companies and associations and other persons carrying on an insurance business, all banks, bankers, trust companies, savings banks and savings associations, including savings and loan associations, investment companies and other persons carrying on a banking business, and administrators, guardians, executors, trustees and other fiduciaries and all others persons whatsoever, who are now and may hereafter be authorized to invest in the Fiscal 2005 A Bonds or obligations of the State, may properly and legally invest funds including capital in their control or belonging to them in such Fiscal 2005 A Bonds. The Act further provides that the Fiscal 2005 A Bonds are securities which may be deposited with and may be received by all public officers and bodies of the State and all municipalities for any purposes for which the deposit of bonds or other obligations of the State is or may hereafter be authorized.

### **FINANCIAL STATEMENTS AND INDEPENDENT AUDITORS**

The financial statements of the New York City Water and Sewer System as of and for the years ended June 30, 2002 and June 30, 2003 (the "Audited System Financial Statements") included in Appendix D to this Official Statement have been audited by KPMG LLP, independent certified public accountants, to the extent and for the periods indicated in their report thereon.

### **ENGINEERING FEASIBILITY REPORT AND FORECASTED CASH FLOWS**

Certain information contained in this Official Statement under the captions "CAPITAL IMPROVEMENT AND FINANCING PROGRAM—Capital Improvement Program," "THE SYSTEM—The Water System," "THE SYSTEM—The Sewer System" has been reviewed and independently evaluated by Metcalf & Eddy which has provided the opinion letter set forth in Appendix A confirming such information. Metcalf & Eddy also serves as a consulting engineer to DEP on capital projects relating to the System. As a result of occasional, routine litigation initiated by third parties arising from such projects, Metcalf & Eddy and the City have from time to time been either co-parties or adverse parties in such litigation.

Certain financial forecasts contained in this Official Statement in the tables titled "Sources and Uses of Capital Funds" under the caption "CAPITAL IMPROVEMENT AND FINANCING PROGRAM" and "Expenses," "Projected Revenues," "Projected System Expense" and "Forecasted Cash Flows" under the caption "FINANCIAL OPERATIONS" have been examined by Black & Veatch, to the extent and for the periods indicated in those tables. The conclusions of Black & Veatch with respect to the reasonableness of the forecasts are set forth in an opinion letter attached hereto as Appendix B. Black & Veatch has provided consulting services including feasibility studies, rate studies and organizational analyses to numerous clients in the water and wastewater industry, including over 100 medium and large jurisdictions.

## TAX MATTERS

In the opinion of Orrick, Herrington & Sutcliffe LLP (“Bond Counsel”), based upon an analysis of existing laws, regulations, rulings and court decisions, and assuming, among other matters, the accuracy of certain representations and compliance with certain covenants, interest on the Fiscal 2005 A Bonds is excluded from gross income for federal income tax purposes under Section 103 of the Internal Revenue Code of 1986 (the “Code”). Bond Counsel is of the further opinion that interest on the Fiscal 2005 A Bonds is not a specific preference item for purposes of the federal individual or corporate alternative minimum taxes, although Bond Counsel observes that such interest is included in adjusted current earnings when calculating corporate alternative minimum taxable income. Bond Counsel is also of the opinion that interest on the Fiscal 2005 A Bonds is exempt from personal income taxes imposed by the State of New York and any political subdivision thereof (including The City of New York). A complete copy of the proposed form of opinion of Bond Counsel is set forth in Appendix E hereto.

To the extent the issue price of any maturity of the Fiscal 2005 A Bonds is less than the amount to be paid at maturity of such Fiscal 2005 A Bonds (excluding amounts stated to be interest and payable at least annually over the term of such Fiscal 2005 A Bonds), the difference constitutes “original issue discount,” the accrual of which, to the extent properly allocable to each Beneficial Owner thereof, is treated as interest on the Fiscal 2005 A Bonds which is excluded from gross income for federal income tax purposes. For this purpose, the issue price of a particular maturity of the Fiscal 2005 A Bonds is the first price at which a substantial amount of such maturity of the Fiscal 2005 A Bonds is sold to the public (excluding bond houses, brokers, or similar persons or organizations acting in the capacity of underwriters, placement agents or wholesalers). The original issue discount with respect to any maturity of the Fiscal 2005 A Bonds accrues daily over the term to maturity of such Fiscal 2005 A Bonds on the basis of a constant interest rate compounded semiannually (with straight-line interpolations between compounding dates). The accruing original issue discount is added to the adjusted basis of such Fiscal 2005 A Bonds to determine taxable gain or loss upon disposition (including sale, redemption, or payment on maturity) of such Fiscal 2005 A Bonds. Beneficial Owners of the Fiscal 2005 A Bonds should consult their own tax advisors with respect to the tax consequences of ownership of Fiscal 2005 A Bonds with original issue discount, including the treatment of Beneficial Owners who do not purchase such Fiscal 2005 A Bonds in the original offering to the public at the first price at which a substantial amount of such Fiscal 2005 A Bonds is sold to the public.

Fiscal 2005 A Bonds purchased, whether at original issuance or otherwise, for an amount higher than their principal amount payable at maturity (or, in some cases, at their earlier call date) (“Premium Bonds”) will be treated as having amortizable bond premium. No deduction is allowable for the amortizable bond premium in the case of bonds, like the Premium Bonds, the interest on which is excluded from gross income for federal income tax purposes. However, the amount of tax-exempt interest received, and a Beneficial Owner’s basis in a Premium Bond, will be reduced by the amount of amortizable bond premium properly allocable to such Beneficial Owner. Beneficial Owners of Premium Bonds should consult their own tax advisors with respect to the proper treatment of amortizable bond premium in their particular circumstances.

The Code imposes various restrictions, conditions and requirements relating to the exclusion from gross income for federal income tax purposes of interest on obligations such as the Fiscal 2005 A Bonds. The Authority has made certain representations and covenanted to comply with certain restrictions, conditions and requirements designed to ensure that interest on the Fiscal 2005 A Bonds will not be included in federal gross income. Inaccuracy of these representations or failure to comply with these covenants may result in interest on the Fiscal 2005 A Bonds being included in gross income for federal income tax purposes, possibly from the date of original issuance of the Fiscal 2005 A Bonds. The opinion of Bond Counsel assumes the accuracy of these representations and compliance with these covenants. Bond Counsel has not undertaken to determine (or to inform any person) whether any actions taken (or not taken), or events occurring (or not occurring), or any other matters coming to Bond Counsel’s attention after the date of issuance of the Fiscal 2005 A Bonds may adversely affect the value of, or the tax status of interest on, the Fiscal 2005 A Bonds.

Certain requirements and procedures contained or referred to in the Resolution, the Agreement, the Tax Certificate and Agreement, and other relevant documents may be changed and certain actions (including, without limitation, defeasance of the Fiscal 2005 A Bonds) may be taken or omitted under the circumstances and subject to the terms and conditions set forth in such documents. Bond Counsel expresses no opinion as to any Fiscal 2005 A Bond or the interest thereon if any such change occurs or action is taken or omitted upon the advice or approval of bond counsel other than Orrick, Herrington & Sutcliffe LLP.

Although Bond Counsel is of the opinion that interest on the Fiscal 2005 A Bonds is excluded from gross income for federal income tax purposes and is exempt from personal income taxes imposed by the State of New York and any political subdivision thereof (including The City of New York), the ownership or disposition of, or the accrual or receipt of interest on, the Fiscal 2005 A Bonds may otherwise affect a Beneficial Owner's federal, state or local tax liability. The nature and extent of these other tax consequences depends upon the particular tax status of the Beneficial Owner or the Beneficial Owner's other items of income or deduction. Bond Counsel expresses no opinion regarding any such other tax consequences.

Future legislation, if enacted into law, or clarification of the Code may cause interest on the Fiscal 2005 A Bonds to be subject, directly or indirectly, to federal income taxation, or otherwise prevent Beneficial Owners from realizing the full current benefit of the tax status of such interest. The introduction or enactment of any such future legislation or clarification of the Code may also affect the market price for, or marketability of, the Fiscal 2005 A Bonds. Prospective purchasers of the Fiscal 2005 A Bonds should consult their own tax advisers regarding any pending or proposed federal tax legislation, as to which Bond Counsel expresses no opinion.

The opinion of Bond Counsel is based on current legal authority, covers certain matters not directly addressed by such authorities, and represents Bond Counsel's judgment as to the proper treatment of the Fiscal 2005 A Bonds for federal income tax purposes. It is not binding on the Internal Revenue Service ("IRS") or the courts. Furthermore, Bond Counsel cannot give and has not given any opinion or assurance about the future activities of the Authority, or about the effect of future changes in the Code, the applicable regulations, the interpretation thereof or the enforcement thereof by the IRS. The Authority has covenanted, however, to comply with the requirements of the Code.

Bond Counsel's engagement with respect to the Fiscal 2005 A Bonds ends with the issuance of the Fiscal 2005 A Bonds, and, unless separately engaged, Bond Counsel is not obligated to defend the Authority or the Beneficial Owners regarding the tax-exempt status of the Fiscal 2005 A Bonds in the event of an audit examination by the IRS. Under current procedures, parties other than the Authority and its appointed counsel, including the Beneficial Owners, would have little, if any, right to participate in the audit examination process. Moreover, because achieving judicial review in connection with an audit examination of tax-exempt bonds is difficult, obtaining an independent review of IRS positions with which the Authority legitimately disagrees, may not be practicable. Any action of the IRS, including but not limited to selection of the Fiscal 2005 A Bonds for audit, or the course or result of such audit, or an audit of bonds presenting similar tax issues may affect the market price for, or the marketability of, the Fiscal 2005 A Bonds, and may cause the Authority or the Beneficial Owners to incur significant expense.

## **CERTAIN LEGAL OPINIONS**

At the request of the Authority, Bond Counsel reviewed issues related to the effects on the Board and the Authority of a case under Title 11 of the United States Bankruptcy Code (the “Bankruptcy Code”) in which the City is a debtor. Specifically, Bond Counsel considered whether a court, exercising reasonable judgment after full consideration of all relevant factors, would (i) hold that the Revenues derived from operation of the System would be property of the bankruptcy estate of the City, (ii) hold that the rights of the Board to the Revenues and the interest of the Authority in the Revenues would be subject to a stay, by operation of Section 922(a) of the Bankruptcy Code or (iii) order the substantive consolidation of the assets of either or both the Board and the Authority with those of the City. Based upon its review of the Act, the Lease, the Agreement, the Resolution and such other matters of law and fact as it considered relevant, and recognizing that there is no definitive judicial authority confirming the correctness of its analysis, Bond Counsel has rendered to the Authority its opinion, subject to all the facts, assumptions and qualifications set forth therein, that under the Bankruptcy Code a court, in the circumstances described above, (i) would not hold that the Revenues would be property of the City or that the Board’s right to and the Authority’s interest in the Revenues would be subject to a stay by operation of Section 922(a) of the Bankruptcy Code, and (ii) would not order the substantive consolidation of the assets and liabilities of either the Board or the Authority with those of the City. This opinion will be based on an analysis of existing laws, regulations, rulings and court decisions, and will cover certain matters not directly addressed by such authorities. There are no court decisions directly on point.

Bond Counsel is also of the opinion that, subject to all the facts, assumptions and qualifications set forth therein, in a case under the Bankruptcy Code in which the City is a debtor (i) should the City elect to assume the Lease, the Lease would continue pursuant to its terms and (ii) should the City elect to reject the Lease, the Board may elect to retain its rights under the Lease and remain in possession and enjoy the use of the System and the right to the Revenues derived therefrom for the unexpired balance of the term of the Lease.

The Bankruptcy Code provides that in order for a municipality to be a Chapter 9 debtor it must be specifically authorized by State law to be a debtor under Chapter 9 of the Bankruptcy Code. Bond Counsel is of the opinion, subject to all the facts, assumptions and qualifications set forth therein, that under the Bankruptcy Code neither the Authority nor the Board could properly be a debtor in a voluntary or involuntary case under the Bankruptcy Code.

Bond Counsel has not rendered an opinion, however, as to any preliminary or temporary stay, injunction or order which a bankruptcy court might issue pursuant to its powers under 11 U.S.C. §§ 105 or 362 to preserve the status quo pending consideration of the substantive legal issues discussed above. Moreover, the opinions expressed above have inherent limitations because of the pervasive equity powers of bankruptcy courts as they relate to the business and creditor relationships leading up to the bankruptcy as well as generally the overriding goal of reorganization to which other legal rights and policies may be subordinated, the potential relevance to the exercise of judicial discretion of future-arising facts and circumstances, and the nature of the bankruptcy process; and are based on an analysis of existing laws, regulations, rulings and court decisions. Such opinions may be adversely affected by actions taken or events occurring, including a change in law, regulation or ruling (or in the application or official interpretation of any law, regulation or ruling) after the date of this Official Statement. Bond Counsel has not undertaken to determine, or to inform any person, whether such actions are taken or such events occur and has no obligation to update this section in light of such actions or events.

NEW YORK CITY MUNICIPAL WATER  
FINANCE AUTHORITY

**LETTER OF  
METCALF & EDDY OF NEW YORK, INC.,  
CONSULTING ENGINEERS**

[THIS PAGE INTENTIONALLY LEFT BLANK.]

July 21, 2004

Mr. Alan L. Anders  
Executive Director  
New York City Municipal Water Finance Authority

Subject: New York City Municipal Water Finance Authority  
Water and Sewer System Revenue Bonds,  
Fiscal 2005 Series A

Dear Mr. Anders:

We hereby submit the opinion of Metcalf & Eddy of New York, Inc. (“Metcalf & Eddy”) on the Engineering Feasibility of the Water and Sewer System serving The City of New York (the “City”). Capitalized terms used herein and not otherwise defined have the meanings ascribed to such terms in the Official Statement.

Based on the information set forth in this Official Statement, our experience and our analyses during the preparation of the 1983 feasibility study, the methodology described below and subject to the reliances and assumptions made throughout this letter, Metcalf & Eddy concludes that overall the water and sewer system (the “System”) serving the City continues to be operated in a professional and prudent manner. Further, Metcalf & Eddy is of the opinion that:

- The condition of the System continues to receive the highest rating of our three rating categories (adequate).
- The expense allocations for Fiscal Year 2005 are adequate for the continued reliable operation of the System.
- The Capital Improvement Program (the “CIP”) is responsive to the long-term operating requirements of the service area.
- Staffing levels of the System are adequate for proper operation and maintenance.

Metcalf & Eddy hereby consents to the inclusion of those opinions and conclusions attributed to it in the Official Statement.

### **Purpose and Scope**

This letter has been prepared to document the results of analyses carried out during the period of August 1983 to the present by personnel of Metcalf & Eddy in connection with the issuance of the Water and Sewer System Revenue Bonds, Fiscal 2005 Series A by the New York City Municipal Water Finance Authority (the “Authority”). Certain studies and analyses were performed in anticipation of the creation of the Authority and were used in developing the information in the Official Statement under the captions: “CAPITAL IMPROVEMENT AND FINANCING PROGRAM—Capital Improvement Program,” “THE SYSTEM—The Water System” and “THE SYSTEM—The Sewer System.” The following sets forth a brief outline of the major tasks addressed:

- An overview of the System’s service area and major facilities, including a general assessment of the capacity and condition of existing water, wastewater and drainage facilities and a review of recently completed improvements.
- An analysis of the CIP for the period 2004-2013 and the funding needed to carry out the CIP and ongoing capital contracts commenced prior to the CIP.
- An analysis of the management of the System and its current and anticipated operating programs.

Since 1983 Metcalf & Eddy has provided engineering services related to the City’s Water and Wastewater Operations Evaluation Study. During this period Metcalf & Eddy has performed an evaluation of the condition of the System, independently reviewed the capital plans for water and wastewater programs, and jointly with the rate consultant reviewed the operating programs of the New York City Department of Environmental Protection (“DEP”). Ten topics were addressed in this effort as listed below.

- Present Condition of Physical Facilities
- Remaining Useful Life of Facilities
- Reliability of Utility Systems
- Operation and Maintenance Programs
- Current Utility Use
- Maximum Existing Capacity
- Needs for Routine Maintenance, Upgrading and Expansion
- Evaluation of the Impact of Legal Mandates
- Overview of Present Capital Improvement Program
- Safety Practices and Potential for Catastrophe

### **Methodology**

Interviews with staff members of the Authority and the City were conducted, current engineering and financial reports, System operating data and other documents were reviewed and major facilities were inspected. Audited financial statements of the City and data supplied by the Authority were also reviewed to identify historical costs and revenues. The evaluation of current needs and future conditions was made by analyzing historical data, assessing the effectiveness of current City maintenance programs, reviewing the plans of key outside agencies, and taking into account current trends and the anticipated impact of the CIP.

The physical condition of the facilities was rated by Metcalf & Eddy. A uniform rating system, standard among engineering firms providing similar services, was established consisting of three rating categories—adequate, marginal, and inadequate as described below:

- Adequate: Shows no signs of deterioration, meets design intent, and requires only routine maintenance to meet or exceed expected useful life.
- Marginal: Facility is functional but does not meet design intent, and requires non-routine maintenance or capital replacement to restore to adequate condition.
- Inadequate: Facility does not provide functional operation, and requires major reconstruction to restore to adequate condition.

### **The Consulting Engineer**

Metcalf & Eddy has served the City as consulting engineers for over 90 years in capacities dealing with water supply, water distribution, sewage collection, and wastewater treatment. Metcalf & Eddy is one of the largest consulting engineering firms and is recognized in the United States and internationally as a leader in services to the water and wastewater industry.

We have no responsibility to update this letter or the information provided in the Official Statement for the captioned sections described above for events and circumstances occurring after the date of this letter.

Very truly yours,



JAMES ANDERSON  
*President*  
Metcalf & Eddy of New York, Inc.



**LETTER OF BLACK & VEATCH NEW YORK LLP,  
RATE CONSULTANTS**

[THIS PAGE INTENTIONALLY LEFT BLANK.]



# BLACK & VEATCH

295 Madison Avenue  
Suite 1801  
New York, New York 10017  
Tel: 212-973-1336  
Fax: 212-973-1343

Black & Veatch New York LLP

July 21, 2004

Mr. Alan L. Anders, Executive Director  
New York City Municipal Water Finance Authority

Re: New York City Municipal Water Finance Authority  
Water and Sewer System Revenue Bonds, Fiscal 2005 Series A

Dear Mr. Anders:

The purpose of this letter is to summarize the conclusions of our independent analysis of the financial forecast of the Authority (the "Forecasted Cash Flows") for Fiscal Years 2004 through 2009 (the "Reporting Period") in connection with the issuance by the New York City Municipal Water Finance Authority (the "Authority") of the Authority's \$150,000,000 Water and Sewer System Revenue Bonds, Fiscal 2005 Series A (the "Series A Bonds"). Proceeds from the Series A Bonds are expected to be used: (i) to pay principal and interest on a portion of the Authority's Outstanding commercial paper notes, (ii) to pay certain costs of issuance and (iii) to fund certain reserves. In conducting our analysis we have prepared the following tables which are included in this Official Statement under the headings "Capital Improvement and Financing Program" and "Financial Operations."

- Sources and Uses of Capital Funds
- Future Debt Service Requirements
- Projected Revenues
- Projected System Expense
- Forecasted Cash Flows

The forecast includes provisions for the financing of improvements to The City of New York (the "City") Water and Sewer System (the "System") as reflected in the CIP for the Reporting Period. The Forecasted Cash Flows set forth the ability of the System to meet the operating costs, working capital needs and other financial requirements of the System, including the debt service requirements associated with the Outstanding Bonds issued under the Authority's General Revenue Bond Resolution (the "Resolution") and obligations issued under the Authority's Second General Resolution (the "Second Resolution") and additional Bonds and Second Resolution Bonds whose issuance by the Authority during the six years ending June 30, 2009 is anticipated.

Revenues pledged to secure the Authority's Bonds are to be derived from the following sources: (i) all Revenues, (ii) all moneys or securities in any of the Funds and Accounts, and (iii) all other monies and securities to be received, held or set aside by the Authority or by any Fiduciary pursuant to the Resolution. The term "Revenues", as defined by the Resolution, includes, but is not limited to, all rents, fees, charges and other income and receipts derived by the New York City Water Board (the "Board") from users of the System, and certain investment proceeds received by the Board.

Moneys pledged to secure bonds issued under the Second Resolution are to be derived from: (i) all available amounts on deposit in the Subordinated Indebtedness Fund established under the Resolution and (ii) all moneys or securities in any of the funds and accounts established under the Second Resolution, except the Arbitrage Rebate Fund and the Debt Service Reserve Fund.

The Forecasted Cash Flows summarize the anticipated financial operations of the Authority for the Reporting Period. We have reviewed, to the extent practicable, the Authority's books, records, financial reports, and statistical data, and have conducted such other investigations and analyses as deemed necessary to assemble and analyze the forecast of revenues, revenue requirements, and debt service

coverage for the Reporting Period. We have performed various financial tests and analyses necessary to support our findings and conclusions. The Authority uses a fiscal year ending June 30, and all references in this Official Statement to a fiscal year ("Fiscal Year") relate to the 12 month period ending June 30 of the year shown.

Proposed improvements and additions to the System under the CIP for the Reporting Period were independently evaluated and confirmed by Metcalf & Eddy of New York, Inc. ("Metcalf & Eddy"). The Forecasted Cash Flows rely upon the conclusions of Metcalf & Eddy regarding the level of planned capital improvement expenditures required during the Reporting Period to maintain the System in good working order.

Based upon our studies, we offer the following opinions and conclusions:

1. It is our opinion that Revenues (including projected revenue increases resulting from anticipated future rate increases to be implemented by the Board), as set forth in the Forecasted Cash Flows, are currently and will be sufficient to meet the following requirements during the Reporting Period:

a. One hundred and fifteen percent (115%) of the principal of and interest on all Bonds issued under the Resolution, as the same shall become due and payable, for which such Revenues are pledged;

b. One hundred percent (100%) of the principal of and interest on bonds issued under the Second Resolution and other subordinate obligations payable from Revenues;

c. One hundred percent (100%) of all expenses of operation, maintenance, and repair of the water and wastewater system; and

d. One hundred percent (100%) of other Required Deposits as required by the Resolution.

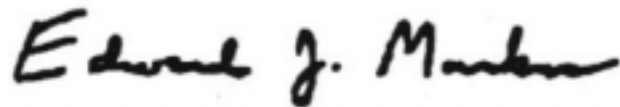
In addition, revenues are adequate to make all payments to the City.

2. In the analysis of the forecast of future operations summarized in this Official Statement, Black & Veatch has reviewed certain assumptions with respect to conditions, events and circumstances which may occur in the future. We believe that these assumptions are reasonable and attainable, although actual results may differ from those forecast as influenced by the conditions, events and circumstances which actually occur.

3. In our opinion, the water and wastewater rates, fees, and charges of the Board, including projected increases, compare favorably to the rates and charges of other major cities and are reasonable.

We appreciate the opportunity to be of service to the Authority in this important matter.

Very truly yours,



**BLACK & VEATCH NEW YORK LLP**

**GLOSSARY AND SUMMARY OF CERTAIN DOCUMENTS**

[THIS PAGE INTENTIONALLY LEFT BLANK.]

## GLOSSARY AND SUMMARY OF CERTAIN DOCUMENTS

## GLOSSARY

Set forth below are definitions of certain terms contained in the Agreement, the Lease and the Resolution and not otherwise defined in this Official Statement.

**Adjusted Aggregate Debt Service:** For any Fiscal Year and as of any date of calculation is the sum of the Adjusted Debt Service for all Series of Bonds Outstanding during such Fiscal Year.

**Adjusted Debt Service:** For any Fiscal Year, as of any date of calculation and with respect to any Series of Bonds, is the Debt Service for such Fiscal Year for such Series except that, if any Refundable Principal Installment of such Series of Bonds is included in Debt Service for such Fiscal Year, Adjusted Debt Service shall mean Debt Service determined as if each such Refundable Principal Installment had been payable over a period extending from the due date of such Refundable Principal Installment through the last date on which such Series of Bonds could have been stated to mature under the Act as in effect on the date of issuance of such Series, in installments which would have required equal annual payments of Principal Installments and interest over such period. Interest deemed payable in any Fiscal Year after the actual due date of any Refundable Principal Installment of any Series of Bonds shall be calculated at the actual interest cost payable on the Bonds of such Series (using the actuarial method of calculation).

**Aggregate Debt Service:** For any Fiscal Year, as of any date of calculation, the sum of the Debt Service for all Bonds Outstanding during such Fiscal Year.

**Authority Expenses:** All reasonable or necessary current expenses of the Authority, including all salaries, administrative, general, commercial, engineering, advertising, public notice, auditing and legal expenses, insurance and surety bond premiums, fees paid to banks, insurance companies or other financial institutions for the issuance of Credit Facilities, consultants' fees and charges, payment to pension, retirement, health and hospitalization funds, costs of public hearings, ordinary and current rentals of equipment and other property, lease payments for real property or interests therein, expenses, liabilities and compensation of any Fiduciary and all other expenses necessary, incidental or convenient for the efficient operation of the Authority.

**Authorized Newspaper:** The Bond Buyer or any other newspaper of general circulation printed in the English language and customarily published at least once a day for at least five days (other than legal holidays) in each calendar week in the Borough of Manhattan, City and State of New York, designated by the Authority.

**Authorized Representative:** In the case of both the Authority and the Board, their respective Chairman or Executive Director, or such other person or persons so designated by resolution of the Authority or the Board, as the case may be, and in the case of the City, the Mayor, unless a different City official is designated to perform the act or sign the document in question.

**Bond or Bonds:** For purposes of the Agreement and the Resolution (and as used in this Official Statement unless the context otherwise requires), the bonds, notes or other evidences of indebtedness issued by the Authority under and pursuant to the Act and the Resolution, including Parity Bond Anticipation Notes and Parity Reimbursement Obligations; but shall not mean Subordinated Indebtedness or other Bond Anticipation Notes or Reimbursement Obligations; and for purposes of the Lease, means any bonds, notes or other evidences of indebtedness for borrowed money issued by the Authority.

**Bond Counsel's Opinion:** An opinion signed by an attorney or firm of attorneys of nationally recognized standing in the field of law relating to revenue bonds of municipalities and public agencies, selected by the Authority and satisfactory to the Trustee.

**Bond Payment Date:** June 15 and December 15 of each year; provided, however, that if any such day is not a Business Day, then the Bond Payment Date shall be the next succeeding Business Day.

**Business Day:** Any day which is not a Saturday, Sunday or a day on which the New York Stock Exchange, banking institutions chartered by the State or the United States of America or the Note Trustee are legally authorized to close in the City.

**Cash Flow Requirement:** For each Fiscal Year and as of any date of certification, the amount, certified by the Authority to the Trustee and the Board equal to the difference between (A) the sum of (i) the estimated Aggregate Debt Service for such Fiscal Year, (ii) the Projected Debt Service for such Fiscal Year, (iii) the estimated Authority Expenses for such Fiscal Year, and (iv) the other Required Deposits estimated for such Fiscal Year and (B) (i) if the certification is made prior to the commencement of the Fiscal Year, the amount anticipated by the Authority as of such date of certification to be held by the Trustee, as of the first day of such Fiscal Year, in the Revenue Fund and (ii) if the certification is made after the commencement of such Fiscal Year, the amount which had been anticipated pursuant to (B) (i) above.

**Consulting Engineer:** Metcalf & Eddy of New York, Inc. or such other independent engineer or engineering firm of recognized standing selected by the Authority and satisfactory to the Board.

**Corporation:** The New York State Environmental Facilities Corporation and any successor entity which may succeed to its rights and duties respecting the State Revolving Fund.

**Cost or Costs of a Water Project:** The cost of construction, as such term is defined in the Act, including, without limiting the generality of the foregoing, the erection, alteration, improvement, increase, enlargement or rehabilitation of the System or a Water Project, the inspection and supervision thereof, the engineering, architectural, legal, fiscal, economic and environmental investigations and studies, designs, surveys, plans, specifications, procedures and other actions incidental thereto; the cost of the acquisition of all Property; the cost of demolishing, removing or relocating any buildings or structures on lands so acquired (including the cost of acquiring any lands to which such buildings or structures may be moved or relocated); the cost of all systems, facilities, machinery, appurtenances, equipment, financing charges and interest prior to, during and after construction (if not paid or provided for from revenues or other sources); the cost of engineering and architectural surveys, plans and specifications; the cost of consultants' and legal services; the cost of lease guarantee or bond insurance; other expenses necessary, reasonably related or incidental to the construction of such Water Project and the financing of the construction thereof, including the cost of Credit Facilities, the amounts authorized in the Resolution to be paid into any reserve or other special fund from the proceeds of Bonds and the financing or the placing of any Water Project in operation, including reimbursement to any governmental entity or any other person for expenditures that would be Costs of such Water Project and all claims arising from any of the foregoing.

**Counterparty:** An entity whose senior long term debt obligations, or whose obligations under an Interest Rate Exchange Agreement are guaranteed by a financial institution whose senior long term debt obligations, have a rating (at the time the subject Interest Rate Exchange Agreement is entered into) of Aa or better by Moody's Investors Service and AA or better by Standard & Poor's Ratings Group.

**Credit Facility:** A letter of credit, revolving credit agreement, standby purchase agreement, surety bond, insurance policy or similar obligation, arrangement or instrument issued by a bank, insurance company or other financial institution which provides for payment of all or a portion of the Principal Installments or interest due on any Series of Bonds or provides funds for the purchase of such Bonds or portions thereof.

**Debt Service:** For any Fiscal Year or part thereof, as of any date of calculation and with respect to any Series, means an amount equal to the sum of (a) interest payable during such Fiscal Year or part thereof on Bonds of such Series, except to the extent that such interest is to be paid from amounts representing Capitalized Interest and (b) the Principal Installments of the Bonds of such Series payable during such Fiscal Year or part thereof. Such interest and Principal Installments for such Series shall be calculated on the assumption that (x) no Bonds of such Series Outstanding at the date of calculation will cease to be Outstanding except by reason of the payment thereof upon stated maturity or upon mandatory redemption by application of Sinking Fund Installments and (y) Variable Rate Bonds will bear



interest at the greater of (A) the rate or rates which were assumed by the Authority in the Authority Budget for such Fiscal Year to be borne by Variable Rate Bonds during such Fiscal Year or (B) the actual rate or rates borne during such Fiscal Year on Variable Rate Bonds Outstanding during the 12 calendar months preceding the date of calculation.

**Debt Service Reserve Requirement:** As of any date of calculation, and for any Fiscal Year, the amount equal to the maximum Adjusted Aggregate Debt Service in the current or any future Fiscal Year on all Bonds Outstanding; provided, however, that, if (i) the payment of the Principal Installments of or interest on any Series of Bonds or portion thereof is secured by a Special Credit Facility, (ii) the payment of the Tender Option Price of any Option Bond of a Series is secured by a Special Credit Facility or (iii) the Authority has determined in a Supplemental Resolution authorizing the issuance of a Series of Bonds that such Series of Bonds will not be secured by the Common Account in the Debt Service Reserve Fund, the Supplemental Resolution authorizing such Series may specify the Debt Service Reserve Requirement, if any, for the Bonds of such Series.

**DEC:** The New York State Department of Environmental Conservation and any successor entity which may succeed to its rights and duties respecting the State Revolving Fund.

**Defeasance Obligations:** (A) any non-callable bonds or other obligations which as to principal and interest constitute direct obligations of, or are guaranteed by the United States of America, including obligations of any agency thereof or corporation which has been or may hereafter be created pursuant to an Act of Congress as an agency or instrumentality of the United States of America to the extent unconditionally guaranteed by the United States of America or (B) any other non-callable receipt, certificate or other evidence of an ownership interest in obligations or in specified portions thereof (which may consist of specified portions of the interest thereon) of the character described in subclause (A); provided, however, that, when used in connection with any Bond authorized to be issued by a Supplemental Resolution adopted on or after June 1, 2001, such term also means: (C) a non-callable obligation of the United States of America which has been stripped by the United States Department of the Treasury itself or by any Federal Reserve Bank (not including "CATS," "TIGRS" and "TRS" unless the Authority obtains Rating Confirmation with respect to the Bonds to be defeased); (D) the interest component of REFCORP bonds for which separate payment of principal and interest is made by request of the Federal Reserve Bank of New York in book-entry form; (E) an obligation of any state or territory of the United States of America, any political subdivision of any state or territory of the United States of America, or any agency, authority, public benefit corporation or instrumentality of such state, territory or political subdivision (i) the interest on which is excludable from gross income under Section 103 of the Code, (ii) that, at the time an investment therein is made or such obligation is deposited in any fund or account established pursuant to the Resolution, is rated in the highest rating category of the Rating Agencies, (iii) that is not subject to redemption prior to maturity other than at the option of the holder thereof or either (1) has irrevocably been called for redemption or (2) as to which irrevocable instructions have been given to call such obligation on a stated future date and (iv) the timely payment of the principal or redemption price thereof and interest thereon is fully secured by a fund consisting only of cash or obligations described in clauses (A), (B), (C), (D), (E) and (F), which fund may be applied only to the payment of principal, interest and redemption premium, if any, on the obligation secured thereby; and (F) a non-callable note, bond, debenture, mortgage or other evidence of indebtedness that, at the time acquired, is (i) issued or guaranteed by the Federal National Mortgage Association, the Federal Home Loan Mortgage Corporation, the Student Loan Marketing Association, the Federal Farm Credit System or any other instrumentality of the United States of America and (ii) rated in the highest rating category of the Rating Agencies; provided, further, that the term "Defeasance Obligations" shall not mean any interest in a unit investment trust or a mutual fund.

**Financial Guaranties:** (i) Irrevocable, unconditional and unexpired letters of credit issued by banking institutions the senior long-term debt obligations of which (or the holding company of any such banking institution) have (at the time of issue of such letter of credit) a rating of Aa2 or better by Moody's Investors Service and AA or better by Standard & Poor's Ratings Group; or (ii) an irrevocable and unconditional policy or policies of insurance in full force and effect issued by municipal bond insurers the obligations insured by which are eligible for a rating of Aa or better by Moody's Investors Service and AA

or better by Standard & Poor's Ratings Group; in each case providing for the payment of sums for the payment of Principal Installments of an interest on Bonds in the manner provided in the Resolution; and providing further that any Financial Guaranty of the type described in (i) above must be drawn upon, on a date which is at least thirty (30) days prior to the expiration date of such Financial Guaranty, in an amount equal to the deficiency which would exist if the Financial Guaranty expired, unless a substitute Financial Guaranty is acquired prior to such expiration date as provided in a related Supplemental Resolution.

**Fiscal Year:** The twelve-month period commencing on July 1 of each year; provided, however, that the Authority, the Board and the City may agree on a different twelve-month period as the Fiscal Year and in such event the dates set forth in the Agreement, the Lease and the Resolution shall be adjusted accordingly.

**Government Obligation:** A direct obligation of the United States of America, an obligation the principal of, and interest on which are guaranteed as to full and timely payment by the United States of America, an obligation (other than an obligation subject to variation in principal repayment) to which the full faith and credit of the United States of America are pledged, an obligation of a federal agency guaranteed as to full and timely payment by the United States of America and approved by the Authority, and a certificate or other instrument which evidences the ownership of, or the right to receive all or a portion of the payment of, the principal of or interest on, direct obligations of the United States of America.

**Interest Rate Exchange Agreement:** Any financial arrangement (i) that is entered into by the Authority with an entity that is a Counterparty at the time the arrangement is entered into; (ii) which provides that the Authority shall pay to such entity an amount based on the principal amount of a Series of Bonds, and that such entity shall pay to the Authority an amount based on the principal amount of such Series of Bonds, in each case computed in accordance with a formula set forth in such agreement, or that one shall pay to the other any net amount due under such arrangement; (iii) which has been designated in writing to the Trustee by an Authorized Representative of the Authority as an Interest Rate Exchange Agreement with respect to a Series of Bonds and (iv) which, in the opinion of Bond Counsel, will not adversely affect the exclusion of interest on Bonds from gross income for the purposes of federal income taxation.

**Investment Securities:** Include any of the following securities, if and to the extent the same are at the time legal investments by the Authority of the funds to be invested therein and conform to the policies set forth in any investment guidelines adopted by the Authority and in effect at the time of the making of such investment:

(i) direct obligations of, or obligations guaranteed as to principal and interest by, the State or direct obligations of any agency or public authority thereof, provided such obligations are rated, at the time of purchase, in one of the two highest rating categories by each Rating Agency then maintaining a rating on Outstanding Bonds;

(ii) (A) any bonds or other obligations which as to principal and interest constitute direct obligations of, or are guaranteed by the United States of America, including obligations of any agency thereof or corporation which has been or may hereafter be created pursuant to an Act of Congress as an agency or instrumentality of the United States of America to the extent unconditionally guaranteed by the United States of America or (B) any other receipt, certificate or other evidence of an ownership interest in obligations or in specified portions thereof (which may consist of specified portions of the interest thereon) of the character described in subclause (A) of this clause (ii);

(iii) obligations of any agency, subdivision, department, division or instrumentality of the United States of America; or obligations fully guaranteed as to interest and principal by any agency, subdivision, department, division or instrumentality of the United States of America;

(iv) banker's acceptances or certificates of deposit issued by a commercial bank (A) whose long-term debt obligations are rated by each Rating Agency then maintaining a rating on the

Outstanding Bonds at least equal to the rating on Outstanding Bonds that are not insured or otherwise secured by a Credit Facility or a Special Credit Facility, (B) that has its principal place of business within the State and (C) that has capital and surplus of more than \$100,000,000;

(v) corporate securities, including commercial paper and fixed income obligations, which are, at the time of purchase, rated by each Rating Agency then maintaining a rating on Outstanding Bonds in its highest rating category for comparable types of obligations;

(vi) repurchase agreements collateralized by securities described in clauses (ii) or (iii) above with any registered broker/dealer or with any domestic commercial bank whose long-term debt obligations are rated “investment grade” by each Rating Agency then maintaining a rating on Outstanding Bonds, provided that (1) a specific written repurchase agreement governs the transaction, (2) the securities are held, free and clear of any lien, by the Trustee or an independent third party acting solely as agent for the Trustee, and such third party is (a) a Federal Reserve Bank, or (b) a bank which is a member of the Federal Deposit Insurance Corporation and which has combined capital, surplus and undivided profits of not less than \$25 million, and the Trustee shall have received written confirmation from such third party that it holds such securities, free and clear of any lien, as agent for the Trustee, (3) the repurchase agreement has a term of thirty days or less, or the Trustee will value the collateral securities no less frequently than monthly and will liquidate the collateral securities if any deficiency in the required collateral percentage is not restored within five business days of such valuation, (4) the fair market value of the collateral securities in relation to the amount of the repurchase obligation, including principal and interest, is equal to at least 102% and (5) the repurchase agreement meets the guidelines then applicable to such investments of each Rating Agency then maintaining a rating on Outstanding Bonds;

(vii) investment agreements or guaranteed investment contracts with any financial institution whose senior long term debt obligations, or whose obligations under such an investment agreement or guaranteed investment contract, are guaranteed by a financial institution whose senior long term debt obligations, have a rating (at the time such agreement or contract is entered into) in one of the two highest rating categories for comparable types of obligations by each Rating Agency then maintaining a rating on the Bonds;

(viii) money market funds rated in the highest rating category for comparable types of obligations by each Rating Agency then maintaining a rating on the Bonds; and

(ix) municipal obligations, the payment of principal and redemption price, if any, and interest on which is irrevocably secured by obligations of the type referred to in clauses (i), (ii) or (iii) above and which obligations have been deposited in an escrow arrangement which is irrevocably pledged to the payment of such municipal obligations and which municipal obligations are rated in the highest rating category for comparable types of obligations by each Rating Agency then maintaining a rating on the Bonds.

**Leased Property:** The real and personal property and other rights therein leased by the City to the Board pursuant to Article II of the Lease.

**Local Water Fund:** The special trust fund by that name established by the Act in the custody of the Board into which all Revenues are required to be deposited promptly upon receipt thereof by the Board.

**Minimum Monthly Balance:** For each Series of Bonds Outstanding, the monthly amount calculated in accordance with Section 4.3(a) of the Agreement. See “Summary of Certain Documents—Summary of the Agreement—Minimum Monthly Balance” in this Appendix C.

**O&M Reserve Fund Requirement:** For each Fiscal Year, the amount equal to one-sixth ( $\frac{1}{6}$ ) of the Operating Expenses as set forth in the Annual Budget.

**Operating Expenses:** All reasonable or necessary current expenses of maintaining, repairing, operating and managing the System net of governmental operating aid, including: all salaries; administrative, general, commercial, architectural, engineering, advertising, public notice, auditing, billing, collection, enforcement and legal expenses; insurance and surety bond premiums; consultants’ fees;

payments to pension, retirement, health and hospitalization funds; taxes; payments in lieu of taxes; costs of public hearings; ordinary and current rentals of equipment or other property; hydrant rentals; lease payments for real property or interests therein (excluding certain amounts paid by the Board to the City pursuant to the Lease); depository expenses; reasonable reserves for maintenance and repair and all other expenses necessary, incidental or convenient for the efficient operation of the System; but only to the extent properly attributable to the Board or the System and payable by the Board to the City pursuant to the Lease and, except for certain administrative expenses of the Board, payable by the Board to the City pursuant to the Lease.

**Option Bonds:** Bonds which by their terms may be tendered by and at the option of the owner thereof for payment by the Authority prior to the stated maturity thereof, or the maturates of which may be extended by and at the option of the owner thereof.

**Outstanding:** As of any date, all Bonds theretofore or thereupon being authenticated and delivered under the Resolution except:

- (a) any Bonds canceled by the Trustee at or prior to such date;
- (b) any Bond (or portion thereof) for the payment or redemption of which there shall be set aside and held in trust under the Resolution either:
  - (i) moneys in an amount sufficient to pay when due the Principal Installments or Redemption Price thereof, together with all accrued interest,
  - (ii) Defeasance Obligations in such principal amounts, of such maturities, bearing such interest and otherwise having such terms and qualifications, as are necessary to provide moneys (whether as principal or interest) in an amount sufficient to pay when due the Principal Installments or Redemption Price thereof, together with all accrued interest, or
  - (iii) any combination of (i) and (ii) above,

and, if such Bond or portion thereof is to be redeemed, for which notice of redemption has been given as provided in Article VI of the Resolution or provision satisfactory to the Trustee has been made for the giving of such notice;

- (c) any Bond in lieu of or in substitution for which other Bonds have been authenticated and delivered; and
- (d) any Bond deemed to have been paid as provided in Section 1201(b) of the Resolution.

**Parity Bond Anticipation Notes:** Bond Anticipation Notes the interest on which is payable from and secured by a pledge of, and a lien on, a parity with all other Bonds.

**Permitted Encumbrances:** When used with reference to the System, (i) any and all liens, encumbrances, security interests or other defects in or clouds on title existing on the Effective Date, (ii) the Lease, (iii) easements, rights of way and exceptions which do not materially impair the operation or maintenance of the Leased Property or the Revenues therefrom, (iv) mechanics', materialmen's, warehousemen's and other similar liens, as permitted by law and liens for taxes at the time not delinquent or being contested and (v) agreements for the sale and leaseback of elements of the System.

**Principal Installment:** As of any date of calculation and with respect to any Series, so long as any Bonds thereof are Outstanding, (i) the principal amount of Bonds (including (x) any amount designated in, or determined pursuant to, the applicable Supplemental Resolution, as the "principal amount" with respect to any Bonds which do not pay full current interest for all or any part of their term) (y) the Tender Option Price of any Option Bonds which may be tendered for purchase or payment prior to the stated maturity thereof in accordance with the terms of the Supplemental Resolution authorizing such Option Bonds, unless such amount is secured by a Credit Facility which is not in default and (z) the principal amount of any Parity Reimbursement Obligations of such Series due (or so tendered for payment) on a certain future date for which no Sinking Fund Installments have been established, or (ii) the unsatisfied balance of any Sinking Fund Installments due on a certain future date for Bonds of such Series, or (iii) if

such future dates coincide as to different Bonds of such Series, the sum of such principal amount of Bonds and of such unsatisfied balance of Sinking Fund Installments due on such future date. "Principal Installment" does not include the principal of Parity Bond Anticipation Notes.

**Project Financing Agreement:** Any Project Financing Agreement to be entered into among the Authority, the City, DEC and the Corporation pursuant to the State Revolving Fund Act.

**Projected Debt Service:** For any Fiscal Year or part thereof means, as of any date of calculation and with respect to any Projected Series of Bonds, an amount, certified by the Authority to the Trustee and the Board, as provided in the Agreement, equal to the Debt Service estimated by the Authority to be payable during such Fiscal Year on such Projected Series.

**Projected Series of Bonds:** Any Series of Bonds described in an Authority Budget as anticipated to be issued in the Fiscal Year to which such Authority Budget relates.

**Rate Consultant:** The independent accountant or firm of independent accountants, or a management consultant or firm of management consultants, or independent engineer or firm of independent engineers, having, in any case, a recognized standing in the field of water and sewer system consulting selected by the Authority and satisfactory to the Board. The Rate Consultant may be the same firm as the Consulting Engineer.

**Rating Agencies:** Moody's Investors Service and Standard & Poor's Ratings Group and their respective successors and assigns.

**Rating Confirmation:** A written confirmation of each Rating Agency to the effect that the rating assigned to each of the Bonds rated by such Rating Agency will remain unchanged and will not be withdrawn, suspended or reduced as a consequence of some act or occurrence.

**Redemption Price:** When used with respect to a Bond or portion thereof, the principal amount thereof plus the applicable premium, if any, payable upon either optional or mandatory redemption thereof pursuant to the Resolution.

**Refundable Principal Installment:** Any Principal Installment for any Series of Bonds which the Authority intends to pay with moneys which are not Revenues, provided that such intent shall have been expressed in the Supplemental Resolution authorizing such Series of Bonds and provided further that such Principal Installment shall be a Refundable Principal Installment only through the date of the Authority Budget adopted during the Fiscal Year immediately preceding the Fiscal Year in which such Principal Installment comes due unless the Authority has delivered to the Trustee a certificate of an Authorized Representative that it has made provision for the payment of such Principal Installment from a source other than Revenues.

**Refunding Bond:** Any Bond authenticated and delivered on original issuance pursuant to Section 206 or Section 207 of the Resolution for the purpose of refunding any Outstanding Bonds or thereafter authenticated and delivered in lieu of or substitution for such Bond pursuant to the Resolution.

**Reimbursement Obligation:** The obligation of the Authority described in the Resolution to directly reimburse the issuer of a Credit Facility for amounts paid by such issuer thereunder, whether or not such obligation to so reimburse is evidenced by a promissory note or other similar instrument.

**Required Deposits:** For any Fiscal Year, amounts, if any, payable into the Authority Expense Fund, the Debt Service Reserve Fund and the Subordinated Indebtedness Fund but only to the extent such payments are required to be made from Revenues pursuant to the Resolution.

**Revenues:** (a) All the rents, fees, charges, payments and other income and receipts derived by the Board from users of the System, together with all operating aid therefor from any governmental entity, federal, State or local, to the Board, (b) investment proceeds and proceeds of insurance received by the Board (other than the proceeds of insurance with respect to the damage or destruction of all or any portion of the System), (c) Subsidy Payments derived by the Authority, (d) amounts derived by the Authority from a Counterparty pursuant to an Interest Rate Exchange Agreement, and (e) investment proceeds derived from amounts on deposit in the Funds and Accounts established hereunder that are

deposited or retained in the Revenue Fund or the Local Water Fund, and but shall not include (w) amounts required to be refunded because of billing or payment errors, (x) any amount attributable to any of the foregoing sources described in clause (a) which (i) is expressly excluded by the Agreement or the Lease, or (ii) is derived from a use of the System not directly related to the supply, treatment and distribution of water to the consumers thereof or the collection, disposal or treatment of sewage, (y) any amount from any governmental entity, federal, State or local, in aid of or for or with respect to the Costs of Water Projects, other than Subsidy Payments, or (z)(i) fines (excluding interest on late payments which shall constitute Revenues), (ii) amounts from the use of water to generate electricity, (iii) amounts from the State as a result of mandatory water discharges from reservoirs or (iv) amounts from the granting of easements, licenses, rights-of-way or other interests in the real property constituting a part of the System.

**Special Credit Facility:** With respect to any Series of Bonds or portion thereof, a Credit Facility (a) which provides funds for (i) the direct payment of the Principal Installments of and interest on such Bonds when due or (ii) the payment of the Principal Installments of and interest on such Bonds in the event amounts otherwise pledged to the payment thereof are not available when due or (iii) the payment of the Tender Option Price of any Option Bond which may be tendered to the Authority for purchase or payment in accordance with the Supplemental Resolution authorizing such Option Bond (in any case, regardless of whether such Credit Facility provides funds for any other purpose) and (b) which (i) requires the Authority to directly reimburse the issuer of such Credit Facility for amounts paid thereunder and (ii) provides that such obligation is a Parity Reimbursement Obligation.

**State:** The State of New York.

**State Revolving Fund:** The New York State Water Pollution Control Revolving Fund established pursuant to the State Revolving Fund Act.

**State Revolving Fund Act:** Chapter 565 of the laws of New York of 1989, as amended.

**Subordinated Indebtedness:** Any bond, note or other evidence issued by the Authority in furtherance of its corporate purposes under the Act and payable from the Subordinated Indebtedness Fund.

**Subsidy Payments:** Amounts payable to the Authority from any governmental entity, federal, State or local, in connection with Bonds of the Authority.

**Supplemental Resolution:** A resolution of the Authority authorizing the issuance of a Series of Bonds or otherwise amending or supplementing the Resolution.

**System:** The Water System and the Sewerage System, collectively, as such terms are defined in the Act.

**Tender Option Price:** With respect to any Option Bond tendered for purchase or payment, an amount equal to the principal amount thereof plus interest accrued and unpaid thereon from the immediately preceding Bond Payment Date to the date of such tender.

**Trustee:** The trustee appointed by the Authority pursuant to the General Resolution, and any successors thereto.

**Variable Rate Bond:** As of any date of determination, any Bond on which the interest rate borne thereby may vary during any part of its remaining term.

**Water Project:** Any sewerage facility, water facility or water and sewerage facility, as the case may be, including the planning, development, financing or construction thereof.

### **Summary of Certain Documents**

The following are brief summaries of certain provisions of the Agreement, the Lease and the General Resolution. These summaries do not purport to be complete and are subject in all respects to the provisions of, and are qualified in their entirety by, reference to the respective documents to which they relate.

## Summary of the Agreement

**Financing of Water Projects.** The Authority agrees to use its best efforts to finance all or a part of the Cost of all Water Projects described in Appendix A to the Agreement. In consideration for the Authority's issuance of the Bonds, the Board gives, grants, conveys and transfers to the Authority all of its right, title and interest in the Revenues, including without limitation, all of its rights to collect and receive said Revenues subject only to provisions of the Act, the Agreement and the Resolution permitting the application of said Revenues to the purposes therein set forth. The Board itself incurs no indebtedness under the terms of the Agreement, Lease, Resolution or any other document executed in connection therewith. (*Sections 2.1, 2.2 and 2.4*)

**Transfer of Funds.** The Authority shall deposit the proceeds of each Series of Bonds with the Trustee in accordance with the provisions of the Resolution and the Supplemental Resolution authorizing such Series; provided, however, that the portion of the proceeds designated to pay the Costs of any Water Project shall be held only in the Construction Fund established pursuant to the Resolution.

The Authority shall authorize payment of such Costs in the manner set forth in the Resolution once evidence thereof is provided in a Certificate signed by an Authorized Representative of the Board or City, as the case may be. Neither the Authority nor the Trustee shall be required to provide funds to pay the Costs of Water Projects from any source other than the Construction Fund, and neither the Authority nor the Trustee shall pay to the City from such Fund any amount in excess of that set aside for the purposes thereof, or for the Projects listed in Appendix A to the Agreement. (*Sections 3.1 and 3.2*)

**Local Water Fund.** The Board shall deposit all Revenues, as promptly as practicable after receipt, into the Local Water Fund. There shall also be deposited in the Local Water Fund all amounts received by the Board from the Trustee pursuant to the Resolution. (*Section 4.1*)

**Establishment of Certain Funds and Application of Revenues in Local Water Fund.** The Board shall establish two special funds (in addition to the Local Water Fund) to be held by the Board at a Depository: the Board Expense Fund and the Operation and Maintenance Reserve Fund, with the General Account therein. The Board shall hold such funds as trust funds and the amounts on deposit shall only be applied for the purposes provided in the Agreement.

Beginning on the first day of each month in each Fiscal Year, the Board is required to apply the Revenues in the Local Water Fund, *first*, to the Trustee for deposit in the Revenue Fund until the amount on deposit in the Revenue Fund equals the Minimum Monthly Balance for such month and the Trustee shall have received the amounts, if any, required to be deposited in the Authority Expense Fund, the Debt Service Reserve Fund and the Subordinated Indebtedness Fund for such month. Thereafter, in such month from the balance remaining in the Local Water Fund, the Board is required, after making provision for Board Expenses, to pay to the City  $\frac{1}{12}$ th of the operating expenses for such Fiscal Year. After making such payments, any amounts remaining in the Local Water Fund in each month are applied daily (i) to satisfy the Cash Flow Requirement (if the required payments to the City for Operating Expenses have been made), (ii) to satisfy required payments to the City for Operating Expenses (if the Cash Flow Requirement has been satisfied) or (iii) proportionately, to the Trustee for deposit in the Revenue Fund and to the City for the payment of Operating Expenses, until the total of all amounts deposited in the Revenue Fund during such Fiscal Year equals the Cash Flow Requirement and all Operating Expenses required to be paid shall have been paid. Thereafter, as long as the amount on deposit in the Revenue Fund in each month is equal to the Minimum Monthly Balance and the Cash Flow Requirement continues to be met, all such amounts in the Local Water Fund shall be paid as follows: *first*, to the Authority until the total of the amounts so paid equals the principal of and interest on any bonds, notes or other obligations of the Authority (other than Bonds, Bond Anticipation Notes, and Subordinated Indebtedness) payable within the then current Fiscal Year, together with all other amounts necessary to make the required deposits to the reserve and other funds and amounts established for such bonds, notes or other obligations; *second*, to the City until the amounts so paid are equal to the rental payment for such Fiscal Year and the unsatisfied balance, if any, of the rental payment for any prior Fiscal Year; and, *third*, to the Operation and Maintenance Reserve Fund, until the amount therein on deposit is equal to the O&M Reserve Requirement for such Fiscal Year. Any amounts remaining in the Local Water Fund on the last day of each Fiscal Year shall be paid to the General Account in the Operation and Maintenance Reserve Fund. (*Section 4.2*)

**Minimum Monthly Balance.** The Minimum Monthly Balance shall be calculated as of the first day of the month and shall be equal to the sum of:

(i) For each Series of Bonds which is Outstanding during the current Fiscal Year, an amount equal to the product obtained by multiplying (a) the difference between (1) the amount of interest due or projected to be due on the next succeeding Bond Payment Date for such Series and (2) the amount, if any, held in the applicable subaccount for such Series in the Capitalized Interest Account in the Debt Service Fund by (b) a fraction, the numerator of which is the number of full months since the end of the month preceding the last Bond Payment Date for such Series (or, with respect to the first Bond Payment Date for such Series, the number of full months since the last day of the month preceding the date of issuance of such Series) and the denominator of which is the number of months between Bond Payment Dates minus one (or, with respect to the first Bond Payment Date for a Series, the number of months between the last day of the month preceding the date of issuance of such Series and the first Bond Payment Date minus one); provided, however, that if this formula would produce (A) a fraction greater than one, then the fraction shall be equal to one, or (B) a denominator less than one, then the fraction shall be equal to one; plus

(ii) For each Series of Bonds which is Outstanding during the current Fiscal Year, an amount equal to the Principal Installment due or projected to be due on the next succeeding Bond Payment Date for such Series which falls within twelve months or less on which a Principal Installment is due, multiplied by a fraction, the numerator of which is the number of full months since the last day of the month preceding the last Bond Payment Date on which a Principal Installment was due (or, with respect to the first such Bond Payment Date, twelve minus the number of full months to the first Bond Payment Date on which a Principal Installment is due), and the denominator of which is eleven; provided, however, that if this formula would produce a fraction greater than one, then the fraction shall be equal to one. (*Section 4.3*)

**Deposits to Operation and Maintenance Reserve Fund.** There shall be deposited to the Operation and Maintenance Reserve Fund in each Fiscal Year from the sources described below the amount required, if any, so that the amounts on deposit therein satisfy the O&M Reserve Fund Requirement for the ensuing Fiscal Year.

Deposits to the Operation and Maintenance Reserve Fund may be made from the proceeds of the sale of Bonds of the Authority, from the Local Water Fund, or from any other moneys lawfully available therefor, subject to the following limitations:

(i) The maximum deposit to the Operation and Maintenance Reserve Fund from the proceeds of Bonds of the Authority, as of any time of calculation, may not exceed the O&M Reserve Fund Requirement then in effect, reduced by the cumulative sum of prior deposits thereto from proceeds of Bonds of the Authority.

(ii) Deposits to the Operation and Maintenance Reserve Fund from the Local Water Fund shall be subject to the priorities established in Section 4.2 of the Agreement.

(iii) If there shall be a deficit in the Operation and Maintenance Reserve Fund on May 1 of any Fiscal Year, and if as of such May 1 the Board does not project that available Revenues will at least equal the O&M Reserve Requirement for such Fiscal Year by June 30 of such Fiscal Year, then the Board shall include in its Annual Budget for the ensuing Fiscal Year an amount sufficient, together with other amounts available therefor, to at least equal the O&M Reserve Fund Requirement for the ensuing Fiscal Year.

If on July 1 of any Fiscal Year the amount on deposit in the Operation and Maintenance Reserve Fund is less than the O&M Reserve Fund Requirement, such deficit shall (subject to paragraph (i) above) be made up from the proceeds of the sale of Bonds issued during such Fiscal Year; provided, however, if, prior to May 1 of such Fiscal Year such deficit has not been made up from Bond proceeds, the Board shall include the amount of such deficit in its Annual Budget for the ensuing Fiscal Year and the amounts necessary to restore such deficit shall be deposited in the Operation and Maintenance Reserve Fund.



Amounts required to be deposited in the General Account shall be held separate and apart from other amounts held in the Operation and Maintenance Reserve Fund and applied as described below. *(Section 4.4)*

**Application of Moneys in the Operation and Maintenance Reserve Fund.** If on the first day of any month the Board has not paid to the City an amount equal to the product of (i) the amount required to be paid for Operating Expenses pursuant to Section 8.1 of the Lease, multiplied by (ii) a fraction the numerator of which is the number of months which have commenced during such Fiscal Year, and the denominator of which is 12, the Board shall withdraw from the Operation and Maintenance Reserve Fund and pay to the City, on demand, an amount equal to  $\frac{1}{12}$  of the amount so required to be paid pursuant to Section 8.1 of the Lease, or the entire balance in such Fund if less than sufficient. Amounts on deposit in the General Account may be applied (i) to purposes provided for in Section 4.2, (ii) to the payment of Bonds in accordance with Article XII of the Resolution or (iii) to the Costs of Water Projects, but shall be retained therein to the extent required by the Annual Budget. *(Section 4.5)*

**Application of Moneys in Board Expense Fund.** Amounts on deposit in the Board Expense Fund shall be applied by the Board solely for the purposes of paying expenses of the Board, in accordance with the Annual Budget. *(Section 4.6)*

**Application of Revenues After Default.** The Board has covenanted that if an “event of default” (as defined in the Resolution) shall occur, the Board shall pay or cause to be paid to the Trustee, upon its request, all moneys and securities then held by the Board in the Local Water Fund and thereafter the Revenues as promptly as practicable after receipt. *(Section 4.7)*

**Amounts Remaining.** Any amounts received or held by the Authority or the Trustee pursuant to the Resolution, any similar document or the Agreement after all Bonds and other evidences of indebtedness have been paid in full or are no longer Outstanding and after payment of all other obligations and expenses of the Authority, or provision for payment thereof has been made, shall be paid to the City.

Any payments by the City to the Water Board pursuant to Section 1045-h(3) of the Act shall be confined to consideration for the sale of goods or the rendering of services by the Water Board to the City pursuant to the Lease or the Agreement as contemplated by the Act. *(Section 4.8)*

**Rate Covenant.** The Board has covenanted and agreed to establish, fix and revise fees, rates or other charges for the use of or services furnished by the System which, together with any other available funds, are adequate to provide for (i) the timely payment of the Principal Installments of and interest on all Bonds and the principal of and interest on any other indebtedness of the Authority payable from Revenues, (ii) the proper operation and maintenance of the System, (iii) all other payments required for the System not otherwise provided for and (iv) all other payments required pursuant to the Agreement and the Lease. Without intending to limit the generality of the foregoing, the Board has also covenanted to establish and collect rates, fees and charges sufficient in each Fiscal Year so that Revenues collected in such Fiscal Year will be at least equal to the sum of (i) 115% of estimated Aggregate Debt Service and Projected Debt Service payable in such Fiscal Year (excluding any Refundable Principal Installment if payable from funds held in trust therefor and assuming with respect to Variable Rate Bonds that the effective rate of interest is that which the Authority determines so long as such rate is not less than the rate such Bonds bear at the time Aggregate Debt Service is determined), (ii) 100% of the Operating Expenses and Authority Expenses payable in such Fiscal Year and (iii) 100% of the amount necessary to pay the other Required Deposits for such Fiscal Year. However, a failure to generate such Revenues does not constitute an “event of default” if the Board takes timely action to correct any such deficit. The Board shall review, at least annually, such rates, fees and charges to determine whether such rates, fees and charges are, or will be, sufficient to meet the requirements thereof and shall promptly take action to cure or avoid any deficiency. Except to the extent required by Section 1045-j of the Act, as in effect on July 24, 1984, with regard to the requirement that tax exempt organizations be charged for service provided by the System or by existing agreements (including any successor agreements with Jamaica Water), the Board will not furnish or supply any product, use or service of the System free of charge or at a nominal charge. *(Section 6.1)*

**Consulting Engineer and Rate Consultant.** The Authority shall employ a Consulting Engineer and a Rate Consultant whose duties, respectively, shall be to make any certificates and perform any other acts required or permitted of the Consulting Engineer and the Rate Consultant under the Agreement and the Resolution. If so determined by the Authority, the same person or firm may perform the duties and functions of the Consulting Engineer and the Rate Consultant.

In each Fiscal Year, the Consulting Engineer and the Rate Consultant shall make an examination of, and shall report to the Authority, the Board, the City and the Trustee, on the properties and operations of the System. The report of the Rate Consultant shall set forth among other findings, the Rate Consultant's recommendation as to any necessary or advisable revisions of rates, fees and charges for the ensuing Fiscal Year and such other advice and recommendation as it may deem desirable. The Consulting Engineer's report shall set forth its findings as to whether the System has been maintained in good repair and sound operating condition, and its estimate of the amount, if any, required to be expended to place such properties in such condition and the details of such expenditures and the approximate time required therefor. The City covenants that if any such report of the Consulting Engineer shall set forth that the properties of the System have not been maintained in good repair and sound operating condition, it will promptly restore the properties to good repair and sound operating condition with all expedition practicable. (*Section 6.2*)

**Covenant to Operate and Maintain System.** The City has covenanted that it shall, at all times:

(a) in accordance with the advice and recommendations of the Consulting Engineer, operate the System properly and in a sound and economical manner and maintain, preserve, and keep the same preserved and kept with the appurtenances and every part and parcel thereof, in good repair, working order and condition, and from time to time make, or cause to be made, all necessary and proper repairs, replacements and renewals so that at all times the operation of the System may be properly and advantageously conducted, regardless of any failure on the part of the Board to make the payments to the City required by Section 8.1 of the Lease; provided, however, that nothing contained in the Agreement shall require the City to operate, maintain, preserve, repair, replace, renew or reconstruct any part of the System if there shall be filed with the Board, the Authority and the Trustee (i) a certificate of the Commissioner acting as the Authorized Representative of the City stating that in the opinion of the City abandonment of operation of such part of the System will not adversely affect the operation of the System or the amount of Revenues derived therefrom and is not prejudicial to the interests of the Board, the Authority or the Bondholders and (ii) a Certificate of the Consulting Engineer concurring with such statement;

(b) enforce the rules and regulations governing the operation, use and services of the System established from time to time by the Board or the City;

(c) observe and perform all of the terms and conditions contained in the Act, and comply with all valid acts, rules, regulations, orders and directions of any legislative, executive, administrative or judicial body having competent jurisdiction of the City or the System; provided, however, that the failure of the City to comply with the covenant contained in this subsection (c) for any period shall not constitute a default on its part so long as the City (i) is taking reasonable and timely steps to permit compliance and (ii) the City shall have delivered to the Board and to the Authority a Certificate of the Consulting Engineer which (1) sets forth in reasonable detail the facts and circumstances attendant to such non-compliance, (2) sets forth the steps being taken by the City to permit compliance, (3) sets forth the estimated date on which the City will be in compliance and (4) states that in the opinion of the Consulting Engineer such non-compliance during the period described will not adversely affect the operation of the System or the amount of Revenues to be derived therefrom; and

(d) not create or suffer to be created any lien or charge upon the System or any part thereof except for Permitted Encumbrances. (*Section 6.3*)

**Annual Budget.** On May 1 of each year (or on such later date as the Authority, the Board and the City may agree) the Authority shall deliver to the Board a certified copy of the Authority Budget for the

ensuing Fiscal Year showing the Cash Flow Requirement for such Fiscal Year. Based upon the information contained in (a) the Authority Budget, (b) the City's certification pursuant to Section 8.3 of the Lease and (c) the Certificate of the Consulting Engineer delivered to the Board pursuant to Section 8.3 of the Lease (collectively, the "Budget Documents"), the Board shall prepare the Annual Budget for the ensuing Fiscal Year. In addition to the information contained in the Budget Documents the Board shall also make provision in the Annual Budget for Board Expenses for the ensuing Fiscal Year, for the amount, if any, required to be deposited in the Operation and Maintenance Reserve Fund in accordance with Section 4.4 of the Agreement, and for the application of the amounts in the General Account therein. Thereafter, but in no event later than 15 days after the date of publication of the Executive Budget of the City, the Board shall adopt such Annual Budget. Promptly after adoption of the Annual Budget, and in no event later than June 10 (or such other date as the Authority, the Board and the City may agree) of each year, the Board shall establish the rates, fees and charges for the use of the System for the ensuing Fiscal Year. The Board may from time to time, either before or after commencement of the Fiscal Year to which it relates, amend the Annual Budget, but (except for its own expenses) only in accordance with and after receipt of amended Budget Documents. If as of the first day of any Fiscal Year an Annual Budget has not been adopted, the Annual Budget for the immediately preceding Fiscal Year shall be the Annual Budget for such Fiscal Year until a new Annual Budget is adopted. (*Section 6.4*)

**Tax Exemption.** The City, the Authority and the Board have covenanted that so long as any Bonds shall be Outstanding, no one will take any action, nor fail to take any action, which, if taken or not taken, as the case may be, would adversely affect the tax-exempt status of the interest payable on the Bonds then Outstanding, the interest on which is excluded from gross income under the Internal Revenue Code of 1986. (*Section 6.5(b)*)

**Discontinuance of Service.** The Board has covenanted to enforce or cause the City to enforce the rules and regulations providing for discontinuance of, or disconnection from, the supply of water or the provision of sewer service, or both, as the case may be, for non-payment of fees, rents, rates or other charges imposed by the Board, provided that such discontinuance or disconnection shall not be carried out except in the manner and upon the notice as is required of a waterworks corporation pursuant to Sections 89(b)(3)(a)-(c) and 116 of the Public Service Law of the State. (*Section 6.7*)

**Covenant of City as to Rates and Charges.** The City has covenanted that, upon the issuance of the Bonds by the Authority, the City will not thereafter levy user fees, rents and other charges with respect to the System until all Bonds are paid or are no longer Outstanding pursuant to the terms of the Resolution; provided, however, that the City may levy *ad valorem* taxes to pay the costs and expenses of the System or to pay the principal of and interest on any general obligation bonds of the City issued to finance the System or any part thereof. (*Section 6.9*)

**Books and Records.** Each of the Authority and the Board shall keep or cause to be kept proper books of record and account in which complete and correct entries shall be made of all transactions relating to their corporate purposes under the Act. In accordance with Section 1045-y of the Act, the Authority and the Board shall annually submit to the Mayor, the Comptroller and the Director of Management and Budget of the City a detailed report concerning their activities for the Fiscal Year. In addition, the Authority and the Board shall submit to the Mayor, the Comptroller and the Director of Management and Budget of the City audited annual financial statements of the Authority and the Board together with a report thereon of an accountant satisfactory to the Board. (*Section 6.11*)

**Liens.** Until the Bonds or other evidences of indebtedness issued by the Authority for its purposes under the Act have been paid in full or provision has been made therefor in accordance with the Resolution or similar document, the Agreement provides that the Board shall not create, and, to the extent it has the power to do so, shall not permit to be created, any lien upon or pledge of the Revenues except the lien and pledge thereon created by the Act. (*Section 6.12*)

**Security Interests.** Except to the extent provided in the Act, neither the Board nor the Authority may grant any Bondholder any security interest in any of the assets or Properties of the Board. (*Section 6.13*)

**Financing through State Revolving Fund.** In connection with the financing of Water Projects by the Authority with funds provided from the State Revolving Fund, the City may enter into a Project Financing Agreement or Agreements among DEC, the Corporation and the Authority and make in any such agreement certain representations, warranties, covenants and agreements. (*Section 6.16*)

**Agreement of the State.** Under the provisions of the Agreement, the parties pledge and agree, for and on behalf of the State as provided in the Act, that the State will not alter or limit the rights vested by the Act in the Authority or the Board to fulfill the terms of any agreement made with or for the benefit of the Bondholders, or in any way impair the rights and remedies of Bondholders, until the Bonds, together with the interest thereon, interest on any unpaid installment of interest, and all costs and expenses incurred in any action or proceeding by or on behalf of such holders, are fully met and discharged. (*Section 7.1*)

**Events of Default and Remedies.** An “event of default” or a “default” means any one of the following events: (i) failure by the Board to pay the Authority those amounts required under the Agreement; (ii) failure of the City or the Board to observe any covenant, term or condition of the Agreement (other than the payments the Board shall make to the Authority) and such failure shall have continued for a period of sixty (60) days after written notice, specifying such failure and requesting that it be remedied, is given to the City or the Board, or both, by the Authority unless the Authority shall agree in writing to extend such time prior to its expiration, provided such extension shall not be unreasonably withheld if the City or the Board has instituted and is diligently pursuing corrective action which cannot be completed within the applicable period; (iii) the Authority shall file a petition, or otherwise seek relief, under any federal or State bankruptcy or similar law; and (iv) the terms, conditions and security provided under the Agreement and the Resolution or the respective provisions of the Act pursuant to which the Resolution has been adopted or the Bonds have been issued or entered into (including, without limitation, the provisions under which the lien upon the Revenues has been created pursuant to the Agreement and the Resolution and the provisions establishing the powers and obligations of the Board and the relationship of the Authority to the Board and the City) shall be materially and adversely limited, altered or impaired by any legislative action or any final judgment. (*Section 8.1*)

Whenever an event of default shall have occurred and be continuing, the Authority and the Trustee may take whatever legal action may appear necessary or desirable to: (i) collect the payments then due and as they thereafter become due and (ii) so long as any Bonds are Outstanding, enforce performance and observance of any obligation or covenant of the City or the Board under the Agreement. In addition, if the Board defaults in making the payments to the Authority required under the Agreement as a result of its failure to impose sufficient fees, rates, rents or other charges, the Authority may petition for the appointment of a receiver to administer the affairs of the Board in order to achieve Revenues sufficient to make such payments by establishing fees, rates, rents or other charges at least sufficient therefor. The remedies conferred upon or reserved to the Authority in respect of any event of default are not exclusive of other available remedies, but shall be in addition to every other remedy given under the Agreement or existing at law or in equity or by statute. (*Sections 8.2 and 8.3*)

**Termination.** The Agreement shall terminate and the covenants and other obligations contained therein shall be discharged and satisfied, when (i) payment of all indebtedness of the Authority has been made or provided for in accordance with the Resolution or similar document securing such indebtedness and (ii) either all payments required thereunder have been made in full, or provision for such payments satisfactory to the Authority has been made, or the City pays or assumes all liabilities, obligations, duties, rights and powers of the Authority under the Agreement. (*Section 9.1*)

**Amendments.** The parties to the Agreement may enter into any amendment, change or modification of the Agreement (if in writing, signed by each of the parties and consented to in writing by the Trustee if required by the Resolution) including, without limitation, amendments to Appendix A to the Agreement; provided that the parties shall enter into no such amendment, change or modification which materially adversely affects the rights of the holders of any Bonds by modifying or revoking certain enumerated provisions of the Agreement without first complying with the applicable provisions of the Resolution. (*Section 10.1*)

**Conflicts.** The Agreement provides that its provisions shall not change or in any manner alter the terms of the Resolution, or the security, rights or remedies of the Trustee or the Bondholders. In the event any provision of the Agreement conflicts at any time, or in any manner, with the provisions of the Resolution or any Bond, the provisions of the Resolution or Bond shall be controlling and conflicting provisions of the Agreement shall be disregarded. *(Section 12.1)*

### **Summary of the Lease**

**Term of Lease and Demise of Leased Property.** The City has leased the Leased Property to the Board for the term of the Lease (the “Lease Term”). The Lease Term commenced on the Effective Date (July 1, 1985) and continues until the later of the 40th anniversary of the Effective Date or the date on which all bonds, notes or other obligations of the Authority are paid in full or provision for such payment is made pursuant to the resolution, trust indenture or other instrument under which such bonds, notes or other obligations are issued. During the Lease Term the Board may use the Leased Property only for its corporate purposes and upon the terms and conditions contained in the Lease.

The Leased Property includes (whether now in use or hereafter acquired, and whether or not located within the boundaries of the City) all of the City’s right, title and interest in: (i) the City’s sewerage system, including but not limited to all plants, structures, equipment and other real and personal property or rights therein acquired, rehabilitated or constructed (including all work in progress as soon as commenced) and used or to be used for the purpose of collecting, treating, pumping, neutralizing, storing and disposing of sewage, including, but not limited to, main, collecting, outlet or other sewers, pumping stations, groundwater recharge basins, backflow prevention devices, sludge dewatering facilities, vessels, barges, clarifiers, filters and phosphorous removal equipment, vehicles and other property used in connection with the sewer system; (ii) the City’s water system, including but not limited to all plants, structures and other real and personal property or rights therein, acquired, rehabilitated or constructed (including all work in progress as soon as commenced) and used or to be used for the purpose of supplying, distributing, accumulating or treating water, including, but not limited to, reservoirs, basins, dams, canals, aqueducts, pipelines, mains, pumping stations, water distribution systems, intake systems, water-works, sources of water supply, purification or filtration plants, water meters and rights of flowage or diversion, vehicles and other property used in connection with the water system; and (iii) any other materials, supplies, plans and property contained in the above-mentioned plants and structures incidental to, or necessary or useful and convenient for, the operation of such facilities; provided, however, that the Leased Property shall not include the City’s right, title and interest in the following: (i) any property or rights of the City the conveyance of which pursuant to the Lease would cause a reversion to or in favor of, or permit a reentry by or in favor of, any third party; (ii) all mines and minerals whatsoever (but not including surface or subsurface waters) now or hereafter found and discovered, crops and timber, on or under the lands to be conveyed pursuant to the Lease; with power and authority for the City to perform certain mineral extraction and agricultural/timber activities; provided, however, that the City shall not undertake any such activities which interfere with the operation, maintenance or collection of Revenues of the System. *(Section 2.1)*

**Right of City to Enter Leased Property.** The City retains the right to enter upon any portion of the Leased Property, to use any property not constituting a part thereof which is located in, across or upon the Leased Property or for any purpose unless, in the reasonable judgment of the Board, such entry or use would adversely affect the collection of Revenues. *(Section 2.2)*

**Substitution of Board for City.** Where necessary or desirable and to the extent permitted by law, the City and the Board agree to use their best efforts to substitute the Board for the City with respect to any application or proceedings filed or commenced in relation to the Leased Property with the various State and Federal regulatory bodies having jurisdiction. *(Section 2.5)*

**Indemnification.** The City agrees, to the extent permitted by law and subject to certain conditions, to hold the Board harmless from any and all liability, loss or damage from or in connection with any act the Board does or omits in the exercise of its powers if taken or omitted in good faith and in pursuance of its corporate purposes. *(Sections 3.1, 3.2 and 7.2)*

**Operation and Maintenance of the Leased Property.** The City shall administer and operate the Leased Property, maintain the Leased Property in good and safe order and condition and make all repairs therein. The City's duty to "maintain" and "repair" shall include all necessary repairs, replacements, renewals, alterations and additions, whether structural, non-structural, ordinary or extraordinary and its duty to "administer" shall include, without limitation, the enforcement of regulations of the Board and the City relating to the use of the System. However, the Lease shall not impose any obligation or liability upon the City for the administration, operation, maintenance and repair of the System not previously imposed upon it in connection with its prior operation and maintenance of the System. Both the Board and the City shall use all reasonable care to prevent the occurrence of waste, damage or injury to the Leased Property. The System shall be used and operated and maintained in accordance with all applicable laws, rules and regulations. *(Sections 4.1, 4.2 and 4.3)*

**Construction and Acquisition.** The Board authorizes the City to perform the construction and effectuation of any Water Project specified in the Agreement and the City may incur Costs in connection therewith. The City may acquire all real and personal property, or any interest therein, necessary or useful for the construction or effectuation of a Water Project; provided that all such property or interest acquired by the City through the exercise of the power of eminent domain shall be taken in the name of the City. *(Sections 5.1, 5.2 and 5.3)*

**Billing and the Levy of Water and Sewer Charges.** The City has agreed to provide billing services to the Board. Such services include but are not limited to: (i) notification to users of the System of the water and sewer charges levied by the Board, (ii) collection of such charges (including the City's use of its power of enforcement and collection of unpaid taxes under the laws of the State to enforce and collect any delinquent water and sewer charges from the persons and property liable therefor) and (iii) maintenance of the books, records and accounts of the billing systems. *(Sections 6.1 and 6.2)*

**Late Payments.** All late payments of water and sewer charges are the property of the Board and shall be collected by the City on behalf of the Board. Notwithstanding the foregoing, the Board has assigned to the City all of its rights and interest in and to all outstanding charges levied and uncollected on all properties at the time title thereto is vested in the City pursuant to *in rem* proceedings in consideration for the City's payment to the Board, in each Fiscal Year after the Effective Date, of an amount equal to 2% of such outstanding charges (unless, during the Lease Term, the City and the Board mutually agree on a different procedure for allocating such outstanding charges). *(Section 6.3)*

**Discontinuance of Billing Services.** If either the City or the Board no longer desires that the City provide the Board with billing services, the party desiring termination shall give written notice of such fact to the other party at least two years prior to the termination. Notwithstanding such termination of billing services, Section 6.2 of the Lease shall remain in full force and effect. *(Section 6.4)*

**Legal Services.** The Board has hired the City's Law Department to provide it with legal services. However, the Board may hire a different attorney or firm of attorneys to provide it with legal services. If the Board retains counsel to defend a claim against it without the prior approval of the Corporation Counsel of the City (which approval shall not be unreasonably withheld), the Board shall not be entitled to the indemnification from the City provided in Article III of the Lease with respect to such claim, unless the City elects in writing to provide such indemnification. *(Sections 7.1 and 7.2)*

**Payments of Costs by the Board.** The Board has agreed to pay to the City amounts sufficient to: (i) pay the cost of administration, maintenance, repair and operation of the Leased Property, including overhead costs incurred by the City attributable to the Leased Property (but less the amount of any governmental operating aid received or receivable within the current Fiscal Year with respect to the System), the cost of materials and supplies, and the amount of any judgment or settlement paid by the City arising out of a tort claim (but only if the costs of such claim are not otherwise reimbursed, the City's liability for such claim is related to Construction of a Water Project or operation or maintenance of the System and the costs of such claims do not exceed for any Fiscal Year 5% of the aggregate revenues shown on the Board's last year-end audited financial statements); (ii) reimburse the City for capital Costs incurred by the City in the Construction of Water Projects (if requested by the City and not otherwise reimbursed) including, without limitation, the payment of any judgment or settlement arising out of a

contract claim related to the Construction of any Water Project; (iii) pay the cost of billing and collection services provided by the City; (iv) pay the cost of legal services provided by the City; and (v) reimburse the City for the compensation, or the costs of the services, of any City officers and employees provided on a full-time or part-time basis to the Board. (*Section 8.1*)

**Base Rental Payments.** In addition, the Board shall pay the City a rental payment for the System, but only to the extent requested by the City, and not to exceed the greater of (i) the principal and interest payable on general obligation bonds issued by the City for water and sewer purposes and certified by the City to be paid within such Fiscal Year, or (ii) 15% of the amount of principal and interest payable on the Bonds of the Authority and certified by the Authority to be paid within such Fiscal Year. (*Section 8.2*)

**Method of Payment.** The City shall certify within five business days after publication of the City's Executive Budget for the ensuing Fiscal Year the (i) amount which the City reasonably anticipates it will expend in connection with the costs described in Section 8.2 of the Lease and (ii) the amount of the payments described in Section 8.1 of the Lease; provided that, prior to the Board's payment to the City the Board shall have received, in addition to such certification by the City, a certificate of the Consulting Engineer to the effect that such amounts certified by the City for such payments and costs are reasonable and appropriate. Upon the Board's payment of all such amounts so certified or requested and any other payments required under the Act, or, after provisions for their payment have been made, the Board shall pay to the City, as Additional Rent in each Fiscal Year, any surplus of funds received. (*Section 8.3*)

**Disposition of Property.** The Board agrees that it will not sell, lease, sublease, assign, transfer, encumber (other than Permitted Encumbrances) or otherwise dispose of any part of the Leased Property, or any other real property or personal property which may be acquired by the Board, or its interest in the Lease, without the prior written approval of the City.

The City will not sell, transfer or otherwise dispose of real property or personal property included in the Leased Property without the Board's written consent. In the case of personal property, the value of which is less than \$1 million per unit (or of greater value if the Board designates), the Board will adopt rules and procedures for the expedited disposition thereof. Upon the City's request to dispose of any real property or personal property valued in excess of \$1 million, the Board will give such consent only upon receipt of a certificate signed by the Consulting Engineer to the effect that such real or personal property may be disposed of without materially adversely affecting the Revenues of the System or impairing the ability of the Board to make any payments required by the Lease or the Agreement or any other agreement to which it may be a party or be bound. The City may also, with the prior written consent of the Board, grant interests in the Leased Property which, in the reasonable judgment of the Board, do not interfere with the operation and maintenance of the System and the collection of the Revenues from the System. (*Section 11.1*)

**Encumbrances.** The Board may not encumber the Leased Property without the prior written approval of the City. The City may grant temporary licenses for use of the Leased Property which do not interfere with the operation and maintenance of the System or the collection of Revenues therefrom. (*Section 11.3*)

### **Summary of the Resolution**

*Terms used in this Summary of the Resolution shall have the meanings ascribed thereto in "APPENDIX C—GLOSSARY AND SUMMARY OF CERTAIN DOCUMENTS—Glossary".*

**Pledge of Revenues and Funds.** The Authority pledges for the payment of the Bonds, in accordance with their terms and the provisions of the Resolution, the Act and the Agreement permitting the application thereof for or to the purposes and on the terms and conditions therein set forth: (i) all Revenues, (ii) all moneys or securities in any of the Funds and Accounts created under the Resolution, except that moneys or securities on deposit in a Special Account are pledged only to the Series of Bonds to which such Account relates and moneys or securities on deposit in the Common Account are pledged only to the Bonds for which a Special Account has not been established pursuant to the Resolution, and (iii) all other moneys and securities to be received, held or set aside by the Authority or by any Fiduciary pursuant to the Resolution.

The Act provides that (i) the pledges made by the Resolution are valid, binding and perfected from the time when they are made and property so pledged shall immediately be subject to the lien of such pledges without any physical delivery thereof or further act, (ii) the lien of such pledges shall be valid, binding and perfected as against all parties having claims of any kind in tort, contract or otherwise against the Authority irrespective of whether such parties have notice thereof and (iii) no instrument by which such pledges are created nor any financing statement need be recorded or filed. Accordingly, no financing statements have been or will be filed. Based upon the foregoing, the Authority represents in the Resolution that under the laws of the State (i) the Resolution creates valid and binding pledges in favor of the Holders from time to time of the Bonds, enforceable in accordance with the terms thereof, (ii) the pledges made thereby and each pledge made to secure obligations of the Authority which, by the terms thereof, are prior to or of equal rank with such pledge are and shall be prior to any judicial lien thereafter imposed on the property pledged thereby to enforce a judgement against the Authority on a simple contract and (iii) no instrument by which such pledges are created nor any financing statement need be recorded or filed in order to establish or maintain such priority. The Authority further represents in the Resolution that the Authority has not made a pledge of, granted a lien on or security interest in, or made an assignment or sale of the Revenues or any other property pledged thereby that is prior to or of equal rank with the pledge made thereby and neither the Revenues nor any other property pledged thereby have been described in any financing statement. Except as expressly permitted by the Resolution, the Authority shall not make or suffer to exist any pledge or assignment of, lien on or security interest in the Revenues or other property pledged thereby that is prior to or of equal rank with the pledge made thereby, or file any financing statement describing any such pledge, assignment, lien or security interest, except in connection with pledges, assignments, liens or security interests expressly permitted by the Resolution.

As further security for the payment of the principal or Redemption Price of and interest on the Bonds, the Authority, under the Resolution, assigns, transfers and pledges to the Trustee all of its rights and interests under and pursuant to the Agreement (excluding rights to notice and other procedural rights, its right to indemnification and rights and interests not material to Bondholders), including, without limiting the generality of the foregoing, the present and continuing right: (i) to make claim for, collect or cause to be collected or receive or cause to be received, from the Board, all Revenues thereunder, (ii) to bring actions and proceedings thereunder for the enforcement thereof, and (iii) to do any and all things which the Authority is or may become entitled to do under the Agreement; provided that such assignment shall not impair or diminish any obligation of the Authority under the Agreement.

The Bonds are special obligations of the Authority payable solely from the Revenues and other amounts described in the Resolution and do not and will not constitute an indebtedness of the State, the City or the Board and neither the State, the City nor the Board shall be in any way liable thereon. (*Sections 203 and 501*)

**Establishment of Funds and Accounts.** The Resolution establishes the following Funds:

- (1) Construction Fund;
- (2) Revenue Fund;
- (3) Debt Service Fund;
- (4) Authority Expense Fund;
- (5) Debt Service Reserve Fund;
- (6) Subordinated Indebtedness Fund;
- (7) Surplus Fund; and
- (8) Arbitrage Rebate Fund.

The Resolution establishes in the Debt Service Reserve Fund a separate account known as the “Common Account”, and provides that any Supplemental Resolution which authorizes a Special Credit Facility may establish one or more “Special Accounts” in the Debt Service Reserve Fund. The Resolution also establishes in the Debt Service Reserve Fund a separate account to be known as the “Capitalized Interest Account”.



The Trustee shall hold all of the Funds and Accounts, except the Authority Expense Fund, which shall be held by the Authority.

The Trustee is directed to make withdrawals and transfers from the Funds and Accounts established by the Resolution in order to comply with any agreement entered into upon or after the date of issuance of the Authority's Fiscal 1987 Series A Bonds providing for the rebate of certain arbitrage earnings to the United States. (*Section 502*)

**Construction Fund.** The Authority shall deposit from time to time in the Construction Fund the net proceeds from the sale of each Series of Bonds and make the deposits in the Funds and Accounts required by the applicable Supplemental Resolutions. The Authority shall also deposit from time to time in the Construction Fund any other amounts required to be deposited therein pursuant to the Resolution or the Agreement, including amounts received by the Authority for or in connection with the System and determined by the Authority to be deposited therein. Any proceeds of insurance maintained by the Board or the City against physical loss of or damage to the System, or of contractors' performance bonds pertaining to the construction of the System, shall also be paid into the Construction Fund.

Except as otherwise provided, amounts in the Construction Fund may only be expended to pay Costs of Water Projects (including Costs of Issuance). The Trustee shall make payments from the Construction Fund, except as otherwise provided, only upon receipt of a Disbursement Request signed by an Authorized Representative of the Authority.

To the extent that other moneys are not available therefor in any other Fund or Account, amounts in the Construction Fund shall be applied to the payment of principal of and interest on Bonds when due. (*Section 503*)

**Allocation of Revenues—Revenue Fund.** The Authority shall cause all Revenues received from the Board pursuant to the Agreement or otherwise to be paid to the Trustee and deposited promptly upon receipt in the Revenue Fund. There shall also be deposited in the Revenue Fund all other amounts required by the Resolution or the Agreement to be so deposited. (*Section 504*)

**Payments Into Certain Funds.** From the Revenues in the Revenue Fund, the Trustee shall make, as soon as practicable in each month, the following deposits in the following order:

(i) to the Debt Service Fund all such amounts until the amount therein on deposit in such month equals the Minimum Monthly Balance for such month for all Series of Bonds Outstanding;

(ii) from the balance, if any, remaining in such month after making the deposits required in (i) above, to the Authority Expense Fund the entire balance until the total on deposit therein in such month is equal to the product obtained by multiplying (A) the sum of the Authority Expenses for the then current Fiscal Year plus (if included in the Authority Budget for the then current Fiscal Year) an amount (the "Reserve for Expenses") equal to one-sixth of such Authority Expenses by (B) a fraction, the numerator of which is 12 minus the number of full months, excluding the month of calculation, remaining in the Fiscal Year, and the denominator of which is 12;

(iii) from the balance, if any, remaining after making the deposits required in (i) and (ii) above, *first*, to the Common Account in the Debt Service Reserve Fund, the amount, if any, necessary to make the total on deposit in the Common Account equal to the Debt Service Reserve Requirement for the Bonds to which such Common Account relates or, if less than sufficient, the entire balance and, *second*, to each Special Account until the amount therein on deposit equals the Debt Service Reserve Requirement for the Bonds to which each Special Account relates; provided, however, if the balance remaining is less than sufficient to credit in full each Special Account, credit shall be made pro rata among all Special Accounts in the same ratio as the Debt Service Reserve Requirement related to such Special Account bears to the sum of the Debt Service Reserve Requirements for all of the Bonds related to the Special Accounts; and

(iv) from the balance, if any, remaining after making the deposits required in (i), (ii) and (iii) above, to the Subordinated Indebtedness Fund the amount required to be deposited in accordance with the Authority Budget, or the entire balance, if less than sufficient.

Beginning with the first day of each Fiscal Year, the Trustee shall calculate the amounts deposited in the Revenue Fund on a daily basis until the total of all amounts deposited therein during such Fiscal Year is at least equal to the Cash Flow Requirement. On such date, if any, the Trustee is directed to give the notice to the Authority and the Board provided in Section 4.3(b) of the Agreement. Thereafter, during each Fiscal Year, no further Revenues shall be paid to the Trustee pursuant to paragraph Fourth of Section 4.2(c) of the Agreement so long as the Cash Flow Requirement, as the same may be revised from time to time, continues to be met. *(Section 505)*

**Debt Service Fund.** The Trustee shall, for each Series of Bonds Outstanding, pay from the Debt Service Fund the amounts due on each Bond Payment Date for the payment of the Principal Installments, if any, and from the moneys in the Debt Service Fund, including moneys in the Capitalized Interest Account in such Fund, interest on the Outstanding Bonds and on the redemption date or date of purchase, the amounts required for the payment of accrued interest on Bonds to be redeemed or purchased on such date unless the payment of such accrued interest shall be otherwise provided.

The Trustee may, and if so directed by an Authorized Representative of the Authority shall, prior to the forty-fifth day preceding the due date of each Sinking Fund Installment, apply the amounts accumulated in the Debt Service Fund for such Sinking Fund Installment, together with any interest on the Bonds for which such Sinking Fund Installment was established: (i) to the purchase of Bonds of like Series and maturity at prices (including any brokerage and other charges) not exceeding the Redemption Price payable for such Bonds when such Bonds are redeemable with such Sinking Fund Installment plus unpaid interest accrued or (ii) to the redemption of such Bonds, if redeemable by their terms, at or below said Redemption Price. Upon such purchase or redemption of any Bond, the Trustee shall then credit an amount equal to the principal of the Bond so purchased or redeemed toward the next Sinking Fund Installments thereafter to become due and the amount of any excess over the amount of such Sinking Fund Installment shall be credited against future Sinking Fund Installments in direct chronological order.

In any event, the Trustee shall, as soon as practicable after the forty-fifth day preceding the due date of any such Sinking Fund Installment, call for redemption a sufficient amount of Bonds of like Series and maturity to complete the retirement of the principal amount specified for such Sinking Fund Installment of such Bonds whether or not it then has moneys in the Debt Service Fund to pay the applicable Redemption Price thereof on the redemption date. The Trustee shall apply to the redemption of the Bonds on each such redemption date the amount required for the redemption of such Bonds. *(Sections 506 and 514)*

**Authority Expense Fund.** The Authority shall apply amounts credited to the Authority Expense Fund to the payment of Authority Expenses. Any moneys in the Authority Expense Fund which the Authority determines are in excess of that needed to meet the sum of the unpaid Authority Expenses for such Fiscal Year plus (if such amount was included in the Authority Budget for such Fiscal Year) the Reserve for Expenses, shall be applied toward any deficiencies in the following Funds and Accounts in the order stated: the Debt Service Fund, Debt Service Reserve Fund and Subordinated Indebtedness Fund. Any remaining amounts shall be credited to the Revenue Fund. *(Section 507)*

**Debt Service Reserve Fund.** The Resolution establishes a Debt Service Reserve Fund and a Common Account therein. In addition, the Resolution provides that any Supplemental Resolution which provides for a Special Credit Facility to secure the principal, interest or Tender Option Price of any Bonds may establish one or more "Special Accounts" in the Debt Service Reserve Fund. From the proceeds of each Series of Bonds there shall be deposited in the Debt Service Reserve Fund the amount, if any, necessary to make the amount on deposit therein equal to the Debt Service Reserve Requirement, after giving effect to the issuance of such Bonds; and all such amounts will be credited to the Common Account, unless a Supplemental Resolution requires a deposit in a Special Account. Amounts on deposit in the Common Account will be applied, to the extent necessary, to pay the Principal Installments of and interest on the Bonds; provided, however, that the amounts in the Common Account may not be applied to pay the Principal Installments or Tender Option Price of or interest on Bonds for which such payments are secured by a Special Credit Facility, if the Supplemental Resolution authorizing such Bonds has established a Special Account. Likewise, amounts in any Special Account may not be applied to pay the

Principal Installments of or interest on any Bond for which such payments may be made from the Common Account. Amounts on deposit in each of the Accounts in the Debt Service Reserve Fund shall be applied, to the extent other funds are not available in the Surplus Fund, the Subordinated Indebtedness Fund and the Authority Expense Fund, to pay the Principal Installments of, and interest on the Bonds to which such Account relates when due. Amounts so applied shall be derived first from cash or Investment Securities on deposit, and second from draws and demands on Financial Guaranties.

If, as of June 30 of each year, the amount in any Account in the Debt Service Reserve Fund exceeds the applicable Debt Service Reserve Requirement after giving effect to any Financial Guaranty deposited in such Fund, the Trustee shall, on the first business day of the following Fiscal Year, withdraw from such Account the amount of any excess therein over the applicable Debt Service Reserve Requirement as of the date of such withdrawal for deposit into (i) the Arbitrage Rebate Fund, the amount estimated by the Authority to be required by the Code to be rebated to the Department of the Treasury, (ii) the Surplus Fund, the amount required to be deposited therein in accordance with the Authority Budget, and (iii) the Revenue Fund, the amount of any excess then remaining in the Debt Service Reserve Fund over the applicable Debt Service Reserve Fund Requirement.

Whenever the amount (exclusive of Financial Guaranties) in all of the Accounts in the Debt Service Reserve Fund, together with the amount in the Debt Service Fund, is sufficient to pay all Outstanding Bonds in accordance with their respective terms, the funds on deposit in the Debt Service Reserve Fund shall be transferred to the Debt Service Fund and applied to the redemption or payment at maturity of all Bonds Outstanding.

In lieu of the required deposits and transfers to the Debt Service Reserve Fund, the Authority may cause to be deposited into the Debt Service Reserve Fund Financial Guaranties in an amount equal to the difference between the Debt Service Reserve Requirement and the sums, if any, then on deposit in the Debt Service Reserve Fund or being deposited in the Debt Service Reserve Fund concurrently with such Financial Guaranties. The Financial Guaranties shall be payable (upon the giving of notice as required thereunder) on any date on which moneys will be required to be withdrawn from the Debt Service Reserve Account and applied to the payment of a Principal Installment of or interest on any Bonds and such withdrawal cannot be met by amounts on deposit in the Debt Service Reserve Fund. If a disbursement is made pursuant to Financial Guaranties, the Authority shall be obligated either (i) to reinstate the maximum limits of such Financial Guaranties or (ii) to deposit into the Debt Service Reserve Fund, funds in the amount of the disbursement made under such Financial Guaranties, or a combination of such alternatives, and shall provide that the amount in the Debt Service Reserve Fund equals the Debt Service Reserve Requirement.

In the event of the refunding of any Bonds, the Trustee shall, upon the written direction of the Authority, withdraw from the Debt Service Reserve Fund all or any portion of amounts accumulated therein with respect to the Bonds being refunded and deposit such amounts as provided in such written direction; provided that such withdrawal shall not be made unless (a) immediately thereafter the Bonds being refunded shall be deemed to have been paid pursuant to Section 1201 of the Resolution, and (b) the amount remaining in the Debt Service Reserve Fund after such withdrawal shall not be less than the Debt Service Reserve Requirement. (*Section 508*)

**Subordinated Indebtedness Fund.** The Trustee shall apply amounts on deposit in the Subordinated Indebtedness Fund solely to the maintenance of reserves for, or the payment of, Subordinated Indebtedness (or as otherwise provided by the resolution of the Authority authorizing each issue of Subordinated Indebtedness). The Trustee shall withdraw from the Subordinated Indebtedness Fund any amount necessary to render the balances in the Debt Service Fund or Debt Service Reserve Fund sufficient to meet the requirements of such Funds. (*Section 509*)

**Surplus Fund.** The Trustee shall, on each Bond Payment Date, apply moneys credited to the Surplus Fund in the following amounts: (i) to the Debt Service Fund the amount, if any, necessary (or all the moneys in the Surplus Fund if less than the amount necessary) to make up any deficiency in the amount required to be on deposit in such Fund and (ii) to the Debt Service Reserve Fund the amount, if any, necessary (or all the moneys in the Surplus Fund if less than the amount necessary) to make up any

deficiency in the amount required to be on deposit in any Account in such Fund. Such transfer shall be made notwithstanding any other provisions of the Resolution requiring deposits in such Funds. Amounts on deposit in the Surplus Fund on the last day of a Fiscal Year shall be withdrawn from such Fund and transferred to the Board for deposit in the Local Water Fund. (*Section 510*)

**Arbitrage Rebate Fund.** Amounts on deposit in the Arbitrage Rebate Fund shall be applied by the Trustee to make payments to the Department of the Treasury of the United States of America. Notwithstanding the foregoing, the Trustee shall apply moneys credited to the Arbitrage Rebate Fund in the following amounts: (i) to the Debt Service Fund the amount, if any, necessary (or all the moneys in the Arbitrage Rebate Fund if less than the amount necessary) to make up any deficiency in the amount required to be on deposit in the Debt Service Fund and (ii) to the Debt Service Reserve Fund the amount, if any, necessary (or all the moneys in the Arbitrage Rebate Fund if less than the amount necessary) to make up any deficiency in the amount required to be on deposit in any Account in the Debt Service Reserve Fund.

Amounts on deposit in the Arbitrage Rebate Fund in excess of the amount required to be maintained therein for the purposes of such Fund may be transferred and paid by the Trustee to the Surplus Fund. (*Section 510-a*)

**Subordinated Indebtedness.** The Authority may issue Subordinated Indebtedness payable out of and secured by a pledge of and lien on amounts in the Subordinated Indebtedness Fund available for such payment. Such Subordinated Indebtedness, however, shall be issued only for the purposes set forth in the Resolution and shall be secured by a pledge subordinate in all respects to the pledge created by the Resolution as security for the Bonds. (*Section 511*)

**Depositaries.** All moneys or securities held by the Trustee shall constitute trust funds and the Trustee may and shall, if directed by the Authority, deposit such moneys or securities with one or more Depositaries. All moneys or securities held by the Authority in the Authority Expense Fund shall be deposited with one or more Depositaries. All moneys or securities deposited under the provisions of the Resolution with the Trustee or any Depositary shall be held in trust and applied only in accordance with the provisions of the Resolution, and each of the Funds established by the Resolution shall be a trust fund for the purposes thereof.

Each Depositary holding moneys or securities in trust for the Trustee shall be a bank or trust company organized under the laws of the State or a national banking association (having its principal office within the State), having capital stock, surplus and undivided earnings aggregating at least \$100,000,000 and willing and able to accept the office on reasonable and customary terms and authorized by law to act in accordance with the provisions of the Resolution. (*Section 512*)

**Investment of Certain Funds.** Moneys held in the Debt Service Fund, the Debt Service Reserve Fund and the Subordinated Indebtedness Fund (subject to the terms of any resolutions or other instruments securing any issue of Subordinated Indebtedness) shall be invested and reinvested to the fullest practicable extent in Investment Securities which mature not later than such times as shall be necessary to provide moneys when needed to make payments required from such Funds; provided that in the case of the Debt Service Reserve Fund maturation may not occur later than fifteen years from the date of such investment, and in the case of the Debt Service Fund, investments shall be of the type described in clauses (ii), (iii) and (vi), and in the case of the Debt Service Reserve Fund, clauses (ii) and (iii), of the definition of "Investment Securities" (in either case, to the fullest extent practicable). Moneys in the Authority Expense Fund, the Revenue Fund, the Construction Fund, the Arbitrage Rebate Fund and the Surplus Fund may be invested and reinvested in Investment Securities which mature no later than such times as shall be necessary to provide moneys when needed to make payments from such Funds. The Trustee shall make all investments in accordance with written instructions from any Authorized Representative of the Authority. Moneys in any Fund or Account may be combined with moneys in any other Fund or Account for the purpose of making such investments in Investment Securities.

Interest (net of that which represents a return of accrued interest paid in connection with the purchase of any investment) earned on any moneys or investments in such Funds and Accounts, other

than the Construction Fund, the Arbitrage Rebate Fund and the Debt Service Reserve Fund, shall be paid into the Revenue Fund as and when received. Interest (net of that which represents a return of accrued interest paid in connection with the purchase of any investment) earned on any moneys or investments in (i) the Debt Service Reserve Fund shall be paid into the Arbitrage Rebate Fund, the Surplus Fund or the Revenue Fund, (ii) the Construction Fund shall be paid to the Board for deposit in the Local Water Fund quarterly, on the 15th day of each July, October, January and April of each Fiscal Year upon receipt of a written request and a certificate of the Authority relating to the satisfaction of the Cash Flow Requirement and (iii) the Arbitrage Rebate Fund shall remain in such fund.

All Investment Securities acquired with moneys in any Fund or Account, including any Fund or Account held by the Authority, shall be held by the Trustee in pledge or by a Depository as agent in pledge in favor of the Trustee. (*Section 514*)

**Additional Bonds.** The Authority may issue Bonds from time to time without limitation as to amount except as provided in the Resolution or as specified by law to generate funds sufficient to meet the Costs of Water Projects, to make deposits in the Funds and Accounts or to refund Outstanding Bonds, Bond Anticipation Notes, Subordinated Indebtedness or outstanding bonds of the City issued to pay the capital costs of the System. All Bonds shall be issued subject to the terms, conditions and limitations established in the Resolution and in one or more Series as therein provided.

Bonds shall be authenticated and delivered only upon the Trustee's receipt of, among other items:

- (a) a certified copy of the Supplemental Resolution authorizing such Series;
- (b) (i) in the case of the initial Series of Bonds, an executed copy of the Agreement and the Lease; and (ii) in the case of any subsequent Series of Bonds, an executed copy of any amendment or supplement to the Agreement or the Lease not theretofore delivered to the Trustee;
- (c) except in the case of any Series of Bonds issued prior to July 1, 1986 and any Series of Refunding Bonds issued pursuant to Section 207 of the Resolution, a certificate of an Authorized Representative of the Authority setting forth (i) the Revenues for either of the last two full Fiscal Years immediately preceding the Fiscal Year in which such Bonds are to be issued and (ii) the Aggregate Debt Service during such Fiscal Year for which Revenues are set forth pursuant to clause (i) above (excluding from Aggregate Debt Service any Principal Installment or portion thereof which was paid from sources other than Revenues) and (iii) the sum of the Operating Expenses and the Required Deposits for such period, and showing that the amount set forth in (i) is at least equal to the sum of (x) an amount equal to 115% of the amount set forth in (ii) and (y) an amount equal to 100% of the amount set forth in (iii);
- (d) except in the case of any Series of Bonds issued prior to July 1, 1986 and any Series of Refunding Bonds issued pursuant to Section 207 of the Resolution, a certificate of the Consulting Engineer setting forth the projected Operating Expenses for each of the five Fiscal Years following the Issuance of such Series of Bonds (plus the Fiscal Year in which such Bonds are issued);
- (e) except in the case of the initial Series of Bonds under the Resolution and any Series of Refunding Bonds issued pursuant to Section 207, a certificate, signed by an Authorized Representative of the Authority setting forth the estimated Required Deposits for each of the five Fiscal Years following the issuance of such Series of Bonds (plus the Fiscal Year in which such Bonds are issued); and
- (f) except in the case of the initial Series of Bonds under the Resolution and any Series of Refunding Bonds issued pursuant to Section 207, a certificate of the Rate Consultant (i) setting forth the estimated Revenues for each of the five Fiscal Years following the issuance of such Series of Bonds (plus the Fiscal Year in which such Bonds are issued) after giving effect to any increases or decreases in rates, fees and charges projected for such Fiscal Years and (ii) showing for each such Fiscal Year that the estimated Revenues for such Fiscal Year will be at least equal to the sum of (A) 115% of the maximum estimated Adjusted Aggregate Debt Service on all Bonds then

Outstanding including the Bonds to be issued, and (B) 100% of the sum of the projected Operating Expenses and Required Deposits, as shown on the Certificate of the Consulting Engineer delivered pursuant to paragraph (d) above and the Certificate of the Authority delivered pursuant to paragraph (e) above, respectively. (*Sections 204 and 206*)

**Refunding Bonds.** One or more Series of Refunding Bonds may be issued pursuant to Section 207 of the Resolution at any time to refund any Outstanding Bonds provided that (i) estimated average annual Debt Service on such Series of Refunding Bonds shall not exceed the average annual Debt Service on the Bonds to be refunded and (ii) the maximum Debt Service in any Fiscal Year on such Series of Refunding Bonds shall not exceed the maximum Debt Service in any Fiscal Year on the Bonds to be refunded, all as shown in a Certificate signed by an Authorized Representative of the Authority and delivered to the Trustee prior to the authentication and delivery of such Series of Refunding Bonds. Refunding Bonds shall be issued in a principal amount sufficient, together with other moneys available therefor, to accomplish such refunding and to make the deposits in the Funds and Accounts required by the provisions of the Supplemental Resolution authorizing such Bonds. (*Section 207*)

**Bond Anticipation Notes.** Whenever the Authority shall authorize the issuance of a Series of Bonds, the Authority may, by resolution, authorize the issuance of notes (and renewals thereof) in anticipation of such Series of Bonds. The principal of and interest on such notes and renewals thereof shall be payable from the proceeds of such notes or from the proceeds of the sale of the Series of Bonds in anticipation of which such notes are issued. The proceeds of such Bonds may be pledged for the payment of the principal of and interest on such notes and any such pledge shall have a priority over any other pledge of such proceeds created by the Resolution. The Authority may also pledge the Revenues to the payment of the interest on, and subject to Section 707 of the Resolution, the principal of such notes. A copy of the Resolution of the Authority authorizing such notes, certified by an Authorized Representative of the Authority, shall be delivered to the Trustee following its adoption, together with such other information concerning such notes as the Trustee may reasonably request. (*Section 208*)

**Credit Facilities.** In connection with the issuance of any Series of Bonds, the Authority may obtain or cause to be obtained one or more Credit Facilities providing for payment of all or a portion of the Principal Installments, or Redemption Price or interest due or to become due on such Bonds, providing for the purchase of such Bonds by the issuer of such Credit Facility or providing funds for the purchase of such Bonds by the Authority.

The Authority may secure such Credit Facility by an agreement providing for the purchase of the Series of Bonds secured thereby with such adjustments to the rate of interest, method of determining interest, maturity or redemption provisions as specified by the Authority in the applicable Supplemental Resolution. The Authority may also in an agreement with the issuer of such Credit Facility agree to directly reimburse such issuer for amounts paid under the terms of such Credit Facility, together with interest thereon (the "Reimbursement Obligation"); provided, however, that no Reimbursement Obligation shall be created until amounts are paid under such Credit Facility. Any such Reimbursement Obligation (a "Parity Reimbursement Obligation") may be secured by a pledge of, and a lien on Revenues on a parity with the lien created by Section 501 of the Resolution. Upon the payment of amounts under the Credit Facility which payment results in the Parity Reimbursement Obligation becoming due and payable, such Parity Reimbursement Obligation shall be deemed to be part of the Series of Bonds to which the Credit Facility which gave rise to such Parity Reimbursement Obligation relates.

Any such Credit Facility shall be for the benefit of and secure such Series of Bonds or portion thereof, as specified in the applicable Supplemental Resolution. (*Section 209*)

**Indebtedness and Liens.** The Resolution provides that the Authority shall not issue any bonds, or other evidences of indebtedness, other than the Bonds, Bond Anticipation Notes, Subordinated Indebtedness and Parity Reimbursement Obligations, secured by a pledge of or other lien on the Revenues and shall not create or cause to be created any lien or charge on such Revenues or on any amounts held by any Fiduciary, under the Resolution; however, the Authority may: (i) issue notes payable from the proceeds of Bonds or other obligations for the corporate purposes of the Authority payable or

secured by Revenues derived on and after such date as the pledge of the Revenues provided in the Resolution is discharged and satisfied and (ii) issue bonds or other obligations for the corporate purposes of the Authority payable out of or secured by the pledge of amounts in the Local Water Fund after satisfaction of the Cash Flow Requirement for the then current Fiscal Year, and which recite on their face that such pledge of said amounts is and shall be in all respects subordinate to the provisions of the lien and pledge created by the Resolution. (*Section 707*)

**Agreement of the State.** In accordance with Section 1045-t of the Act, the Authority agrees, for and on behalf of the State, that the State will not alter or limit the rights vested by the Act in the Authority or the Board to fulfill the terms of any agreement made with or for the benefit of the Bondholders, or in any way impair the rights and remedies of Bondholders, until the Bonds, together with the interest thereon, with interest on any unpaid installment of interest, and all costs and expenses in connection with any action or proceeding by or on behalf of such holders, are fully met and discharged. (*Section 711*)

**Authority Budget.** The Authority shall, on or before May 1, in each Fiscal Year, adopt and file with the Trustee, the Board and the City, a certified copy of the Authority Budget showing the estimated Cash Flow Requirement and the components thereof (on a monthly basis) for the ensuing Fiscal Year, together with any other information required to be set forth therein by the Resolution or the Agreement. Such Authority Budget may set forth such additional information as the Authority may determine or as the Board or the City may request. If for any reason the Authority shall not have adopted the Authority Budget before such May 1, the Authority Budget for the then current Fiscal Year shall be deemed to be the Authority Budget for the ensuing Fiscal Year until a new Authority Budget is adopted. The Authority may at any time adopt an amended Authority Budget for the then current or ensuing Fiscal Year, but no such amended Authority Budget shall supercede any prior Budget until the Authority shall have filed with the Trustee, the Board and the City a copy of such amended Authority Budget. Each month the Authority shall recalculate the Cash Flow Requirement. (*Sections 712 and 713*)

**Enforcement and Amendment of Agreement and Lease.** The Authority shall enforce or cause to be enforced the provisions of the Agreement and the Lease and duly perform its covenants and agreements under the Agreement. The Authority will not consent or agree to or permit any rescission of or amendment to or otherwise take any action under or in connection with the Agreement or the Lease except in accordance with Article X of the Agreement of the Resolution. (*Section 714*)

**Supplemental Resolutions.** The Resolution permits the modification or amendment of the rights and obligations of the Authority and of the holders of the Bonds thereunder by a Supplemental Resolution, with the written consent of the holders of two-thirds of the principal amount of: (i) the Bonds then Outstanding and (ii) in case less than all of the several Series of Bonds then Outstanding are affected by the modification or amendment, of the Bonds of the Series so affected and then Outstanding; however, if such modification or amendment will, by its terms, not take effect so long as any Bonds of any specified like Series and maturity remain Outstanding, the consent of the holders of such Bonds shall not be required and such Bonds shall not be deemed to be Outstanding for the purpose of modification; provided no such modification or amendment shall change the terms of redemption, maturity of principal, installment of interest, or reduce the principal amount, Redemption Price, or rate of interest without the consent of the holder of the affected Bond, or reduce the percentages of consents required to effect any future modification or amendment.

The Authority may adopt (without the consent of any holders of the Bonds) supplemental resolutions to authorize additional Bonds; to add to the restrictions contained in the Resolution upon the issuance of additional indebtedness; to add to the covenants of the Authority contained in, or surrender any rights reserved to or conferred upon it by, the Resolution; to confirm any pledge under the Resolution of Revenues or other moneys; to preserve the Federal tax exemption of interest on the Bonds; or otherwise to modify any of the provisions of the Resolution (but no such other modification may be effective while any of the Bonds of any Series theretofore issued are Outstanding); or to cure any ambiguity, supply any omission or to correct any defect in the Resolution or to insert such provisions clarifying matters or questions arising under the Resolution as are necessary or desirable, and are not contrary to or inconsistent with the Resolution as theretofore in effect or to provide for additional duties of the Trustee (provided that the Trustee shall consent thereto). (*Arts. VIII and IX*)

**Defaults and Remedies.** The Resolution provides that if one or more of the following Events of Default shall occur, namely: (i) a default in the payment of the principal or Redemption Price of any Bond; (ii) a default in payment of any installment of interest on any Bond; (iii) a default by the Authority in the performance or observance of any other of its covenants, agreements or conditions in the Resolution for a period of 45 days after written notice thereof; (iv) a default under the Agreement or the Lease by the Board or the City for a period of 45 days after written notice thereof; or (v) a filing of a petition for relief under any Federal or State bankruptcy or similar law by the Authority; then, upon the happening and continuance of any Event of Default, the Trustee may, and upon the written request of the holders of not less than a majority in principal amount of the Bonds Outstanding the Trustee shall, declare the principal and accrued interest on all the Bonds then Outstanding, due and payable immediately subject, however, to rescission of such declaration and annulment of the default upon the remedying thereof.

The Authority covenants that upon the occurrence of an Event of Default, the books of record and account of the Authority shall at all times be subject to the inspection and use of the Trustee and of its agents and attorneys and that, upon demand of the Trustee, the Authority will account, as if it were the trustee of an express trust, for all Revenues and other moneys, securities and funds pledged or held under the Resolution for such period as shall be stated in such demand.

Upon default, the Trustee may proceed to protect and enforce its rights and the rights of the holders of the Bonds under the Resolution forthwith by a suit or suits in equity or at law, whether for the specific performance of any covenant therein contained, or in aid of the execution of any power therein granted, or for an accounting against the Authority as if the Authority were the trustee of an express trust, or in the enforcement of any other legal or equitable right as the Trustee, being advised by counsel, shall deem most effectual to enforce any of its rights or to perform any of its duties under the Resolution. During the continuance of an Event of Default, Revenues shall be applied first, to the reasonable and proper charges and expenses of the Trustee; then (unless the principal of all of the Bonds shall have been declared payable) to the payment of all unpaid interest ratably, and then to unpaid principal or Redemption Price, ratably; and if all of the principal of the Bonds shall be due and payable, to the payment of unpaid principal and interest, without preference or priority of interest over principal, principal over interest or of any Bond or installment over any other Bond or installment, without any discrimination or preference. No Bondholder has any right to institute suit to enforce any provision of the Resolution or the execution of any trust thereunder or for any remedy thereunder, unless the Trustee has been requested by the holders of at least a majority in principal amount of the Bonds then Outstanding to take such action and has been offered adequate security and indemnity and has failed to commence such suit in the manner provided in the Resolution. The right to appoint a statutory trustee under Section 1045-p of the Act is expressly abrogated. (*Art. X*)

**Defeasance of Bonds Other than Variable Rate or Option Bonds.** Any Outstanding Bond shall prior to the maturity or redemption date thereof be deemed to have been paid and shall cease to be entitled to any lien, benefit or security under the Resolution if (i) in the case of any Bonds to be redeemed prior to their maturity, the Authority shall have given to the Trustee irrevocable instructions accepted in writing by the Trustee to publish on such date the notice of redemption therefor (other than Bonds purchased by the Trustee prior to the publication of the notice of redemption), (ii) there shall have been deposited with the Trustee either moneys in an amount sufficient, or Defeasance Obligations the principal of and/or the interest on which, when due, without reinvestment, will, as verified by the report of a firm of nationally recognized independent certified public accountants, provide moneys which, together with the moneys deposited shall be sufficient, to pay when due the principal or Redemption Price (if applicable) and interest due and to become due on said Bonds and (iii) in the event said Bonds are not by their terms subject to redemption within the next succeeding 60 days, the Authority shall have given the Trustee irrevocable instructions to publish, as soon as practicable, a notice to the holders of such Bonds that the deposit required above has been made with the Trustee and that said Bonds are deemed paid in accordance with the Resolution and stating such maturity or redemption date upon which moneys are to be available to pay the principal or Redemption Price, if applicable, on such Bonds (other than Bonds purchased by the Trustee prior to the publication of the notice of redemption); provided that any



notice published for Bonds constituting less than all of the Outstanding Bonds of any maturity within a Series shall specify the letter and number or other distinguishing mark of each such Bond. The Trustee shall, to the extent necessary, apply moneys to the retirement of said Bonds in amounts equal to the unsatisfied balances of any Sinking Fund Installments thereto.

The Trustee shall, if so directed by the Authority prior to the maturity date of Bonds deemed to have been paid which are not to be redeemed prior to their maturity date or prior to the publication of the above notice of redemption for Bonds deemed paid and to be redeemed, apply moneys deposited with the Trustee in respect of such Bonds and redeem or sell Defeasance Obligations so deposited with the Trustee and purchase such Bonds and the Trustee shall immediately thereafter cancel all such Bonds so purchased; provided, however, that the moneys and Defeasance Obligations remaining on deposit with the Trustee after the purchase and cancellation of such Bonds shall be sufficient to pay when due the Principal Installment or Redemption Price, if applicable, and interest due or to become due on all Bonds.

**Defeasance of Variable Rate Bonds.** The Resolution provides that for the purposes of determining whether Variable Rate Bonds shall be deemed to have been paid prior to the maturity or redemption date thereof, by the deposit of moneys, or Defeasance Obligations and moneys (if any), the interest due on such Bonds shall be calculated at the maximum rate permitted; provided, however, that if, as a result of such Bonds having borne interest at less than the maximum rate for any period, the total amount of moneys and Investment Securities on deposit with the Trustee for the payment of interest on such Bonds exceeds the total amount required to be deposited with the Trustee, the Trustee shall, if requested by the Authority, pay the amount in excess to the Authority free and clear of any lien or pledge securing the Bonds or otherwise existing under the Resolution.

**Defeasance of Option Bonds.** Under the Resolution, Option Bonds shall be deemed paid in accordance with the Resolution only if, in addition to satisfying several of the requirements applicable to Bonds other than Variable Rate or Option Bonds, there shall have been deposited with the Trustee moneys in an amount which shall be sufficient to pay the maximum amount of principal of and premium due, if any, and interest on such Bonds which could become payable to the holders of such Bonds upon the exercise of any options provided to the holders of such Bonds; provided, however, that if the options originally exercisable by the holder of an Option Bond are no longer exercisable, such Bond shall not be considered an Option Bond. (*Section 1201*)

[THIS PAGE INTENTIONALLY LEFT BLANK.]

**FINANCIAL STATEMENTS**

[THIS PAGE INTENTIONALLY LEFT BLANK.]

**FISCAL YEAR 2002 AND 2003 AUDITED FINANCIAL STATEMENTS OF  
THE NEW YORK CITY WATER AND SEWER SYSTEM**

**INDEX**

	<u>Page</u>
Report of Independent Auditors.....	D-1
Management's Discussion and Analysis.....	D-2
Balance Sheets as of June 30, 2003 and 2002.....	D-7
Statements of Revenues, Expenses and Changes in Net Assets for the Years Ended June 30, 2003 and 2002.....	D-8
Statements of Cash Flows for the Years Ended June 30, 2003 and 2002.....	D-9
Notes to Financial Statements—June 30, 2003 and 2002.....	D-10
Combining Balance Sheet as of June 30, 2003.....	D-20
Combining Balance Sheet as of June 30, 2002.....	D-21
Combining Statement of Revenues, Expenses and Changes in Net Assets for the Year Ended June 30, 2003.....	D-22
Combining Statement of Revenues, Expenses and Changes in Net Assets for the Year Ended June 30, 2002.....	D-23
Combining Statement of Cash Flows for the Year Ended June 30, 2003.....	D-24
Combining Statement of Cash Flows for the Year Ended June 30, 2002.....	D-25

[THIS PAGE INTENTIONALLY LEFT BLANK.]

## INDEPENDENT AUDITORS' REPORT

The Members of the Boards  
New York City Municipal Water Finance Authority  
and the New York City Water Board:

We have audited the accompanying balance sheets of the New York City Water and Sewer System (the System), a component unit of The City of New York, as of and for the years ended June 30, 2003 and 2002, and the related statements of revenues, expenses, and changes in net assets, and cash flows for the years then ended. These financial statements are the responsibility of the System's management. Our responsibility is to express an opinion on these basic financial statements based on our audits.

We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the basic financial statements referred to above present fairly, in all material respects, the financial position of the New York City Water and Sewer System as of June 30, 2003 and 2002, and its results of operations, changes in its net assets, and its cash flows for the years then ended in conformity with accounting principles generally accepted in the United States of America.

The Management's Discussion and Analysis is not a required part of the basic financial statements, but is supplementary information required by the Governmental Auditing Standards Board. We have applied certain limited procedures, which consisted principally of inquiries of management regarding the methods of measurement and presentation of the required supplementary information. However, we did not audit the information and express no opinion on it.

Our audits were conducted for the purpose of forming an opinion on the basic financial statements of the System. The supplementary information included in schedules I through VI is presented for purposes of additional analysis and is not a required part of the basic financial statements. Such information has been subjected to the auditing procedures applied in the audits of the basic financial statements and, in our opinion, is fairly stated in all material respects in relation to the basic financial statements taken as a whole.

We did not audit the data presented in the introductory and statistical sections as listed in the accompanying table of contents, which are not a required part of the combined financial statements and, therefore, express no opinion thereon.

The logo for KPMG LLP, featuring the letters 'KPMG' in a large, bold, stylized font, with 'LLP' in a smaller, simpler font to the right.

October 23, 2003  
New York, New York

**NEW YORK CITY WATER AND SEWER SYSTEM**  
Management's Discussion and Analysis

**OVERVIEW OF THE FINANCIAL STATEMENTS**

The following is an overview of the financial activities of the New York City Water and Sewer System (the System) for the fiscal years ended June 30, 2003 and 2002.

The basic financial statements of the System, which include the balance sheets, the statements of revenues, expenses and changes in net assets and the statements of cash flows, are presented to display information about the reporting

entity as a whole, in accordance with Governmental Accounting Standards Board (GASB) Statement No. 34, *Basic Financial Statements and Managements Discussion and Analysis for State and Local Governments* as amended by GASB Statement No. 37, *Basic Financial Statements and Management's Discussion and Analysis – for State and Local Governments: Omnibus*. The statements are prepared using the economic resources measurement focus and the accrual basis of accounting.

**FINANCIAL ANALYSIS AND RESULTS OF OPERATIONS**

The following summarizes the activities of the System for the years 2003, 2002 and 2001:

(in thousands)	2003	2002	2001
<b>Revenues:</b>			
Water supply and distribution	\$ 690,093	648,319	626,364
Sewer collection and treatment	952,985	907,324	898,568
Other operating revenues	134,658	116,512	96,991
Total operating revenues	<u>1,777,736</u>	<u>1,672,155</u>	<u>1,621,923</u>
Investment income	96,236	97,543	84,534
Total revenues	<u>1,873,972</u>	<u>1,769,698</u>	<u>1,706,457</u>
<b>Expenses:</b>			
Operations and maintenance	849,821	857,907	842,401
Bad debt expense	89,400	92,481	122,785
Administration and general	15,181	14,171	11,215
Depreciation and amortization	364,337	320,382	318,709
Interest expense	584,347	556,784	527,914
Total expenses	<u>1,903,086</u>	<u>1,841,725</u>	<u>1,823,024</u>
Net loss before capital contributions	(29,114)	(72,027)	(116,567)
Capital contributions	7,233	12,303	1,748
Change in net assets	<u>(21,881)</u>	<u>(59,724)</u>	<u>(114,819)</u>
Net assets - beginning	4,612,159	4,671,883	4,786,702
Net assets - ending	<u>\$ 4,590,278</u>	<u>4,612,159</u>	<u>4,671,883</u>

**2003 – 2002**

Total operating revenues increased by 6.3% on a rate increase of 6.5%. Water consumption declined by 3.8% over the year. The following summarizes other operating revenues:

(in thousands)	2003	2002
Interest subsidies	\$ 65,816	53,582
Upstate water fees	22,790	21,100
Late payment fees	38,235	24,930
Connection fees and permits	7,817	16,900
Total other revenues	<u>\$ 134,658</u>	<u>116,512</u>

Investment income decreased by 1.3%. Lower interest rates offset an increase in investments of \$412 million.



**NEW YORK CITY WATER AND SEWER SYSTEM**  
Management's Discussion and Analysis

Total operations and maintenance expense decreased by \$8 million or 1%. Expenses for operations of the system increased by \$17 million and the rental payment to The City of New York (the "City") for debt service decreased by \$25 million. The two major components of the increase in operations and maintenance were increased costs related to sludge disposal, \$6 million, and increased costs for chemicals used in sewage treatment, \$5 million. The rental payment decreased due to lower debt service payments by the City on bonds issued prior to the inception of the System.

Bad debt expense decreased by \$3 million. This reflects continued improvement in cash collections on receivables.

Interest expense increased by \$27 million or nearly 5%. The total debt of the System has increased by \$1.3 billion or 11%. Interest expense has increased by a lesser percentage due to lower interest rates on new issues and low interest rates on variable rate issues and commercial paper.

**2002 – 2001**

Total operating revenues increased by 3.1% compared with a rate increase of 3%. The surcharge on customers that did not allow the installation of water meters of about \$10 million offset a 5% decline in water consumption. The loss of revenue from the destruction of the World Trade Center complex was approximately \$1.2 million or less than 1% of total revenues. Investment income increased by \$13 million or over 15%. The System had \$570 million of additional investments in escrow from crossover refunding bonds issued during fiscal 2002, which was partially offset by decreases in interest rates.

Total operations and maintenance expense increased by \$15 million or 1.8%. The expenses for operations of the system increased by \$45 million and the rental payment to the City for debt service decreased by \$30 million. Additional expenses relating to drought conditions were nearly \$12 million of the increase in operations. The largest component of expenses relating to the drought was electricity for pumping water from low-level reservoirs. An additional \$10 million was incurred for payment of claims resulting from water main breaks. There were additional expenses for security as a result of the World Trade Center attacks; however, these costs were not large in relation to the total operations and maintenance expense and are difficult to identify. The rental payment represents actual debt service paid by the City for debt incurred prior to the inception of the System in 1985 and those payments were \$30 million less in 2002.

Bad debt expense decreased by \$30 million to reflect the effects of an increase in cash collections of receivables. The increase in collections on these receivables was the result of a lien sale of water and sewer system receivables. The lien sale was the first to sell water receivables separately from the City's property tax liens.

Interest expense increased by nearly \$28 million or 5%. The total debt of the System has increased by over \$1.5 billion from 2001 to 2002, or nearly 14%. The increase in interest expense has been offset by declining interest rates on new issues and existing variable rate issues.

On the balance sheet, the changes in assets, liabilities and net assets are summarized as follows:

(in thousands)	2003	2002	2001
Current unrestricted assets	\$ 506,598	461,810	522,969
Current restricted assets	2,272,548	1,865,530	1,017,852
Capital assets	14,999,643	14,119,680	13,375,790
Total assets	17,890,583	16,557,735	15,014,824
Long-term liabilities	11,894,966	10,748,833	9,345,805
Current liabilities	1,405,339	1,196,743	997,136
Total liabilities	13,300,305	11,945,576	10,342,941
Net assets:			
Invested in capital assets, net of related debt	4,107,253	4,171,982	4,232,648
Restricted for debt service	203,695	245,072	158,829
Restricted for operations and maintenance	132,107	118,848	120,084
Unrestricted	147,223	76,257	160,322
Total net assets	4,590,278	4,612,159	4,671,883
Total liabilities and net assets	\$ 17,890,583	16,557,735	15,014,824

**NEW YORK CITY WATER AND SEWER SYSTEM**  
Management's Discussion and Analysis

**2003 – 2002**

Current unrestricted assets increased by \$45 million or 10%. Net receivables and unbilled revenues increased by \$34 million and the System had a \$13 million receivable from the City for overpayment of operations and maintenance expense. In 2002, the System had a payable to the City for operations and maintenance expense.

Current restricted assets increased \$407 million or 22%. The major increase in restricted assets was \$347 million in the construction fund. The balances in this fund are available to pay for capital projects and vary due to the timing of the reissuance of commercial paper following the issue of long-term bonds. Another \$50 million increase was in the escrow funds where proceeds from a bond sale were set aside for principal payment of the fiscal 2003 bonds in fiscal year 2004.

Capital assets are described in a separate section of this discussion.

In 2003, the System authorized an additional \$200 million of commercial paper and terminated \$75 million, which brought the total program amount to \$825 million. The total increase in commercial paper outstanding was \$197 million and the increase in current liabilities was \$208 million.

Long-term liabilities increased by \$1.1 billion or 11%. A detailed discussion of the debt issued by the System follows in the Debt Administration section of this discussion.

**Capital Assets**

The System's capital assets include buildings, equipment, water treatment systems and water collections systems. Such amounts are detailed as follows:

(in thousands)	2003	2002	2001
Utility plant construction	\$ 4,339,080	3,843,866	3,549,203
Land	69,477	51,281	31,193
Buildings	22,071	21,615	21,615
Equipment	288,250	275,701	211,944
Water supply and wastewater treatment systems	8,735,576	8,344,136	7,786,471
Water distribution and sewage collection systems	6,676,855	6,443,819	6,349,065
Total utility plant in service	15,792,229	15,136,552	14,400,288
Less accumulated depreciation	5,131,666	4,860,738	4,573,701
Total, net utility plant in service	\$ 10,660,563	10,275,814	9,826,587

**2002 – 2001**

Current unrestricted assets decreased by \$61 million or 11%. In 2001, the System had prepaid construction of \$40 million and no prepaid construction in 2002. In addition, accounts receivable decreased by \$11 million or 3% due to increases in collections from customers.

Current restricted assets increased by \$847 million or 83%. Escrow deposits for 2002 crossover refunding issues comprised \$570 million of the increase. Other increases were in the proceeds held for construction, \$150 million, and the revenue fund, \$87 million. Construction proceeds available vary due to the timing of new issues. The revenue fund increase was a result of increased cash collections from customers.

In 2002, the System issued an additional \$200 million of commercial paper, which brought the total program to \$800 million and resulted in an increase in commercial paper outstanding and current liabilities of \$128 million.

Long-term liabilities increased by \$1.4 billion or 15%.

**NEW YORK CITY WATER AND SEWER SYSTEM**  
Management's Discussion and Analysis

The net increase in the System's capital assets during fiscal year 2003 was \$880 million or 6.2%. The net increase in 2002 was \$744 million or 5.5%. Net capital asset additions for 2003 were \$1,151 million and, in 2002, \$1,039 million.

The capital assets of the System are detailed in footnote numbers 2(d) and 4 of the notes to the financial statements.

**Debt Administration**

The New York City Municipal Water Finance Authority (the Authority) issues debt to pay for the capital improvements to the System. The debt program of the Authority includes commercial paper and long-term debt of the Authority and subsidized bonds issued through the New York State Environmental Facilities Corporation (EFC). The commercial paper program is the main source of financing to reimburse the City for payments made for water and sewer projects. The Authority then issues long-term debt of its own or through the EFC to retire outstanding commercial paper. The Authority also issues refunding bonds to refinance higher coupon debt.

At June 30, 2003, the total outstanding debt of the system was \$13.5 billion, of which \$825 million was commercial paper. The remaining \$12.7 billion consisted of variable and fixed-rate bonds and notes maturing in varying installments through 2034. The total outstanding long-term debt at June 30, 2003 was as follows:

Issue Date	(in thousands)
2003	\$ 3,075,393
2002	2,285,934
2001	1,067,275
2000	526,125
1999 and prior	5,703,424
<b>Total long-term debt</b>	<b>\$ 12,658,151</b>

In the above, bonds retired through refundings in 2003 are removed from the year in which the refunded bonds were issued.

In fiscal year 2003, the Authority issued \$2,010,310,000 of water and sewer revenue bonds directly to the public, including \$1,014,531,746 of refunding bonds and \$995,778,254 in new money long-term financing. The Authority also issued \$1,110,102,090 in Clean and Drinking Water State Revolving Fund (SRF) bonds through the EFC, which included \$443,477,370 of new money bonds and \$666,624,720 of refunding bonds. The new money bond proceeds provided long-term financing of commercial paper notes which had previously financed capital improvements to New York City's water and sewer system.

Highlights of the financing program in 2003 included historically low interest costs on both fixed- and variable-rate borrowing and the largest number of bonds issued in the Authority's history. The sizable issuance in fiscal 2003 was largely the result of refunding opportunities, which accounted for more than half of the Authority's bond issuance, created by the continuing low interest rate environment. In fiscal

2003, the Authority also maximized its debt issued through EFC, which provides benefits to the Authority from an interest rate subsidy for qualifying projects, helping to minimize the overall costs of the Authority's long term debt.

The Authority also terminated its \$75 million commercial paper (CP) Series 3, while authorizing an additional \$200 million of a new series, CP Series 7, to its tax-exempt commercial paper program. Series 7 includes extendible municipal commercial paper (EMCP) notes, which do not require credit enhancement.

The Authority's first debt issuance in fiscal 2003 closed on July 9, 2002, and included the fiscal 2003 Series A, B and C bonds delivered in par amounts of \$741,090,000 for the Series A bonds, \$150,000,000 for the Series B bonds and \$300,300,000 for the Series C bonds. Proceeds from the combined sale of the Series A, B and C bonds were used to defease all of the Authority's Series One, Series Five and a portion of its Series 6 commercial paper notes, fund the debt service reserve, pay certain costs of issuance and refund a portion of its fiscal 1993 Series A bonds.

The Authority also sold \$20 million of muni-CPI bonds in the 2013 maturity of the Series A issue. The muni-CPI bonds are a derivative product which swapped a floating rate tied to the consumer price index to a fixed interest rate, resulting in a lower yield than traditional fixed-rate debt.

The Series B bonds were sold as refundable principal installment bonds, maturing in 2004, 2005 and 2006, allowing the Authority to take advantage of the relatively low rates at the short end of the interest rate curve. Principal in each maturity will be advance refunded prior to the principal payment date and extended up to 40 years.

The Series C bonds were sold as variable-rate demand bonds, with \$100,100,000 offered in the weekly reset mode and \$200,200,000 sold in the daily reset mode. Three different remarketing agents were chosen to remarket these bonds.

On October 10, 2002, \$250,000,000 of fiscal 2003 Series D bonds were delivered in a common plan of finance with \$148,040,809 of 2003 Series 1 bonds, issued through the EFC. Proceeds from the Series D bonds were used to refund all of the Authority's outstanding Fiscal 1987 Series A and 1987 Series B bonds and a portion of its 1994 Series B, 1996 Series A and 1994 Series F bonds. These bonds were second advance refundings allowed under the Liberty Zone provisions.

The proceeds of the 2003 Series 1 bonds were used to defease all of the Authority's Series 3 and a portion of its Series 4 commercial paper and funded the costs of issuance. The 2003 Series 1 bonds were offered through a competitive sale using an Internet-based bidding platform with seven bidders responding.

## NEW YORK CITY WATER AND SEWER SYSTEM

### Management's Discussion and Analysis

On November 14, 2002, \$608,654,720 of 2003 Series 2 bonds issued through the EFC were delivered, one of the largest offerings made by the Authority through the EFC. The transaction partially refunded the Authority's Fiscal 1994 Series 1 bonds and fully refunded its Fiscal 1996 Series 1, Fiscal 1998 Series 2, Fiscal 1998 Series 5 and Fiscal 1999 Series 1 bonds, extended the maturity date to 30 years from the original issuance date of the refunded bonds and paid certain costs of issuance.

On March 20, 2003, the Authority closed two small refunding transactions through the EFC. The transactions included \$22,365,000 of Fiscal 2003 Series 3 and \$35,605,000 of Fiscal 2003 Series 4 bonds, which refunded Fiscal 1996 Series 2 and 1996 Series 3 bonds, respectively. Both the refunding and refunded bonds made up a part of larger transactions, which the EFC undertook on behalf of a pool of issuers using the SRF program. The bonds extended the maturity date to 30 years from the original issuance date of the refunded bonds and paid certain costs of issuance.

On April 23, 2003, the Authority closed two transactions, the Fiscal 2003 Series E bonds and the Fiscal 2003 Series 5 bonds. The Series E bonds were sold for a par amount of \$367,265,000. Proceeds from the sale were used to defease all of the Authority's Series 5 A and Series 6 commercial paper notes. The issue included term bonds that mature in years 2034 and 2038 – the first issuance by the Authority of a bond with a 35-year maturity.

The \$295,436,561 of Series 5 bonds were issued through the EFC to secure bonds issued by the EFC for the Authority. Proceeds of the bonds were used to defease all of its Commercial Paper Series 4 and 5 B notes and a portion of its Series 7 notes.

The Series F bonds, the Authority's last transaction for fiscal year 2003, were sold as variable-rate demand bonds, with \$100,000,000 offered in the weekly reset mode and \$201,655,000 sold in the daily reset mode. One remarketing agent was chosen to remarket these bonds.

In December 2002, the Authority terminated \$75,000,000 of Commercial Paper Series 3 notes because of expiring credit enhancement. In May of 2003, the Authority increased its commercial paper program to \$925,000,000 from \$725,000,000, with the addition of the authorized \$200,000,000 of Commercial Paper Series 7 notes. The commercial paper program, the Authority's primary source of short-term financing, is used to reimburse the City for spending on water- and sewer-related projects. Throughout the year, the Authority issues long-term debt to retire the outstanding commercial paper.

The total of bonds and notes payable are detailed in footnote numbers 9 and 10 of the notes.

#### **Economic Factors and Next Year's Rates**

Rates are adopted each year by the Board in May, for the following fiscal year. A rate increase of 5.5% for fiscal 2004 became effective July 1, 2003 based on projected revenues and costs. The 2003 rate increase reflected expected reduced consumption due to the drought.

#### **Request for Information**

This financial report is provided as an overview of the System's finances. Questions concerning any of the information in this report or requests for additional information should be directed to Raymond Orlando, Manager of Public Relations, New York City Municipal Water Finance Authority, 75 Park Place, New York, NY 10007. His phone number is (212) 788-5875 and his fax number is (212) 788-9721.

**NEW YORK CITY WATER AND SEWER SYSTEM**  
Financial Statements

**BALANCE SHEETS**

June 30, 2003 and 2002

(in thousands)	2003	2002
<b>ASSETS</b>		
Utility plant in service, less accumulated depreciation of \$5,131,666 in 2003 and \$4,860,738 in 2002 (notes 2, 4 and 7)	\$ 10,660,563	10,275,814
Utility plant construction	4,339,080	3,843,866
	<u>14,999,643</u>	<u>14,119,680</u>
<b>Current assets:</b>		
Unrestricted cash and cash equivalents (note 6)	8,567	5,274
Accounts receivable:		
Billed, less allowance for uncollectible water and sewer receivables of \$268,235 in 2003 and \$298,878 in 2002	336,943	330,482
Unbilled	137,500	110,000
Receivable from the City (note 8)	13,213	243
Accrued interest receivable	1	1
Other	10,374	15,810
Total current unrestricted assets	<u>506,598</u>	<u>461,810</u>
<b>Restricted assets (notes 6 and 11):</b>		
Cash and cash equivalents	1,531,401	1,177,379
Investments	738,789	684,530
Accrued interest receivable	2,358	2,383
Other receivable	-	1,238
Total current restricted assets	<u>2,272,548</u>	<u>1,865,530</u>
Total current assets	<u>2,779,146</u>	<u>2,327,340</u>
Long-term deferred bond and financing expenses	111,794	110,715
Total assets	<u>\$ 17,890,583</u>	<u>16,557,735</u>
<b>LIABILITIES AND NET ASSETS</b>		
<b>Long-term liabilities:</b>		
Bonds and notes payable, less current portion (note 10)	\$ 12,425,832	11,329,246
Net discount on bonds and notes payable	(296,637)	(371,892)
Deferred bond refunding costs (note 2)	(234,229)	(208,521)
Total long-term liabilities	<u>11,894,966</u>	<u>10,748,833</u>
<b>Current liabilities:</b>		
Accounts payable and accrued expenses	27,102	26,851
Revenues received in advance	69,156	76,031
Current portion of bonds and notes payable (notes 9 and 10)	1,057,318	817,758
Payable to the City (note 8)	231,390	262,702
Refunds payable to customers	20,373	13,401
Total current liabilities	<u>1,405,339</u>	<u>1,196,743</u>
Total liabilities	<u>13,300,305</u>	<u>11,945,576</u>
<b>Net assets:</b>		
Invested in capital assets, net of related debt	4,107,253	4,171,982
Restricted for debt service	203,695	245,072
Restricted for operations & maintenance	132,107	118,848
Unrestricted	147,223	76,257
Total net assets	<u>4,590,278</u>	<u>4,612,159</u>
Total liabilities and net assets	<u>\$ 17,890,583</u>	<u>16,557,735</u>

See accompanying notes to financial statements.

**NEW YORK CITY WATER AND SEWER SYSTEM**  
Financial Statements

**STATEMENTS OF REVENUES, EXPENSES AND CHANGES IN NET ASSETS**

Years ended June 30, 2003 and 2002

(in thousands)	2003	2002
Operating revenues:		
Water supply and distribution	\$ 690,093	648,319
Sewer collection and treatment	952,985	907,324
Other operating revenues	134,658	116,512
Total operating revenues	<u>1,777,736</u>	<u>1,672,155</u>
Operating expenses:		
Operation and maintenance (notes 3 and 7)	849,821	857,907
Bad debt expense	89,400	92,481
Administration and general	15,181	14,171
Total operating expenses	<u>954,402</u>	<u>964,559</u>
Depreciation and amortization	364,337	320,382
Operating income	<u>458,997</u>	<u>387,214</u>
Nonoperating revenues (expenses):		
Interest expense	(584,347)	(556,784)
Investment income	96,236	97,543
Net loss before capital contributions	<u>(29,114)</u>	<u>(72,027)</u>
Capital contributions	7,233	12,303
Decrease in net assets	<u>(21,881)</u>	<u>(59,724)</u>
Net assets – beginning of the period	4,612,159	4,671,883
Net assets – end of the period	<u>\$ 4,590,278</u>	<u>4,612,159</u>

See accompanying notes to financial statements.

**NEW YORK CITY WATER AND SEWER SYSTEM**  
Financial Statements

**STATEMENTS OF CASH FLOWS**

Years ended June 30, 2003 and 2002

(in thousands)	2003	2002
Cash flows from operating activities:		
Receipts from customers	\$ 1,654,714	1,584,081
Payments for operations & maintenance	(868,811)	(825,859)
Payments for administration	(14,616)	(13,026)
Net cash provided by operating activities	<u>771,287</u>	<u>745,196</u>
Cash flows from capital and related financing activities:		
Proceeds from issuing bonds, notes and other borrowings, net of issuance costs	4,679,212	3,423,787
Acquisition and construction of capital assets	(1,217,895)	(938,218)
Repayments of bonds, notes and other borrowings	(3,343,065)	(1,914,695)
Interest paid on bonds, notes and other borrowings	(576,516)	(540,753)
Net cash (used in) provided by capital and related financing activities	<u>(458,264)</u>	<u>30,121</u>
Cash flows from investing activities:		
Proceeds from sales and maturities of investments	61,240	41,166
Purchases of investments	(114,299)	(630,593)
Interest on investments	97,351	95,201
Net cash provided by (used in) investing activities	<u>44,292</u>	<u>(494,226)</u>
Net increase in cash and cash equivalents	357,315	281,091
Cash and cash equivalents, beginning of year	1,182,653	901,562
Cash and cash equivalents, end of year	<u>\$ 1,539,968</u>	<u>1,182,653</u>

Reconciliation of Operating Income to Net Cash

Provided by Operating Activities:		
Operating income	\$ 458,997	387,214
Adjustments to reconcile operating income to net cash provided by operating activities:		
Depreciation and amortization	364,337	320,382
Bad debt expense	89,400	92,481
Changes in net assets and liabilities:		
Receivables, net	(119,893)	(84,946)
Accounts payable	565	1,144
Receivable from the City	(22,216)	32,464
Refunds payable	6,972	(3,012)
Revenues received in advance	(6,875)	(531)
Net cash provided by operating activities	<u>\$ 771,287</u>	<u>745,196</u>

	Assets Unrestricted	Assets Restricted	Total
Cash and cash equivalents – beginning	\$ 5,274	1,177,379	1,182,653
Net increase	3,293	354,022	357,315
Cash and cash equivalents – ending	<u>\$ 8,567</u>	<u>1,531,401</u>	<u>1,539,968</u>

The following are the noncash capital and related financing activities:

- Interest expense includes the amortization of premium and discount in the amount of \$7,372 in 2003 and \$14,170 in 2002.
- Capital expenditures in the amount of \$231,390 and \$253,456 had been incurred but not paid at June 30, 2003 and 2002.
- The Board received capital assets of \$7,233 in 2003 and \$12,303 in 2002, which represent capital contributed by the City.

See accompanying notes to financial statements.

**(1) ORGANIZATION**

The New York City Water and Sewer System (the "System") provides water supply and distribution, and sewage collection, treatment, and disposal for The City of New York (the "City"). The System, as presented in the accompanying financial statements, began operations on July 1, 1985 and is a joint operation consisting of two legally separate and independent entities, the New York City Municipal Water Finance Authority (the "Authority") and the New York City Water Board (the "Board"). The Authority is a public benefit corporation created in accordance with the New York City Municipal Water Finance Act (the "Act"), duly enacted into law as Chapter 513 of the laws of 1984 of the State of New York, as amended by Chapter 514 of the laws of 1984 of the State of New York. The Board was created by Chapter 515 of the laws of 1984 of the State of New York. The Act empowers the Authority to issue bonds or notes to finance the cost of capital improvements to the System, and to refund any and all outstanding bonds and general obligation bonds of the City issued for water and sewer purposes. The Act empowers the Board to lease the System from the City and to fix and collect rates, fees, rents and other charges for the use of, or for services furnished, rendered, or made available by the System, to produce cash sufficient to pay debt service on the Authority's bonds and to place the System on a self-sustaining basis.

The physical operation and capital improvements of the System are performed by the City's Department of Environmental Protection subject to contractual agreements with the Authority and Board.

In accordance with Statement 14 of the Governmental Accounting Standards Board ("GASB"), the Board and the Authority are combined for general-purpose external reporting purposes since the Board and the Authority are fiscally interdependent. The System, in turn, is included for reporting purposes as a discretely presented component unit in the City's financial statements.

**(2) SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES**

The accompanying financial statements of the System have been prepared on the accrual basis of accounting. Revenues are recognized when earned and expenses recognized when incurred. GASB Statement No. 20, *Accounting and Financial Reporting for Proprietary Funds and Other Government Entities that Use Proprietary Funds*, provides proprietary activities with a choice of authoritative guidance issued after November 30, 1989. The System has elected to follow GASB pronouncements exclusively after that date. Other significant accounting policies are:

**(a) Investments and Cash Equivalents**

Investments and cash equivalents consist principally of securities of the United States and its agencies, certificates of deposit, and repurchase agreements with maturity periods of one year or less, and are carried at amortized cost, which approximates fair value. For purposes of the combined statements of cash flows, the System generally considers all highly liquid debt instruments purchased with maturities of three months or less to be cash equivalents.

**(b) Restricted Assets**

Proceeds from the issuance of debt and monies set aside for the operation and maintenance of the System are classified as restricted by applicable bond indentures.

**(c) Bond Discount and Bond Issuance Costs**

Bond discount and bond issuance costs are amortized over the life of the related bond issue, using the effective-yield method of amortization for bond discount and the straight-line method for bond issuance costs.

**(d) Utility Plant**

Utility plant acquired through purchase or internal construction is recorded at cost, net of retirements. Contributed utility plant is recorded at its estimated historical cost based on appraisals or other methods when historical cost information is not available, net of depreciation. Depreciation is computed using the straight-line method based upon estimated useful lives, as follows:

	Years
Buildings	40-50
Water supply and wastewater treatment systems	15-50
Water distribution and sewage collection systems	15-75
Equipment	5-35

Maintenance and repairs of property are charged to maintenance expense. Replacements and betterments are recorded as utility plant.

**(e) Operating Revenues and Operating Expenses**

Operating revenues consist of customer payments for services of the System. Revenues are based on billing rates imposed by the Board and upon customers' water and sewer usage. The System records estimated unbilled revenue at its year end. Operating expenses consist of administration, maintenance, repair and operations of the System, administration costs of the Board and the Authority, rental payments to the City, and bad debt expense.

**(f) Deferred Revenues**

Revenues received in advance of the period to which they relate are deferred and recorded as revenue when earned.

**(g) Deferred Bond Refunding Costs**

Deferred bond refunding costs represent the accounting loss incurred in advance refundings of outstanding bonds. In accordance with the provisions of GASB Statement No. 23, *Accounting and Financial Reporting of Debt Reported by Proprietary Activities*, gains or losses arising from debt refundings are deferred and amortized over the lesser of the remaining life of the old debt or the life of the new debt.

**(h) Reclassifications**

Certain reclassifications to the 2002 figures have been made in order to conform to the 2003 financial statement presentation.

**(i) Use of Estimates**

The preparation of financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual amounts could differ from those estimates.



**NEW YORK CITY WATER AND SEWER SYSTEM**  
Notes to Financial Statements, June 30, 2003 and 2002

**(3) FINANCING AGREEMENT**

The Financing Agreement (the "Agreement") provides that the Authority will issue bonds to finance the cost of capital investment in the water and sewer system serving the City. It also sets

forth the funding priority for the debt service costs of the Authority, operating costs of the water and sewer system, and the rental payment to the City.

**(4) UTILITY PLANT**

The following is a summary of utility plant activity for the fiscal years ended June 30, 2003 and 2002:

(in thousands)	Balance at June 30, 2001	Additions	Deletions	Balance at June 30, 2002	Additions	Deletions	Balance at June 30, 2003
Utility construction	\$ 3,549,203	1,018,432	723,769	3,843,866	1,181,399	686,185	4,339,080
Land	31,193	20,088	-	51,281	18,196	-	69,477
Buildings	21,615	-	-	21,615	456	-	22,071
Equipment	211,944	63,757	-	275,701	12,549	-	288,250
Water supply and wastewater treatment systems	7,786,471	558,122	457	8,344,136	391,440	-	8,735,576
Water distribution and sewage collection systems	6,349,065	101,890	7,136	6,443,819	281,740	48,704	6,676,855
Total	17,949,491	1,762,289	731,362	18,980,418	1,885,780	734,889	20,131,309
Less accumulated depreciation	4,573,701	294,630	7,593	4,860,738	319,632	48,704	5,131,666
Total	\$ 13,375,790	1,467,659	723,769	14,119,680	1,566,148	686,185	14,999,643

**(5) NET ASSETS**

At June 30, 2003 and 2002, the Authority had a net asset deficit of \$4,731 million and \$4,250 million, respectively, which amount is less than the \$9,322 million and \$8,862 million total net assets of the Board at June 30, 2003 and 2002, respectively.

Investments and deposits held by the system at June 30, 2003 and 2002 comprised:

(in thousands)	2003	2002
Unrestricted cash, cash equivalents (plus accrued interest)	\$ 8,567	5,274
Restricted cash, cash equivalents and investments (plus accrued interest)	2,272,548	1,864,292
	<u>2,281,115</u>	<u>1,869,566</u>

**(6) INVESTMENTS, CASH EQUIVALENTS  
AND CASH DEPOSITS**

The Water and Sewer General Revenue Bond Resolution (the "Resolution") authorizes the investment of bond proceeds. The guidelines issued by the Office of the New York State Comptroller and the Resolution establish the criteria for permissible investments of the System. In addition, the Board and the Authority have investment guidelines approved by their respective Boards of Directors. The System may invest in obligations of the Federal government or any subdivision or instrumentality thereof, obligations of the State of New York or any subdivision or instrumentality thereof provided that they are in the two highest rating categories of a rating agency, bankers' acceptances or certificates of deposit (CDs) issued by a New York State commercial bank with capital or surplus in excess of \$100 million, corporate securities or commercial paper rated highest by a rating agency when compared to similar-type securities, or repurchase agreements that are collateralized by obligations of the Federal government.

This amount is comprised of:

Carrying amount of deposits (including CDs)	7,146	44,837
Investments (plus accrued interest)	2,273,969	1,824,729
	<u>\$ 2,281,115</u>	<u>1,869,566</u>

**Cash Deposits**

The System follows the New York City Banking Commission designations for the System's bank depositories. The Commission consists of the Comptroller, the Mayor, and the Finance Commissioner of the City and uses independent bank rating agencies in part to assess the financial soundness of each bank, and the banking relationships are under constant operational and credit reviews. Each bank in which the System's cash is deposited is required to have its principal office in New York State and have capital stock, surplus, and undivided earnings aggregating at least \$100 million. The System had \$200 thousand on deposit at both June 30, 2003 and 2002, which was covered by Federal depository insurance.

**Investments**

The System's investment of cash is limited to U.S. Government guaranteed securities and U.S. Government agency securities purchased directly and through repurchase agreements as well as New York State securities, mutual funds and guaranteed investment contracts. The repurchase agreements must be collateralized by U.S. Government guaranteed securities in a range of 100% to 300% for the Board and 102% for the Authority. The fair value of investments is determined based on quoted market prices.

**NEW YORK CITY WATER AND SEWER SYSTEM**  
Notes to Financial Statements, June 30, 2003 and 2002

**(6) (CONTINUED)**

As of June 30, 2003, the System had the following investments and maturities:

Investment Type (in thousands)	Cost	Fair Value	Investment Maturity
<b>Unrestricted</b>			
Mutual funds	\$ 1,005	1,005	Less than one year
Repurchase agreements	850	850	Less than one year
	<u>1,855</u>	<u>1,855</u>	
<b>Restricted</b>			
U.S. Government securities	\$ 1,577,965	1,578,479	Less than one year
New York State securities	5,756	5,901	Greater than one year
Repurchase agreements	67,000	67,099	Less than one year
Guaranteed investment contracts	619,084	620,685	Less than one year
	<u>\$ 2,269,805</u>	<u>2,272,164</u>	

As of June 30, 2002, the System had the following investments and maturities:

Investment Type (in thousands)	Cost	Fair Value	Investment Maturity
<b>Unrestricted</b>			
Repurchase agreements	\$ 1,310	1,311	Less than one year
<b>Restricted</b>			
U.S. Government securities	\$ 1,127,954	1,128,585	Less than one year
New York State securities	5,756	5,900	Greater than one year
Repurchase agreements	66,408	66,419	Less than one year
Guaranteed investment contracts	618,588	620,184	Less than one year
Mutual funds	2,330	2,330	Less than one year
	<u>\$ 1,821,036</u>	<u>1,823,418</u>	

**(7) LEASE AGREEMENT**

The Board is party to a long-term lease (the "Lease") with the City, which transfers all the water- and sewer-related real and personal property to the Board for the term of the lease. The Lease term commenced on July 1, 1985, and continues until the later of the fortieth anniversary of the commencement of the lease, or the date on which all bonds, notes or other obligations of the Authority are paid in full, or provisions for such payment have been made pursuant to the applicable debt instrument. The Lease provides for payments to the City to cover the following:

(a) an amount sufficient to pay the cost of administration, maintenance, repair and operation of the leased property, which includes overhead costs incurred by the City attributable to the leased property, net of the amount of any Federal, State, or other operating grants received by the City;

(b) an amount sufficient to reimburse the City for capital costs incurred by the City for the construction of capital improvements to the leased property which are not paid or reimbursed from any other source.

In addition to the payments described above, the Board pays rent to the City in each fiscal year in an amount not to exceed the greater of (a) the principal and interest payable on general obligation bonds issued by the City for water and sewer purposes certified by the City to be paid within such fiscal year or (b) 15% of principal and interest payable on the bonds of the Authority to be paid within such fiscal year.

A summary of operation and maintenance expenses at June 30, 2003 and 2002 is as follows:

(in thousands)	2003	2002
Water transmission and distribution	\$ 285,929	279,321
Sewer collection systems	336,391	325,595
City agency support cost	36,557	35,195
Fringe benefits	73,740	72,484
Judgments and claims	15,056	18,166
	<u>747,673</u>	<u>730,757</u>
Rental payments to the City	102,148	127,150
	<u>\$ 849,821</u>	<u>857,907</u>

**(8) PAYABLE TO AND RECEIVABLE FROM THE CITY**

As of June 30, 2003 and 2002, all utility construction recorded by the System which has not been reimbursed to the City has been recorded as a payable to the City, net of the amount of any State or Federal capital grants received by the City.

As of June 30, 2003, the System had a receivable from the City for overpayment of operations and maintenance expense. As of June 30, 2002, the System had a payable to the City for underpayment of operations and maintenance expense.

**NEW YORK CITY WATER AND SEWER SYSTEM**  
Notes to Financial Statements, June 30, 2003 and 2002

**(9) SHORT-TERM LIABILITIES**

In fiscal years 2002 and 2003, the changes in short-term liabilities were as follows:

(in thousands)	Balance at June 30, 2001	Additions	Deletions	Balance at June 30, 2002	Additions	Deletions	Balance at June 30, 2003
Commercial paper <sup>(1)</sup>	\$ 500,000	1,098,000	970,000	628,000	1,558,800	1,361,800	825,000

<sup>(1)</sup>Commercial paper is used to pay construction costs to the City in advance of long term bond financing

Commercial paper activity comprises the following for the year ended June 30, 2003:

(in thousands)	Balance at June 30, 2002	Issued	Retired	Balance at June 30, 2003
Commercial Paper Series 1 – Variable Rate, Short-term Rolling Maturity Backed by Letter of Credit	\$ 200,000	391,000	391,000	200,000
Commercial Paper Series 3 – Variable Rate, Short-term Rolling Maturity Backed by Letter of Credit	–	75,000	75,000	–
Commercial Paper Series 4 – Variable Rate, Short-term Rolling Maturity Backed by Letter of Credit	28,000	287,800	190,800	125,000
Commercial Paper Series 5 – Variable Rate, Short-term Rolling Maturity Backed by Line of Credit	200,000	400,000	400,000	200,000
Commercial Paper Series 6 – Variable Rate, Short-term Rolling Maturity Backed by Line of Credit	200,000	250,000	250,000	200,000
Commercial Paper Series 7 – Variable Rate, Short-term Rolling Maturity	–	155,000	55,000	100,000
<b>Total commercial paper payable</b>	<b>\$ 628,000</b>	<b>1,558,800</b>	<b>1,361,800</b>	<b>825,000</b>

**(10) LONG-TERM LIABILITIES**

In fiscal years 2002 and 2003, the changes in long-term liabilities were as follows:

Bonds payable: (in thousands)	Balance at June 30, 2001	Additions	Deletions	Balance at June 30, 2002	Additions	Deletions	Balance at June 30, 2003	Due Within One Year
First resolution	\$ 8,091,192	1,011,945	247,123	8,856,014	2,010,310	1,232,234	9,634,090	141,783
Second resolution	2,030,656	1,329,905	697,571	2,662,990	1,110,102	749,031	3,024,061	90,535
Total bonds payable	10,121,848	2,341,850	944,694	11,519,004	3,120,412	1,981,265	12,658,151	232,318
Less discounts (net)	372,409	14,622	15,139	371,892	(49,341)	25,914	296,637	–
Less deferred refunding costs	229,145	1,241	21,865	208,521	50,889	25,181	234,229	–
<b>Total long-term liabilities</b>	<b>\$ 9,520,294</b>	<b>2,325,987</b>	<b>907,690</b>	<b>10,938,591</b>	<b>3,118,864</b>	<b>1,930,170</b>	<b>12,127,285</b>	<b>232,318</b>

**NEW YORK CITY WATER AND SEWER SYSTEM**  
Notes to Financial Statements, June 30, 2003 and 2002

With respect to all series, the Board has agreed to maintain rates and charges to provide revenues at levels sufficient to pay principal and interest requirements as well as to meet certain debt service coverage and operating cost funding requirements. All series are specific obligations of the Authority payable solely from and secured by a pledge of and lien on the gross revenue of the System, as defined.

Certain bonds issued by the Authority involve the concurrent issuance of long-term variable-rate securities that are matched with long-term floating-rate securities. These obligations, taken together as a whole, yield a fixed rate of interest at all times. These securities have been issued to achieve a lower prevailing fixed rate of interest in relation to traditional fixed-rate bonds.

During 2003, the Authority issued \$1,000 million of bonds to advance refund \$973.5 million of outstanding bonds. The advance refundings resulted in an accounting loss of \$50.9 million. The Authority, in effect, reduced its aggregate debt service by \$123 million and obtained an economic benefit of \$102 million.

During 2003 and 2002, the Authority defeased \$145.1 million and \$37.6 million, respectively, of outstanding bonds with \$158.1 million and \$40 million, respectively, of current revenue, which resulted in an accounting loss of \$15.7 million and \$3.4 million, respectively.

During 2002, the Authority issued \$579.3 million of bonds that will refund outstanding bonds at a future call date. The Authority will reduce debt service by \$63.5 million and obtain an economic benefit of \$30.5 million.

During 2003 and 2002, the Authority renegotiated the terms of \$666.6 million and \$614.5 million, respectively, of its notes with the New York State Environmental Facilities Corporation. The Authority in effect increased its aggregate debt service by \$173.7 million and \$43.1 million, respectively, and obtained an economic benefit of \$52.3 million and \$38.6 million, respectively.

During 2003, the Authority issued \$50 million of bonds that will refund \$50 million of principal of the 2003 B issue in June 2004.

The Authority has defeased cumulatively \$5.759 billion and \$4.640 billion of outstanding bonds as of June 30, 2003 and 2002, respectively, by placing proceeds of refunding bonds issued in an irrevocable escrow account to provide for all future debt service payments on defeased bonds. Proceeds were used to purchase U.S. Government securities that were placed in the irrevocable escrow account. Accordingly, the escrow account assets and liabilities for the defeased bonds are not included in the Authority's financial statements.

As of June 30, 2003 and 2002, \$4.663 billion and \$3.841 billion of the defeased bonds, respectively, had been retired from the assets of the escrow accounts.

Debt service requirements to maturity including amounts relating to commercial paper at June 30, 2003 are as follows:

Year ending June 30 (in thousands)	Principal	Interest <sup>(1)</sup>	Total
2004	\$ 1,057,318	501,560	1,558,878
2005	200,667	494,246	694,913
2006	210,917	485,917	696,834
2007	161,295	498,066	659,361
2008	241,361	501,625	742,986
2009-2013	1,412,964	2,393,488	3,806,452
2014-2018	1,806,540	2,086,009	3,892,549
2019-2023	2,251,823	1,678,482	3,930,305
2024-2028	2,628,285	1,211,499	3,839,784
2029-2033	2,778,960	563,056	3,342,016
2034-2038	733,021	63,793	796,814
Total	\$ 13,483,151	10,477,741	23,960,892

<sup>(1)</sup> Includes interest for variable rate bonds estimated at .09%, which is the rate at the end of the fiscal year. Variable-rate bonds are sold daily or weekly and interest rates are determined by the market on the day sold.

**NEW YORK CITY WATER AND SEWER SYSTEM**  
Notes to Financial Statements, June 30, 2003 and 2002

Bonds, notes payable, and commercial paper comprise the following for the year ended June 30, 2003:

(in thousands)	Balance at June 30, 2002	Issued	Retired	Balance at June 30, 2003
1987 Fiscal Series A – 5.00% Serial and Term Bonds maturing in varying installments through 2017	\$ 69,690	–	69,690	–
1987 Fiscal Series B – 5.00% Serial Bond maturing in 2017	13,275	–	13,275	–
1991 Fiscal Series B – 6.00% to 7.25% Serial and Term Bonds maturing in varying installments through 2012	22,535	–	3,285	19,250
1992 Fiscal Series B – 6.66% to 6.86% Serial and Term Bonds maturing in varying installments through 2014	25,609	–	3,999	21,610
1993 Fiscal Series A – 5.875% to 6.0% Serial, Term, and Capital Appreciation Bonds maturing in varying installments through 2013	999,870	–	770,490	229,380
1993 Fiscal Series C – Adjustable Rate Term Bonds maturing 2022	100,000	–	–	100,000
1994 Fiscal Series 1 – 3.00% to 6.00% Serial Bonds maturing in varying installments through 2015	236,850	–	205,045	31,805
1994 Fiscal Series B – 4.875% to 5.125% Fixed Rate Bonds maturing in varying installments through 2019	493,235	–	207,295	285,940
1994 Fiscal Series C – Adjustable Rate term bonds maturing in 2023	200,000	–	–	200,000
1994 Fiscal Series D – Auction Rate Bonds maturing in varying installments through 2013	83,500	–	–	83,500
1994 Fiscal Series E – Inverse Rate Bonds maturing in varying installments through 2013	83,500	–	–	83,500
1994 Fiscal Series F – 5.40% to 5.75% Serial Bonds maturing in varying installments through 2023	210,820	–	92,920	117,900
1994 Fiscal Series G – Adjustable, Auction and Leveraged Reverse Rate Bonds maturing in varying installments through 2024	205,000	–	–	205,000
1995 Fiscal Series A – Adjustable Rate Term Bonds maturing in varying installments through 2025	216,700	–	–	216,700
1995 Fiscal Series 1 – 5.25% to 6.875% Serial Bonds maturing in varying installments through 2016	41,667	–	5,065	36,602
1996 Fiscal Series 1 – 4.3% to 6.00% Serial Bonds maturing in varying installments through 2017	88,830	–	88,830	–
1996 Fiscal Series 2 – 2.95% to 5.20% Serial Bonds maturing in varying installments through 2017	22,365	–	22,365	–
1996 Fiscal Series 3 – 3.60% to 5.85% Serial Bonds maturing in varying installments through 2017	35,605	–	35,605	–
1996 Fiscal Series A – 5.10% to 5.15% Serial Bonds maturing in varying installments through 2023	150,740	–	28,590	122,150
1996 Fiscal Series B – 5.75% to 5.875% Serial Bonds maturing in varying installments through 2026	491,025	–	–	491,025
1996 Fiscal Series C – 4.90% to 5.75% Serial Bonds maturing in varying installments through 2017	76,980	–	335	76,645
1997 Fiscal Series A – 4.85% to 5.75% Serial Bonds maturing in varying installments through 2026	365,125	–	–	365,125

**NEW YORK CITY WATER AND SEWER SYSTEM**  
Notes to Financial Statements, June 30, 2003 and 2002

Bonds, notes payable, and commercial paper comprise the following for the year ended June 30, 2003: (continued)

(in thousands)	Balance at June 30, 2002	Issued	Retired	Balance at June 30, 2003
1997 Fiscal Series B – 5.75% to 5.80% Serial Bonds maturing in varying installments through 2029	\$ 700,000	–	–	700,000
1998 Fiscal Series 1 – 4.00% to 5.35% Serial Bonds maturing in varying installments through 2017	37,810	–	1,705	36,105
1998 Fiscal Series 2 – 4.00% to 6.00% Serial Bonds maturing in varying installments through 2019	97,160	–	97,160	–
1998 Fiscal Series 3 – 4.30% to 6.00% Serial Bonds maturing in varying installments through 2016	428,851	–	23,271	405,580
1998 Fiscal Series 4 – 3.60% to 5.20% Serial Bonds maturing in varying installments through 2018	13,210	–	685	12,525
1998 Fiscal Series 5 – 4.61% to 5.10% Serial Bonds maturing in varying installments through 2019	76,155	–	76,155	–
1998 Fiscal Series 6 – 4.827% to 5.125% Serial Bonds maturing in varying installments through 2019	16,679	–	714	15,965
1998 Fiscal Series A – 4.80% to 5.125% Serial Bonds maturing in varying installments through 2022	283,850	–	–	283,850
1998 Fiscal Series B – 5.125% to 5.25% Serial Bonds maturing in varying installments through 2030	449,525	–	–	449,525
1998 Fiscal Series C – 4.30% to 5.125% Serial Bonds maturing in varying installments through 2021	87,325	–	275	87,050
1998 Fiscal Series D – 4.25% to 5.00% Serial and Capital Appreciation Bonds maturing in varying installments through 2025	387,780	–	3,380	384,400
1999 Fiscal Series 1 – 4.00% to 5.25% Serial Bonds maturing in varying installments through 2020	141,465	–	141,465	–
1999 Fiscal Series 2 – 4.00% to 5.25% Serial Bonds maturing in varying installments through 2020	112,121	–	4,104	108,017
1999 Fiscal Series A – 4.75% to 5.00% Serial Bonds maturing in varying installments through 2031	301,470	–	–	301,470
1999 Fiscal Series B – 4.0% to 5.25% Serial and Capital Appreciation Bonds maturing in varying installments through 2020	239,500	–	6,695	232,805
2000 Fiscal Series A – 5.50% to 5.75% Serial Bonds maturing in varying installments through 2032	275,735	–	–	275,735
2000 Fiscal Series B – 6.00% to 6.10% Serial Bonds maturing in varying installments through 2033	131,865	–	–	131,865
2000 Fiscal Series C – Adjustable Rate Term Bonds maturing in 2033	107,500	–	–	107,500
2000 Fiscal Series 2 – 3.80% to 5.96% Serial Bonds maturing in varying installments through 2019	11,465	–	440	11,025
2001 Fiscal Series A – 5.50% Term Bonds maturing in varying installments through 2033 through 2033	328,225	–	–	328,225
2001 Fiscal Series B – 4.5% to 5.125% Serial and Term Bonds maturing in varying installments through 2031	68,540	–	140	68,400
2001 Fiscal Series C – 5.125% Term Bonds maturing in varying installments through 2033	112,040	–	–	112,040

**NEW YORK CITY WATER AND SEWER SYSTEM**  
Notes to Financial Statements, June 30, 2003 and 2002

Bonds, notes payable, and commercial paper comprise the following for the year ended June 30, 2003: (continued)

(in thousands)	Balance at June 30, 2002	Issued	Retired	Balance at June 30, 2003
2001 Fiscal Series D – 4.5% to 5.5% Serial and Capital Appreciation Bonds maturing in varying installments through 2025	\$ 292,875	–	4,500	288,375
2001 Fiscal Series E – 4.5% to 5.25% Serial and Term Bonds maturing in varying installments through 2031	86,105	–	–	86,105
2001 Fiscal Series F – Adjustable Rate Bonds maturing in varying Installments through 2033 through 2033	184,130	–	–	184,130
2002 Fiscal Series A – 5.00% to 5.75% Serial and Term Bonds maturing in varying installments through 2033	216,305	–	–	216,305
2002 Fiscal Series B – 3.625% to 5.00% Serial and Term Bonds maturing in varying installments through 2026	171,455	–	–	171,455
2002 Fiscal Series C – 4.1% to 5.125% Serial and Term Bonds maturing in varying installments through 2032	46,580	–	–	46,580
2002 Fiscal Series D – 3.0% to 4.90% Serial and Term Bonds maturing in varying installments through 2020	41,745	–	–	41,745
2002 Fiscal Series E – 3.4% to 5.0% Serial and Term Bonds maturing in varying installments through 2026	213,850	–	–	213,850
2002 Fiscal Series F – 3.6% to 5.0% Serial and Term Bonds maturing in varying installments through 2029	105,635	–	–	105,635
2002 Fiscal Series G – 5.00% to 5.125% Term Bonds maturing in varying installments through 2034	216,375	–	–	216,375
2002 Fiscal Series 1 – 4.82% to 5.25% Serial Bonds maturing in varying installments through 2031	200,846	–	4,030	196,816
2002 Fiscal Series 2 – 4.22% to 5.00% Serial Bonds maturing in varying installments through 2031	70,895	–	1,967	68,928
2002 Fiscal Series 3 – 4.65% to 5.00% Serial Bonds maturing in varying installments through 2031	511,997	–	10,484	501,513
2002 Fiscal Series 4 – 5.13% to 6.74% Serial Bonds maturing in varying installments through 2023	227,328	–	3,830	223,498
2002 Fiscal Series 5 – 3.82% to 5.21% Serial Bonds maturing in varying installments through 2031	180,222	–	2,806	177,416
2002 Fiscal Series 6 – 3.82% to 5.21% Serial Bonds maturing in varying installments through 2019	98,565	–	3,796	94,769
2002 Fiscal Series 7 – 7.4% to 7.5% Serial Bonds maturing in varying installments through 2012	12,905	–	1,855	11,050
2003 Fiscal Series A – 4.0% to 6.0% Serial, Term and muni CPI Bonds maturing in varying installments through 2034	–	741,090	21,910	719,180
2003 Fiscal Series B – 4.0% to 5.25% Refundable Principal Installment Bonds maturing in varying installments through 2006	–	150,000	–	150,000
2003 Fiscal Series C Adjustable Rate Bonds maturing in 2018	–	300,300	–	300,300
2003 Fiscal Series D – 2.0% to 5.25% Serial and Term Bonds maturing in varying installments through 2017	–	250,000	5,455	244,545
2003 Fiscal Series E – 5% Term Bonds maturing in 2034 and 2038	–	367,265	–	367,265

**NEW YORK CITY WATER AND SEWER SYSTEM**  
Notes to Financial Statements, June 30, 2003 and 2002

Bonds, notes payable, and commercial paper comprise the following for the year ended June 30, 2003: (continued)

(in thousands)	Balance at June 30, 2002	Issued	Retired	Balance at June 30, 2003
2003 Fiscal Series F – Adjustable Rate Bonds maturing in 2035	\$ –	201,655	–	201,655
2003 Fiscal Series 1 – 4.23% to 4.375% Serial Bonds maturing in varying installments through 2028	–	148,040	782	147,258
2003 Fiscal Series 2 – 5.27 Serial Bonds maturing in varying installments through 2028	–	608,655	15,017	593,638
2003 Fiscal Series 3 – 5.15% Serial Bonds maturing in varying installments through 2025	–	22,365	610	21,755
2003 Fiscal Series 4 – 5.18% Serial Bonds maturing in varying installments through 2025	–	35,605	965	34,640
2003 Fiscal Series 5 – 4.23% to 4.45% Serial Bonds maturing in varying installments through 2032	–	295,437	280	295,157
<b>Total debt payable</b>	<b>11,519,004</b>	<b>3,120,412</b>	<b>1,981,266</b>	<b>12,658,151</b>
Current portion of bonds and notes payable	189,758	93,000	50,440	232,319
<b>Bonds and notes payable, less current portion</b>	<b>\$ 11,329,246</b>	<b>3,027,412</b>	<b>1,930,826</b>	<b>12,425,832</b>

**Derivatives**

In 2003, the Authority sold \$20 million of muni-CPI bonds in the 2013 maturity of its Fiscal 2003 Series A issue. In connection with the muni-CPI bonds, the Authority entered into an interest rate exchange swap under which the Authority receives a floating rate tied to the consumer price index ("CPI"), which matches the rate on the bonds, and pays a fixed interest rate. This allowed the Authority to achieve a yield ten basis points lower than traditional fixed-rate debt with a 2013 maturity. The terms of this transaction require the counter-party to pay the Authority the muni-CPI rate, which is set at 1.53% plus a floating rate CPI, with the CPI being equal to the change in the consumer price index for a given period. In keeping with market standards, the Authority or the counter-party may terminate the swap agreement if the other party fails to perform under its terms

as defined in the agreement. The Authority views termination risk to be remote at this time. Depending on the fair value at the time of termination, the Authority may have a liability to the counter-party.

Through the swap agreement the Authority is exposed to credit risk i.e., the risk that the counter-party fails to perform its contractual obligations. The appropriate measurement of this risk at the reporting date is the fair value of the swap. The fair value of the swap at June 30, 2003 was approximately \$1 million in favor of the counter-party. To mitigate credit risk, the agreement requires the counter-party to post collateral for the Authority's benefit if it is downgraded below a designated threshold, as defined in the agreement.

**(11) RESTRICTED ASSETS**

Certain cash and investments, plus accrued interest and other receivables, of the System are restricted as follows:

(in thousands)	2003	2002
<b>The Board</b>		
Operation and maintenance reserve account	\$ 132,096	128,084
Operation and maintenance reserve general account	10	10
	<b>132,106</b>	<b>128,094</b>
<b>The Authority</b>		
Revenue fund	203,695	245,072
Debt service reserve fund	678,115	631,248
Construction fund	556,314	208,822
Escrow fund	702,318	652,294
	<b>2,140,442</b>	<b>1,737,436</b>
	<b>\$ 2,272,548</b>	<b>1,865,530</b>



**NEW YORK CITY WATER AND SEWER SYSTEM**  
Notes to Financial Statements, June 30, 2003 and 2002

The operation and maintenance reserve account is established as a depository to hold the operations and maintenance reserve fund as required by the Resolution. It is required to hold one-sixth of the operating expenses as set forth in the annual budget. It is funded through the cash receipts of the Board. The operation and maintenance reserve general account is established as a depository to hold all excess funds of the Board after all legally mandated transfers have been made. It is available to meet any deficiencies in the flow of funds including debt service and, alternatively, can be used as a financing source for capital expenditures.

The revenue fund is established as a depository to fund the debt service, Authority expense, debt service reserve and arbitrage funds. It is funded through cash transfers from the Board. The debt service reserve fund is established as a depository to hold the maximum annual debt service requirement for the next current or any future fiscal year. It is funded through revenue bond proceeds and the revenue fund. The debt service fund is established as a depository to pay all principal and interest payments on the Authority's debt for the current fiscal year. It is funded through the revenue fund. The construction fund is established as a depository to pay all capital construction costs incurred by the City and reimbursed by the Authority. It is funded through the proceeds of bond and note sales. The arbitrage rebate fund is established to provide for arbitrage rebate payments to the U.S. Department of the Treasury. It is funded through the revenue fund.

**(12) COMMITMENTS AND CONTINGENCIES**

**Construction**

The System has contractual commitments of approximately \$4,197 and \$4,230 million at June 30, 2003 and June 30, 2002, respectively, for water and sewer projects.

**Claims and Litigation**

In accordance with the Lease, the Board is required to reimburse the City for any judgment or settlement paid by the City arising out of a tort claim to the extent that the City's liability is related to capital improvements and the operation or maintenance of the System. However, in no event shall the payment made to the City, in any fiscal year, exceed an amount equal to 5% of the aggregate revenues shown on the last year-end audited financial statements of the System. In addition, the System is required to reimburse the City, to the extent requested by the City, for the payment of any judgment or settlement arising out of a contract claim with respect to the construction of capital improvements. In addition, the City has agreed, subject to certain conditions, to indemnify the Authority, the Board and their staffs against any and all liability in connection with any act done or omitted in the exercise of their powers which is taken or omitted in good faith in pursuance of their purposes under the Act. Currently, the City is a defendant in a significant number of lawsuits pertaining to the System. The litigation includes, but is not limited to, actions commenced and claims asserted against the City arising out of alleged torts, alleged breaches of contract, condemnation proceedings and other alleged violations of law. As of June 30, 2003, the potential future

liability attributable to the System for claims outstanding against the City was estimated to be \$148 million. This amount is included in the estimated liability for unsettled claims, which is reported in the City's statement of net assets. The potential future liability is the City's best estimate based on available information. The estimate may be revised as further information is obtained and as pending cases are litigated.

**Arbitrage Rebate**

To maintain the exemption from Federal income tax of interest on bonds issued subsequent to January 1, 1986, the System will fund amounts required to be rebated to the Federal Government pursuant to Section 148 of the Internal Revenue Code of 1986, as amended ("the Code"). The Code requires the payment to the United States Treasury of the excess of the amount earned on all non-purpose obligations over the amount that would have been earned if the gross proceeds of the issue were invested at a rate equal to the yield on the issue, together with any earnings attributable to such excess. Construction funds, debt service funds or any other funds or accounts funded with proceeds of such bonds, including earnings, or pledged to or expected to be used to pay interest on such bonds are subject to this requirement. Payment is to be made after the end of the fifth bond year and after every fifth bond year thereafter, and within 60 days after retirement of the bonds. During 2003, the System paid \$477 thousand in rebates and had no liability at June 30, 2003. At June 30, 2002, the System had accrued \$406 thousand for such liability.

**(13) POST-EMPLOYMENT BENEFITS AND PENSION PLANS**

The employees of the System are covered under the pension plans of the City. The employer's cost for these plans has been allocated to the System under operations and maintenance expense.

**(14) SUBSEQUENT EVENTS**

On September 10, 2003, the Authority issued fiscal 2004 Series A First Resolution Bonds in the aggregate amount of \$217 million to reimburse outstanding commercial paper notes, to pay certain costs of issuance, and to fund certain reserves.

On October 16, 2003, the Authority issued Fiscal 2004 Series 1 Second Resolution Bonds in the aggregate amount of \$300 million to reimburse outstanding commercial paper notes, to refund outstanding bonds, and to pay certain costs of issuance.

On August 5, 2003, a fire at a sewage treatment plant in Brooklyn damaged the system designed to control odors in the plant. The cost to repair the plant is estimated to be between \$10 and \$15 million.

**NEW YORK CITY WATER AND SEWER SYSTEM**  
Financial Statements

**COMBINING BALANCE SHEET**

June 30, 2003

**Schedule I**

(in thousands)	New York City Water Board	New York City Municipal Water Finance Authority	Elimi- nations	Total
<b>Assets</b>				
Utility plant in service, less accumulated depreciation of \$5,131,666	\$ 10,660,563	-	-	10,660,563
Utility plant construction	4,339,080	-	-	4,339,080
	<u>14,999,643</u>	<u>-</u>	<u>-</u>	<u>14,999,643</u>
<b>Current assets:</b>				
Unrestricted cash and cash equivalents	7,587	980	-	8,567
Accounts receivable:				
Billed, less allowance for uncollectible water and sewer receivables of \$268,235	336,943	-	-	336,943
Unbilled	137,500	-	-	137,500
Receivable from the City	13,213	-	-	13,213
Accrued interest receivable	1	-	-	1
Other	-	10,374	-	10,374
Total current unrestricted assets	<u>495,244</u>	<u>11,354</u>	<u>-</u>	<u>506,598</u>
<b>Restricted assets:</b>				
Cash and cash equivalents	67,297	1,464,104	-	1,531,401
Investments	64,422	674,367	-	738,789
Accrued interest receivable	388	1,970	-	2,358
Total current restricted assets	<u>132,107</u>	<u>2,140,441</u>	<u>-</u>	<u>2,272,548</u>
Total current assets	<u>627,351</u>	<u>2,151,795</u>	<u>-</u>	<u>2,779,146</u>
Revenue requirement to be billed by and received from the Board	-	6,214,918	(6,214,918)	-
Long-term deferred bond and financing expenses	-	111,794	-	111,794
Total assets	<u>\$ 15,626,994</u>	<u>8,478,507</u>	<u>(6,214,918)</u>	<u>17,890,583</u>
<b>Liabilities and Net Assets</b>				
<b>Long-term liabilities:</b>				
Bonds and notes payable, less current portion	\$ -	12,425,832	-	12,425,832
Net discount on bonds and notes payable	-	(296,637)	-	(296,637)
Deferred bond refunding cost	-	(234,229)	-	(234,229)
Revenue requirements payable to the Authority	6,214,918	-	(6,214,918)	-
Total long-term liabilities	<u>6,214,918</u>	<u>11,894,966</u>	<u>(6,214,918)</u>	<u>11,894,966</u>
<b>Current liabilities:</b>				
Accounts payable and accrued expenses	807	26,295	-	27,102
Revenues received in advance	69,156	-	-	69,156
Current portion of bonds and notes payable	-	1,057,318	-	1,057,318
Payable to the City	-	231,390	-	231,390
Refunds payable to customers	20,373	-	-	20,373
Total current liabilities	<u>90,336</u>	<u>1,315,003</u>	<u>-</u>	<u>1,405,339</u>
Total liabilities	<u>6,305,254</u>	<u>13,209,969</u>	<u>(6,214,918)</u>	<u>13,300,305</u>
<b>Net assets:</b>				
Invested in capital assets, net of related debt	14,999,643	(10,892,390)	-	4,107,253
Restricted for debt service	-	203,695	-	203,695
Restricted for operations & maintenance	132,107	-	-	132,107
Unrestricted (deficit)	(5,810,010)	5,957,233	-	147,223
Total net assets (deficit)	<u>9,321,740</u>	<u>(4,731,462)</u>	<u>-</u>	<u>4,590,278</u>
Total liabilities and net assets (deficit)	<u>\$ 15,626,994</u>	<u>8,478,507</u>	<u>(6,214,918)</u>	<u>17,890,583</u>

See accompanying independent auditors' report.

**NEW YORK CITY WATER AND SEWER SYSTEM**  
Financial Statements

**COMBINING BALANCE SHEET**

**Schedule II**

June 30, 2002

(in thousands)	New York City Water Board	New York City Municipal Water Finance Authority	Elimi- nations	Total
<b>Assets</b>				
Utility plant in service, less accumulated depreciation of \$4,860,738	\$ 10,275,814	-	-	10,275,814
Utility plant construction	3,843,866	-	-	3,843,866
	<u>14,119,680</u>	<u>-</u>	<u>-</u>	<u>14,119,680</u>
<b>Current assets:</b>				
Unrestricted cash and cash equivalents	5,270	4	-	5,274
Accounts receivable:				
Billed, less allowance for uncollectible water and sewer receivables of \$298,878	330,482	-	-	330,482
Unbilled	110,000	-	-	110,000
Receivable from the City	243	-	-	243
Accrued interest receivable	1	-	-	1
Other	-	15,810	-	15,810
Total current unrestricted assets	<u>445,996</u>	<u>15,814</u>	<u>-</u>	<u>461,810</u>
<b>Restricted assets:</b>				
Cash and cash equivalents	66,465	1,110,914	-	1,177,379
Investments	60,003	624,527	-	684,530
Accrued interest receivable	388	1,995	-	2,383
Other receivable	1,238	-	-	1,238
Total current restricted assets	<u>128,094</u>	<u>1,737,436</u>	<u>-</u>	<u>1,865,530</u>
Total current assets	<u>574,090</u>	<u>1,753,250</u>	<u>-</u>	<u>2,327,340</u>
Revenue requirement to be billed by and received from the Board	-	5,732,433	(5,732,433)	-
Long-term deferred bond and financing expenses	-	110,715	-	110,715
Total assets	<u>\$ 14,693,770</u>	<u>7,596,398</u>	<u>(5,732,433)</u>	<u>16,557,735</u>
<b>Liabilities and Net Assets</b>				
<b>Long-term liabilities:</b>				
Bonds and notes payable, less current portion	\$ -	11,329,246	-	11,329,246
Net discount on bonds and notes payable	-	(371,892)	-	(371,892)
Deferred bond refunding costs	-	(208,521)	-	(208,521)
Revenue requirements payable to the Authority	5,732,433	-	(5,732,433)	-
Total long-term liabilities	<u>5,732,433</u>	<u>10,748,833</u>	<u>(5,732,433)</u>	<u>10,748,833</u>
<b>Current liabilities:</b>				
Accounts payable and accrued expenses	323	26,528	-	26,851
Revenues received in advance	76,031	-	-	76,031
Current portion of bonds and notes payable	-	817,758	-	817,758
Payable to the City	9,246	253,456	-	262,702
Refunds payable to customers	13,401	-	-	13,401
Total current liabilities	<u>99,001</u>	<u>1,097,742</u>	<u>-</u>	<u>1,196,743</u>
Total liabilities	<u>5,831,434</u>	<u>11,846,575</u>	<u>(5,732,433)</u>	<u>11,945,576</u>
<b>Net assets:</b>				
Invested in capital assets, net of related debt	14,119,680	(9,947,698)	-	4,171,982
Restricted for debt service	-	245,072	-	245,072
Restricted for operations & maintenance	118,848	-	-	118,848
Unrestricted (deficit)	(5,376,192)	5,452,449	-	76,257
Total net assets (deficit)	<u>8,862,336</u>	<u>(4,250,177)</u>	<u>-</u>	<u>4,612,159</u>
Total liabilities and net assets (deficit)	<u>\$ 14,693,770</u>	<u>7,596,398</u>	<u>(5,732,433)</u>	<u>16,557,735</u>

See accompanying independent auditors' report.

**NEW YORK CITY WATER AND SEWER SYSTEM**  
Financial Statements

**COMBINING STATEMENT OF REVENUES, EXPENSES AND CHANGES IN NET ASSETS**

**Schedule III**

Year ended June 30, 2003

(in thousands)	New York City Water Board	New York City Municipal Water Finance Authority	Elimi- nations	Total
<b>Assets</b>				
<b>Operating revenues:</b>				
Water supply and distribution	\$ 690,093	-	-	690,093
Sewer collection and treatment	952,985	-	-	952,985
Other operating revenues	68,842	65,816	-	134,658
Total operating revenues	<u>1,711,920</u>	<u>65,816</u>	<u>-</u>	<u>1,777,736</u>
<b>Operating expenses:</b>				
Operation and maintenance	849,821	-	-	849,821
Bad debt expense	89,400	-	-	89,400
Administration and general	2,502	12,679	-	15,181
Total operating expenses	<u>941,723</u>	<u>12,679</u>	<u>-</u>	<u>954,402</u>
Depreciation and amortization	319,632	44,705	-	364,337
Operating income	<u>450,565</u>	<u>8,432</u>	<u>-</u>	<u>458,997</u>
<b>Nonoperating revenue (expenses):</b>				
Interest expense	-	(584,347)	-	(584,347)
Investment income	1,606	94,630	-	96,236
Net income (loss) before capital contributions	<u>452,171</u>	<u>(481,285)</u>	<u>-</u>	<u>(29,114)</u>
Capital contributions	7,233	-	-	7,233
Increase (decrease) in net assets	<u>459,404</u>	<u>(481,285)</u>	<u>-</u>	<u>(21,881)</u>
Net assets (deficit) – beginning of the period	8,862,336	(4,250,177)	-	4,612,159
Net assets (deficit) – end of the period	<u>\$ 9,321,740</u>	<u>(4,731,462)</u>	<u>-</u>	<u>4,590,278</u>

See accompanying independent auditors' report.

**NEW YORK CITY WATER AND SEWER SYSTEM**  
Financial Statements

**COMBINING STATEMENT OF REVENUES, EXPENSES AND CHANGES IN NET ASSETS**

**Schedule IV**

Year ended June 30, 2002

(in thousands)	New York City Water Board	New York City Municipal Water Finance Authority	Elimi- nations	Total
<b>Operating revenues:</b>				
Water supply and distribution	\$ 648,319	-	-	648,319
Sewer collection and treatment	907,324	-	-	907,324
Other operating revenues	62,930	53,582	-	116,512
Total operating revenues	<u>1,618,573</u>	<u>53,582</u>	-	<u>1,672,155</u>
<b>Operating expenses:</b>				
Operation and maintenance	857,907	-	-	857,907
Bad debt expense	92,481	-	-	92,481
Administration and general	3,343	10,828	-	14,171
Total operating expenses	<u>953,731</u>	<u>10,828</u>	-	<u>964,559</u>
Depreciation and amortization	294,630	25,752	-	320,382
Operating income	<u>370,212</u>	<u>17,002</u>	-	<u>387,214</u>
<b>Nonoperating revenue (expense):</b>				
Interest expense	-	(556,784)	-	(556,784)
Investment income	1,668	95,875	-	97,543
Net income (loss) before capital contributions	<u>371,880</u>	<u>(443,907)</u>	-	<u>(72,027)</u>
Capital contributions	12,303	-	-	12,303
Increase (decrease) in net assets	<u>384,183</u>	<u>(443,907)</u>	-	<u>(59,724)</u>
Net assets (deficit) – beginning of the period	8,478,153	(3,806,270)	-	4,671,883
Net assets (deficit) – end of the period	<u>\$ 8,862,336</u>	<u>(4,250,177)</u>	-	<u>4,612,159</u>

See accompanying independent auditors' report.

**NEW YORK CITY WATER AND SEWER SYSTEM**  
Financial Statements

**COMBINING STATEMENT OF CASH FLOWS**  
Year ended June 30, 2003

**Schedule V**

(in thousands)	New York City Water Board	New York City Municipal Water Finance Authority	Total
<b>Cash flows from operating activities:</b>			
Receipts from customers	\$ 1,588,898	65,816	1,654,714
Payments for operations & maintenance	(868,811)	-	(868,811)
Payments for administration	(2,018)	(12,598)	(14,616)
Net cash provided by operating activities	<u>718,069</u>	<u>53,218</u>	<u>771,287</u>
<b>Cash flows from capital and related financing activities:</b>			
Proceeds from issuing bonds, notes and other borrowings, net of issuance costs	-	4,679,212	4,679,212
Acquisition and construction of capital assets	-	(1,217,895)	(1,217,895)
Payments by the Board to the Authority (net)	(713,343)	713,343	-
Repayments of bonds, notes and other borrowings	-	(3,343,065)	(3,343,065)
Interest paid on bonds, notes and other borrowings	-	(576,516)	(576,516)
Net cash (used in) provided by capital and related financing activities	<u>(713,343)</u>	<u>255,079</u>	<u>(458,264)</u>
<b>Cash flows from investing activities:</b>			
Proceeds from sales and maturities of investments	61,240	-	61,240
Purchases of investments	(64,422)	(49,877)	(114,299)
Interest on investments	1,605	95,746	97,351
Net cash (used in) provided by investing activities	<u>(1,577)</u>	<u>45,869</u>	<u>44,292</u>
Net increase in cash and cash equivalents	3,149	354,166	357,315
Cash and cash equivalents, beginning of year	71,735	1,110,918	1,182,653
Cash and cash equivalents, end of year	<u>\$ 74,884</u>	<u>1,465,084</u>	<u>1,539,968</u>

Reconciliation of Operating Income to  
Net Cash Provided by Operating Activities:

Operating income	\$ 450,565	8,432	458,997
Adjustments to reconcile operating income to net cash provided by operating activities:			
Depreciation and amortization	319,632	44,705	364,337
Bad debt expense	89,400	-	89,400
Changes in net assets and liabilities:			
Receivables, net	(119,893)	-	(119,893)
Accounts payable	484	81	565
Receivable from the City	(22,216)	-	(22,216)
Refunds payable	6,972	-	6,972
Revenues received in advance	(6,875)	-	(6,875)
Net cash provided by operating activities	<u>\$ 718,069</u>	<u>53,218</u>	<u>771,287</u>

	Assets Unrestricted	Assets Restricted	Total
Cash and cash equivalents – beginning	\$ 5,274	1,177,379	1,182,653
Net increase	3,293	354,022	357,315
Cash and cash equivalents – ending	<u>\$ 8,567</u>	<u>1,531,401</u>	<u>1,539,968</u>

The following are the noncash capital and related financing activities:

- Interest expense includes the amortization of premium and discount in the amount of \$7,372.
- Capital expenditures in the amount of \$231,390 had been incurred but not paid at June 30, 2003.
- The Board received capital assets of \$7,233, which represent capital contributed by the City.

See accompanying independent auditors' report.

**NEW YORK CITY WATER AND SEWER SYSTEM**  
Financial Statements

**COMBINING STATEMENT OF CASH FLOWS**  
Year ended June 30, 2002

**Schedule VI**

(in thousands)	New York City Water Board	New York City Municipal Water Finance Authority	Total
<b>Cash flows from operating activities:</b>			
Receipts from customers	\$ 1,530,499	53,582	1,584,081
Payments for operations & maintenance	(825,859)	-	(825,859)
Payments for administration	(3,286)	(9,740)	(13,026)
Net cash provided by operating activities	<u>701,354</u>	<u>43,842</u>	<u>745,196</u>
<b>Cash flows from capital and related financing activities:</b>			
Proceeds from issuing bonds, notes and other borrowings, net of issuance costs	-	3,423,787	3,423,787
Acquisition and construction of capital assets	-	(938,218)	(938,218)
Payments by the Board to the Authority (net)	(697,159)	697,159	-
Repayments of bonds, notes and other borrowings	-	(1,914,695)	(1,914,695)
Interest paid on bonds, notes and other borrowings	-	(540,753)	(540,753)
Net cash (used in) provided by capital and related financing activities	<u>(697,159)</u>	<u>727,280</u>	<u>30,121</u>
<b>Cash flows from investing activities:</b>			
Proceeds from sales and maturities of investments	-	41,166	41,166
Purchases of investments	(61,243)	(569,350)	(630,593)
Interest on investments	1,319	93,882	95,201
Net cash used in investing activities	<u>(59,924)</u>	<u>(434,302)</u>	<u>(494,226)</u>
Net (decrease) increase in cash and cash equivalents	<u>(55,729)</u>	<u>336,820</u>	<u>281,091</u>
Cash and cash equivalents, beginning of year	127,464	774,098	901,562
Cash and cash equivalents, end of year	<u>\$ 71,735</u>	<u>1,110,918</u>	<u>1,182,653</u>

**Reconciliation of Operating Income to Net Cash Provided by Operating Activities:**

Operating income	\$ 370,212	17,002	387,214
Adjustments to reconcile operating income to net cash provided by operating activities:			
Depreciation and amortization	294,630	25,752	320,382
Bad debt expense	92,481	-	92,481
Changes in net assets and liabilities:			
Receivables, net	(84,946)	-	(84,946)
Accounts payable	56	1,088	1,144
Receivable from the City	32,464	-	32,464
Refunds payable	(3,012)	-	(3,012)
Revenues received in advance	(531)	-	(531)
Net cash provided by operating activities	<u>\$ 701,354</u>	<u>43,842</u>	<u>745,196</u>

	Assets Unrestricted	Assets Restricted	Total
Cash and cash equivalents – beginning	\$ 7,419	894,143	901,562
Net (decrease) increase	<u>(2,145)</u>	<u>283,236</u>	<u>281,091</u>
Cash and cash equivalents – ending	<u>\$ 5,274</u>	<u>1,177,379</u>	<u>1,182,653</u>

The following are the noncash capital and related financing activities:

- Interest expense includes the amortization of premium and discount in the amount of \$14,170.
- Capital expenditures in the amount of \$253,456 had been incurred but not paid at June 30, 2002.
- The Board received capital assets of \$12,303, which represent capital contributed by the City.

See accompanying independent auditors' report.

[THIS PAGE INTENTIONALLY LEFT BLANK.]



**FORM OF OPINION OF BOND COUNSEL**

[THIS PAGE INTENTIONALLY LEFT BLANK.]

**FORM OF OPINION OF BOND COUNSEL  
(Fiscal 2005 Series A Bonds)**

August , 2004

New York City Municipal  
Water Finance Authority

**New York City Municipal Water Finance Authority  
Water and Sewer System Revenue Bonds,  
Fiscal 2005 Series A  
(Final Opinion)**

Ladies and Gentlemen:

We have acted as bond counsel in connection with the issuance by the New York City Municipal Water Finance Authority (the "Authority"), a body corporate and politic constituting a public benefit corporation of the State of New York (the "State"), created and existing under and pursuant to the Constitution and statutes of the State, including the Act (defined below), of \$150,000,000 aggregate principal amount of Water and Sewer System Revenue Bonds, Fiscal 2005 Series A (the "2005 Series A Bonds"), issued under and pursuant to the New York City Municipal Water Finance Authority Act, being Title 2-A of Article 5 of the Public Authorities Law of the State, as amended (which, together with Section 1046 of the Public Authorities Law of the State, is herein referred to as the "Act") and a resolution of the Authority adopted November 14, 1985 entitled "Water and Sewer System General Revenue Bond Resolution," as amended and supplemented to the date hereof (the "Resolution"), including by a resolution adopted July 21, 2004 entitled "Sixty-ninth Supplemental Resolution Authorizing the Issuance of Water and Sewer System Revenue Bonds, Fiscal 2005 Series A" (the "Sixty-ninth Supplemental Resolution") authorizing the 2005 Series A Bonds. The 2005 Series A Bonds are part of an issue of bonds of the Authority (the "Bonds") which the Authority has created under the terms of the Resolution and is authorized to issue from time to time for the purposes authorized by the Act and the Resolution, as then in effect, and without limitation as to amount except as provided in the Resolution or as may be limited by law. The 2005 Series A Bonds are being issued for the purposes of the Resolution. Capitalized terms not otherwise defined herein shall have the meanings ascribed thereto in the Resolution.

Pursuant to the Act, the New York City Water Board (the "Board"), a public benefit corporation of the State, created and existing under the laws of the State, and The City of New York (the "City"), a municipal corporation of the State, have entered into a lease agreement, dated as of July 1, 1985, as amended (the "Lease"), whereby the Board has leased the New York City Water and Sewer System from the City for a term ending on the date on which all bonds, notes or other obligations of the Authority have been paid in full or provision for such payment shall have been made in accordance with the instruments under which they were issued. Pursuant to the Act, the Authority, the Board and the City have entered into a financing agreement, dated July 1, 1985, as amended (the "Financing Agreement"), related to, among other things, the financing Water Projects.

In such connection, we have reviewed the Resolution, the Sixty-ninth Supplemental Resolution, the Lease, the Financing Agreement and the Tax Certificate of the Authority (the "Tax Certificate"), opinion of Corporation Counsel of The City of New York, certificates of the Authority, the Trustee and others, and such other documents, opinions and matters to the extent we deemed necessary to render the opinions set forth herein.

Certain agreements, requirements and procedures contained or referred to in the Resolution, the Sixty-ninth Supplemental Resolution, the Lease, the Financing Agreement, the Tax Certificate and other relevant documents may be changed and certain actions (including, without limitation, defeasance of 2005 Series A Bonds) may be taken or omitted under the circumstances and subject to the terms and conditions

set forth in such documents. No opinion is expressed herein as to any 2005 Series A Bond or the interest thereon if any such change occurs or action is taken or omitted upon the advice or approval of counsel other than ourselves.

The opinions expressed herein are based on an analysis of existing laws, regulations, rulings and court decisions and cover certain matters not directly addressed by such authorities. Such opinions may be affected by actions taken or omitted or events occurring after the date hereof. We have not undertaken to determine, or to inform any person, whether any such actions are taken or omitted or events do occur or any other matters come to our attention after the date hereof, and we disclaim any obligation to update this letter. We have assumed the genuineness of all documents and signatures presented to us (whether as originals or as copies) and the due and legal execution and delivery thereof by, and validity against, any parties other than the Authority. We have assumed, without undertaking to verify, the accuracy of the factual matters represented, warranted or certified in the documents, and of the legal conclusions contained in the opinions, referred to in the third paragraph hereof. Furthermore, we have assumed compliance with all covenants and agreements contained in the Resolution, the Sixty-ninth Supplemental Resolution, the Lease, the Financing Agreement and the Tax Certificate, including (without limitation) covenants and agreements compliance with which is necessary to assure that future actions, omissions or events will not cause interest on the 2005 Series A Bonds to be included in gross income for federal income tax purposes. We call attention to the fact that the rights and obligations under the 2005 Series A Bonds, the Resolution, the Sixty-ninth Supplemental Resolution, the Lease, the Financing Agreement and the Tax Certificate and their enforceability may be subject to bankruptcy, insolvency, reorganization, arrangement, fraudulent conveyance, moratorium and other laws relating to or affecting creditors' rights, to the application of equitable principles and to the exercise of judicial discretion in appropriate cases. We express no opinion with respect to any indemnification, contribution, penalty, choice of law, choice of forum or waiver provisions contained in the foregoing documents, nor do we express any opinion with respect to the state or quality of title to or interest in any of the real or personal property described in or as subject to the lien of the Resolution, the Sixty-ninth Supplemental Resolution, the Lease or the Financing Agreement, or the accuracy or sufficiency of the description contained therein of, or the remedies available to enforce liens on, any such property. Finally, we undertake no responsibility for the accuracy, completeness or fairness of the Official Statement or other offering material relating to the 2005 Series A Bonds and express no opinion with respect thereto herein.

Based on and subject to the foregoing, and in reliance thereon, as of the date hereof we are of the following opinions:

1. The Authority is a body corporate and politic constituting a public benefit corporation of the State, duly created and existing under the laws of the State with the right and lawful authority and power to enter into the Financing Agreement, to adopt the Resolution and the Sixty-ninth Supplemental Resolution and to issue the 2005 Series A Bonds.

2. The Resolution and the Sixty-ninth Supplemental Resolution have been duly and lawfully adopted by the Authority, are in full force and effect and are the legal, valid and binding agreements of the Authority enforceable in accordance with their terms. The Resolution and the Sixty-ninth Supplemental Resolution create the valid, binding and perfected pledges they purport to create of the Revenues and any moneys or securities on deposit in the Funds and Accounts created thereby for the repayment of the Bonds, subject only to the provisions of the Resolution, the Sixth-ninth Supplemental Resolution and the Financing Agreement permitting the application thereof for or to the purposes and on the terms and conditions permitted thereby, including the making of any required payments to the United States with respect to arbitrage earnings.

3. The 2005 Series A Bonds have been duly and validly authorized and issued. The 2005 Series A Bonds are valid and binding special obligations of the Authority payable as provided in the Resolution, are enforceable in accordance with their terms and the terms of the Resolution and are entitled, together with all other Bonds issued under the Resolution to the benefits of the Resolution and the Act.

4. The 2005 Series A Bonds are payable solely from the Revenues and other amounts pledged to such payment under the Resolution. The 2005 Series A Bonds are not a debt of the State, the City or the Board and neither the State, the City, the Board nor any other political subdivision of the State is liable thereon.

5. The Lease and the Financing Agreement have been duly authorized, executed and delivered by the respective parties thereto and constitute valid and binding obligations of such parties, enforceable in accordance with their terms.

6. The Revenues derived from the operation of the System are the property of the Board. The Financing Agreement validly transfers the right, title and interest of the Board in the Revenues to the Authority to the extent and as provided in the Financing Agreement, subject only to the provisions of the Act, the Financing Agreement and the Resolution permitting the application thereof for or to the purposes, and on the terms and conditions, therein set forth.

7. By virtue of the Act, the Authority has a valid, binding and perfected statutory lien upon the Revenues to be paid by the Board to the Authority pursuant to the Financing Agreement and such lien constitutes a first priority security interest therein.

8. Interest on the 2005 Series A Bonds is excluded from gross income for federal income tax purposes under Section 103 of the Internal Revenue Code of 1986. Interest on the 2005 Series A Bonds is not a specific preference item for purposes of the federal individual or corporate alternative minimum taxes, although we observe that it is included in adjusted current earnings when calculating corporate alternative minimum taxable income. Interest on the 2005 Series A Bonds is exempt from personal income taxes imposed by the State of New York and any political subdivision thereof (including The City of New York). We express no opinion regarding other tax consequences related to the ownership or disposition of, or the accrual or receipt of interest on, the 2005 Series A Bonds.

In rendering the opinions set forth in paragraphs 5 and 6 above, we wish to advise you that we have, with your consent, relied upon the opinion of Corporation Counsel of The City of New York dated the date hereof and addressed to you as to the validity, binding effect and enforceability of the Lease and the Financing Agreement with respect to the Board and the City. In rendering the priority of lien opinion set forth in paragraph 7 above, we have (i) relied upon a certification by the Board that it has not made or granted a pledge of or security interest in the Revenues to any person other than the Authority and that it has not taken any action which could result in the imposition by operation of law of any lien, charge or encumbrance upon the Revenues, and (ii) assumed, without making any independent investigation, that (1) no lien, charge or encumbrance upon the Revenues has been imposed or exists by operation of law that is prior to the lien in favor of the Authority and (2) no facts or circumstances have occurred or exist which could result in the imposition by operation of law of any lien, charge or encumbrance upon the Revenues that is prior to the lien in favor of the Authority.

Faithfully yours,

ORRICK, HERRINGTON & SUTCLIFFE LLP

[THIS PAGE INTENTIONALLY LEFT BLANK.]

**BOOK-ENTRY-ONLY FORM**

[THIS PAGE INTENTIONALLY LEFT BLANK.]



## **BOOK-ENTRY-ONLY FORM**

The Depository Trust Company (“DTC”), New York, NY, will act as securities depository for the Fiscal 2005 A Bonds. The Fiscal 2005 A Bonds will be issued as fully-registered securities registered in the name of Cede & Co. (DTC’s partnership nominee). One fully-registered bond certificate will be issued for each maturity of the Fiscal 2005 A Bonds, each in the aggregate principal amount of such maturity, and will be deposited with DTC. If, however, the aggregate principal amount of any maturity exceeds \$500 million, one certificate will be issued with respect to each \$500 million of principal amount and an additional certificate will be issued with respect to any remaining principal amount of such issue.

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, also subsidiaries of DTCC, as well as by the New York Stock Exchange, Inc., the American Stock Exchange, Inc., and the National Association of Securities Dealers, Inc. Access to the DTC system is also available to others such as securities brokers and dealers, banks, and trust companies that clear through or maintain a custodial relationship with a Direct Participant, either directly or indirectly (“Indirect Participants”). DTC has Standard & Poor’s highest rating: AAA. The DTC Rules applicable to its Participants are on file with the Securities and Exchange Commission. More information about DTC can be found at [www.dtcc.com](http://www.dtcc.com).

Purchases of Fiscal 2005 A Bonds under the DTC system must be made by or through Direct Participants, which will receive a credit for the Fiscal 2005 A Bonds on DTC’s records. The ownership interest of each actual purchaser of each Fiscal 2005 A 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 Fiscal 2005 A 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 Fiscal 2005 A Bonds, except in the event that use of the book-entry system for the Fiscal 2005 A Bonds is discontinued.

To facilitate subsequent transfers, all Fiscal 2005 A 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 any series of bonds with DTC and their registration in the name of Cede & Co. or such other DTC nominee do not effect any change in beneficial ownership. DTC has no knowledge of the actual Beneficial Owners of any Fiscal 2005 A 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 Fiscal 2005 A Bonds within a maturity are being redeemed, DTC's practice is to determine by lot the amount of the interest of each Direct Participant in such maturity to be redeemed.

Neither DTC nor Cede & Co. (nor any other DTC nominee) will consent or vote with respect to Fiscal 2005 A Bonds. Under its usual procedures, DTC mails an Omnibus Proxy to the Authority 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 Fiscal 2005 A Bonds are credited on the record date (identified in a listing attached to the Omnibus Proxy).

Principal and interest payments on the Fiscal 2005 A 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 Authority or Trustee on a payment 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 Authority, subject to any statutory or regulatory requirements as may be in effect from time to time. Payment of principal, premium, if any, and interest to Cede & Co. is the responsibility of the Authority 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 securities depository with respect to the Fiscal 2005 A Bonds at any time by giving reasonable notice to the Authority 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 Authority 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.

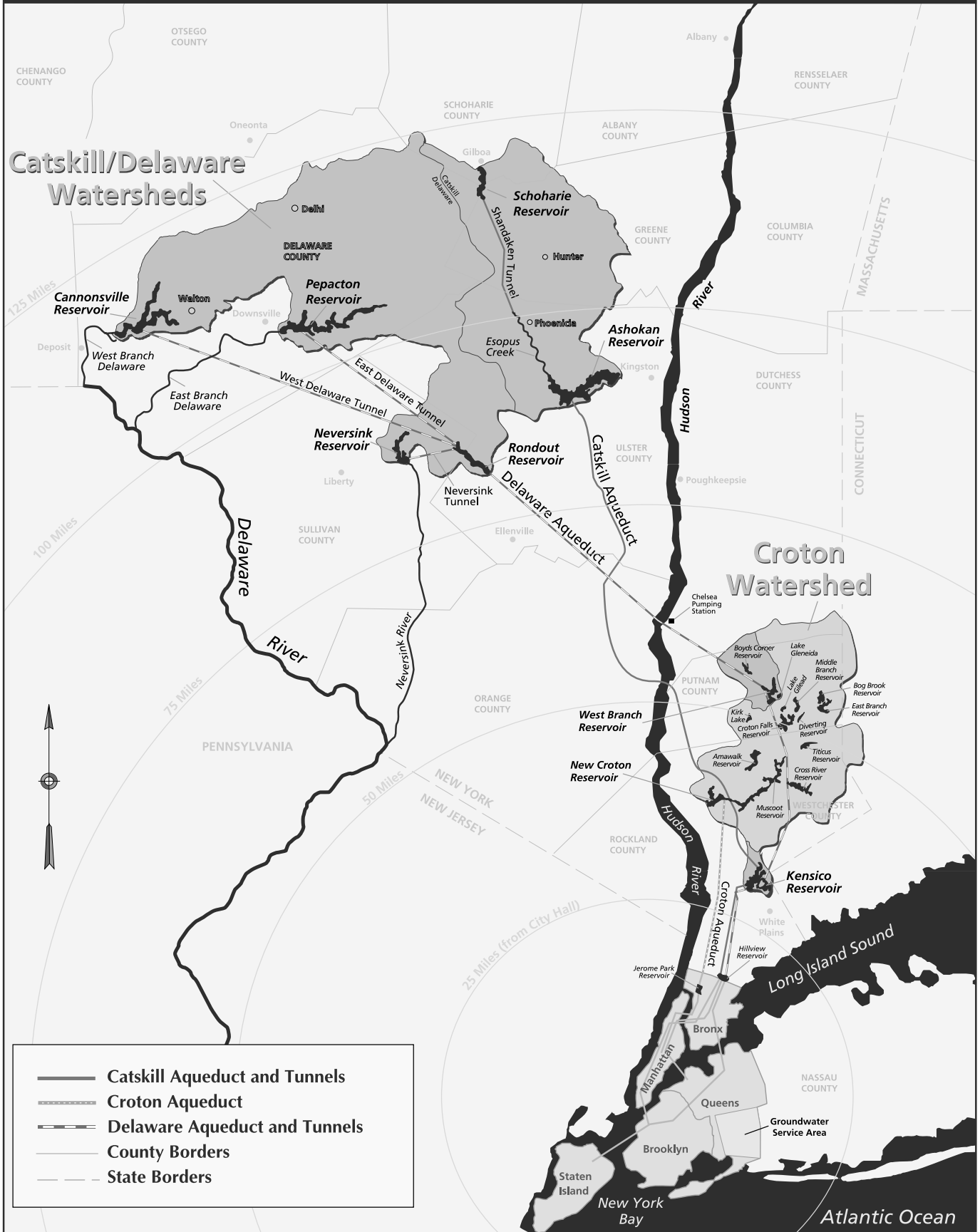
Unless otherwise noted, the information contained in the preceding paragraphs of this subsection "Book-Entry-Only System" has been extracted from information given by DTC. Neither the Authority, the Trustee nor the Underwriters makes any representation as to the completeness or the accuracy of such information or as to the absence of material adverse changes in such information subsequent to the date hereto.

**NEITHER THE AUTHORITY NOR THE TRUSTEE WILL HAVE ANY RESPONSIBILITY OR OBLIGATION TO SUCH DTC PARTICIPANTS, INDIRECT PARTICIPANTS, OR THE PERSONS FOR WHOM THEY ACT AS NOMINEES WITH RESPECT TO THE PAYMENTS TO OR THE PROVIDING OF NOTICE FOR SUCH DTC PARTICIPANTS, INDIRECT PARTICIPANTS, OR THE BENEFICIAL OWNERS.**

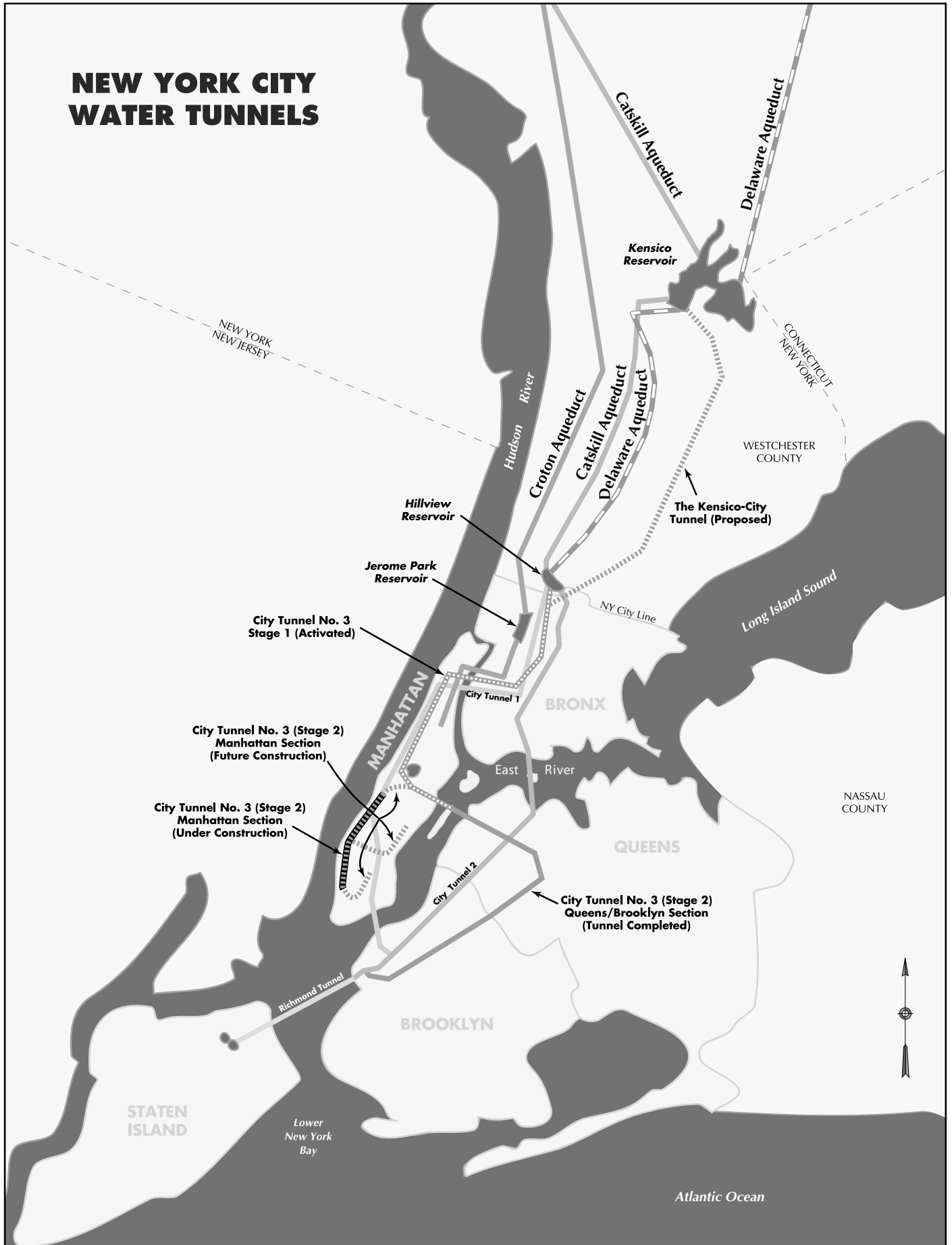
**SYSTEM MAPS**

[THIS PAGE INTENTIONALLY LEFT BLANK.]

# New York City Water Supply System



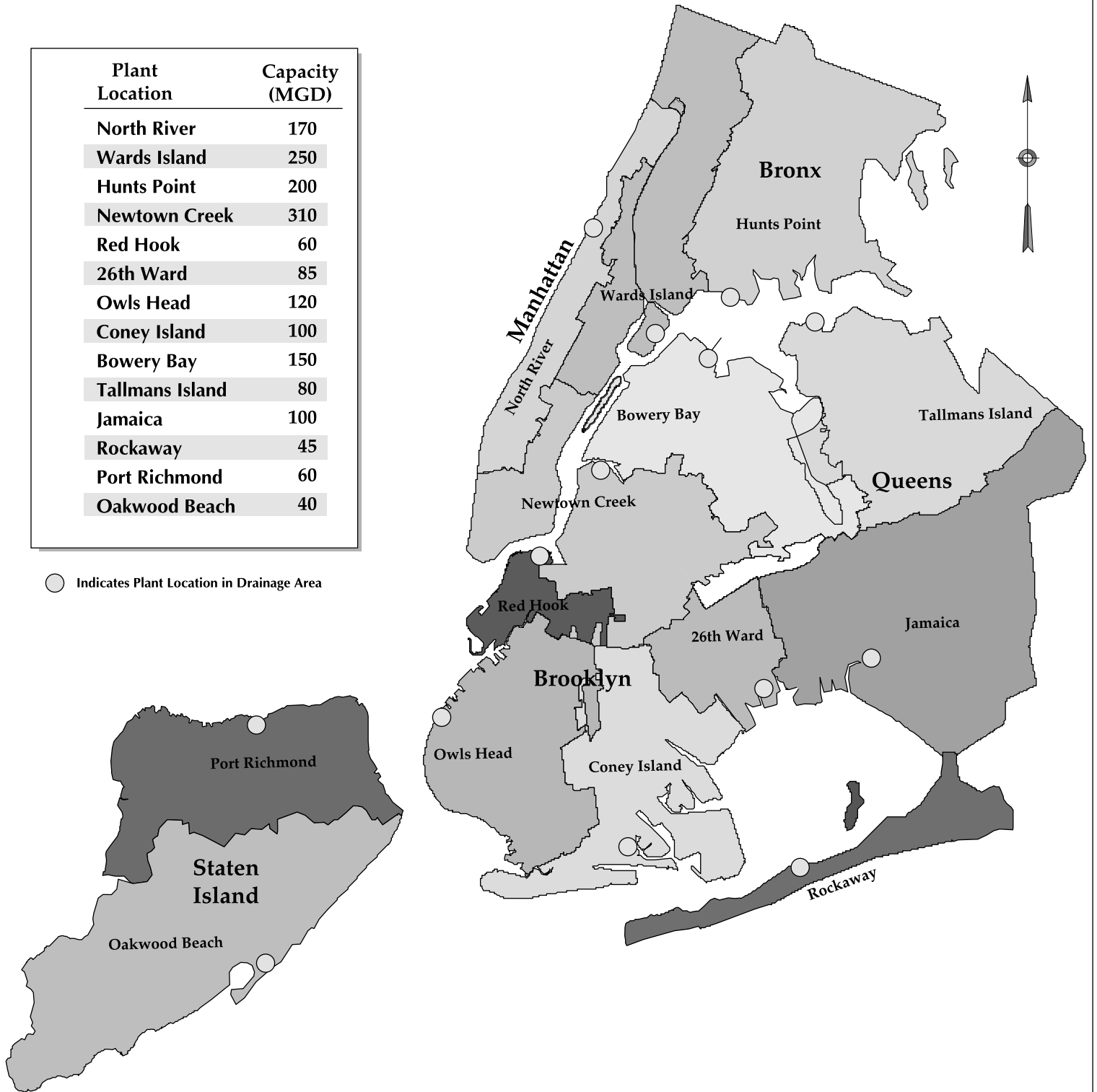
# NEW YORK CITY WATER TUNNELS



# New York City Drainage Areas and Water Pollution Control Plants

Plant Location	Capacity (MGD)
North River	170
Wards Island	250
Hunts Point	200
Newtown Creek	310
Red Hook	60
26th Ward	85
Owls Head	120
Coney Island	100
Bowery Bay	150
Tallmans Island	80
Jamaica	100
Rockaway	45
Port Richmond	60
Oakwood Beach	40

○ Indicates Plant Location in Drainage Area



[THIS PAGE INTENTIONALLY LEFT BLANK.]



[THIS PAGE INTENTIONALLY LEFT BLANK.]

[THIS PAGE INTENTIONALLY LEFT BLANK.]



