

NEW ISSUE

In the opinion of Nixon Peabody LLP, Bond Counsel to the Authority, under existing law, and assuming compliance with the tax covenants described herein, interest on the Fiscal 2003 A and B Bonds is excluded from gross income for federal income tax purposes under Section 103 of the Internal Revenue Code of 1986, as amended (the "Code") and is not treated as a preference item in calculating the alternative minimum tax imposed under the Code with respect to individuals and corporations. Bond Counsel is of the opinion that interest on the Fiscal 2003 A and B Bonds is, however, included in the adjusted current earnings of certain corporations for purposes of computing the alternative minimum tax imposed on such corporations. Bond Counsel is further of the opinion that, under existing law, interest on the Fiscal 2003 A and B Bonds is exempt from personal income taxes of the State of New York and its political subdivisions, including The City of New York, as described more fully herein. See, however, "TAX EXEMPTION" herein regarding certain other tax considerations.

**\$891,090,000**

**New York City  
Municipal Water Finance Authority**

**\$741,090,000 Water and Sewer System Revenue Bonds, Fiscal 2003 Series A**  
**\$150,000,000 Water and Sewer System Revenue Bonds, Fiscal 2003 Series B**

**Dated: Date of Delivery**

**Due: June 15, as shown on the inside front cover**

The Fiscal 2003 A and B 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 2003 A and B Bonds. Purchases of beneficial interests in such Fiscal 2003 A and B Bonds will be made in book-entry-only form. Purchasers will not receive certificates representing the ownership interest in the Fiscal 2003 A and B Bonds purchased by them. See "APPENDIX F—BOOK-ENTRY-ONLY FORM."

Interest on the Fiscal 2003 A and B Bonds will accrue from their date of delivery and will be payable semiannually on each June 15th and December 15th commencing December 15, 2002. The Fiscal 2003 A and B Bonds will be issued in authorized denominations of \$5,000 and integral multiples thereof. The Fiscal 2003 A Bonds are subject to redemption prior to maturity as described herein. The Fiscal 2003 B Bonds are not subject to redemption prior to maturity. The proceeds of the Fiscal 2003 A Bonds are expected to be applied (i) to pay principal and interest on \$100 million aggregate principal amount of the Authority's outstanding Commercial Paper Notes and to reimburse banks for amounts to be drawn under irrevocable letters of credit to pay principal and interest on \$200 million aggregate principal amount of the Authority's outstanding Commercial Paper Notes, (ii) to refund a portion of the Authority's Outstanding Water and Sewer System Revenue Bonds, (iii) to pay certain costs of issuance and (iv) to fund certain reserves. The proceeds of the Fiscal 2003 B Bonds are expected to be applied (i) to pay principal and interest on approximately \$150 million aggregate principal amount of the Authority's outstanding Commercial Paper Notes, (ii) to pay certain costs of issuance and (iii) to fund certain reserves.

**The Fiscal 2003 A and B 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 2003 A and B 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 nor the New York City Water Board is liable on the Fiscal 2003 A and B Bonds.**

The Fiscal 2003 A and B Bonds are offered when, as and if issued by the Authority and received by the Series A Underwriters and the Series B Underwriter, respectively, and subject to the approval of legality by Nixon Peabody LLP, New York, New York, Bond Counsel. Certain legal matters will be passed upon for the Underwriters by Willkie Farr & Gallagher, New York, New York. It is anticipated that the Fiscal 2003 A and B Bonds will be available for delivery to The Depository Trust Company in New York, New York, on or about July 9, 2002.

**UBS PaineWebber Inc.  
First Albany Corporation**

**Merrill Lynch & Co.  
Goldman, Sachs & Co.**

**Bear, Stearns & Co. Inc.  
Morgan Stanley**

**Lehman Brothers  
Salomon Smith Barney**

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

**M.R. Beal & Company  
A.G. Edwards & Sons, Inc.  
Quick & Reilly**

**CIBC World Markets  
First American Municipals, Inc.  
Raymond James & Associates, Inc.**

**RBC Dain Rauscher, Inc.  
Prudential Securities  
Roosevelt & Cross Incorporated**

**\$891,090,000**

**New York City Municipal Water Finance Authority**

**\$741,090,000 Water and Sewer System Revenue Bonds,  
Fiscal 2003 Series A\***

**\$492,415,000 Serial Bonds**

<u>Maturity</u>	<u>Amount</u>	<u>Rate</u>	<u>Price or Yield</u>	<u>Maturity</u>	<u>Amount</u>	<u>Rate</u>	<u>Price or Yield</u>
2003	\$21,910,000	3 %	1.55%	2015	\$ 1,700,000	4.40%	4.47%
2007	3,335,000	4	3.21	2015**	44,910,000	5 <sup>3</sup> / <sub>8</sub>	4.47
2008	4,200,000	4	3.48	2016	2,190,000	4 <sup>1</sup> / <sub>2</sub>	4.55
2009	4,415,000	4	3.67	2016**	45,090,000	5 <sup>3</sup> / <sub>8</sub>	4.55
2010	5,215,000	4	3.89	2017	260,000	4 <sup>5</sup> / <sub>8</sub>	4.64
2011	13,465,000	4	4.05	2017**	46,115,000	5 <sup>3</sup> / <sub>8</sub>	4.64
2011	15,500,000	5 <sup>1</sup> / <sub>4</sub>	4.05	2018	465,000	4.70	4.72
2012	6,465,000	4 <sup>1</sup> / <sub>8</sub>	4.15	2018**	45,095,000	5 <sup>3</sup> / <sub>8</sub>	4.72
2012	4,620,000	5 <sup>1</sup> / <sub>4</sub>	4.15	2019	1,135,000	4 <sup>3</sup> / <sub>4</sub>	4.80
2013	3,410,000	4 <sup>1</sup> / <sub>4</sub>	4.26	2019**	42,320,000	5 <sup>3</sup> / <sub>8</sub>	4.80
2013**	16,585,000	5 <sup>3</sup> / <sub>8</sub>	4.26	2020	17,375,000	5	100
2013***	20,000,000	Muni-CPI	NRO	2028**	30,000,000	6	4.72
2014	2,005,000	4 <sup>3</sup> / <sub>8</sub>	4.39	2028	17,490,000	5	5.28
2014**	47,145,000	5 <sup>3</sup> / <sub>8</sub>	4.39	2029	30,000,000	5	5.29

**\$17,860,000 5<sup>1</sup>/<sub>4</sub>% Term Bonds due June 15, 2034, Yield 5.32%**

**\$230,815,000 5<sup>1</sup>/<sub>8</sub>% Term Bonds due June 15, 2034, Yield 5.32%**

**\$150,000,000 Water and Sewer System Revenue Bonds,  
Fiscal 2003 B Bonds\*\*\*\***

<u>Maturity</u>	<u>Amount</u>	<u>Rate</u>	<u>Price or Yield</u>
2004	\$25,000,000	4 %	2.10%
2004	25,000,000	5	2.10
2005	3,000,000	4	2.62
2005	47,000,000	5	2.62
2006	10,000,000	4	2.92
2006	10,000,000	5	2.92
2006	30,000,000	5 <sup>1</sup> / <sub>4</sub>	2.92

\* The Fiscal 2003 A Bonds have been purchased and, except as noted with respect to the Muni-CPI Bonds, are being reoffered by the underwriters shown on the front cover of this Official Statement (the "Series A Underwriters").

\*\* Priced to the stated yield to the June 15, 2012 optional redemption date at a redemption price of 100%.

\*\*\* Muni-CPI Bonds. The Muni-CPI Bonds are being reoffered exclusively by Morgan Stanley & Co. Incorporated, in accordance with the terms and conditions contained in Appendix H hereto.

\*\*\*\* The Fiscal 2003 B Bonds have been purchased and are being reoffered exclusively by Merrill Lynch, Pierce, Fenner & Smith Incorporated (the "Series B Underwriter").

**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>
James P. Stuckey	<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>
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**

Mark R. Hellerer	<i>Chairman</i>
Susan Millington Campbell	<i>Member</i>
Leroy Carmichael	<i>Member</i>
Amaziah Howell	<i>Member</i>
Agustin Rivera	<i>Member</i>
David B. Rosenauer	<i>Member</i>
James T.B. Tripp	<i>Member</i>

Diana Chapin, Ph.D.	<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>Nixon Peabody 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 2003 A and B 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 2003 A and B 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 2003 A and B 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 SERIES A UNDERWRITERS MAY OVERALLOT OR EFFECT TRANSACTIONS WHICH STABILIZE OR MAINTAIN THE MARKET PRICE OF THE FISCAL 2003 A BONDS AT A LEVEL ABOVE THAT WHICH MIGHT OTHERWISE PREVAIL IN THE OPEN MARKET AND THE SERIES B UNDERWRITER MAY OVERALLOT OR EFFECT TRANSACTIONS WHICH STABILIZE OR MAINTAIN THE MARKET PRICE OF THE FISCAL 2003 B BONDS AT A LEVEL ABOVE THAT WHICH MIGHT OTHERWISE PREVAIL IN THE OPEN MARKET, SUCH STABILIZING, IF COMMENCED, MAY BE DISCONTINUED AT ANY TIME.

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## 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:**

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**Use of Proceeds:**

The proceeds of the Fiscal 2003 A Bonds are expected to be applied (i) to pay principal and interest on \$100,000,000 aggregate principal amount of the Authority's outstanding Commercial Paper Notes and to reimburse banks for amounts to be drawn under irrevocable letters of credit to pay principal and interest on \$200,000,000 aggregate principal amount of the Authority's outstanding Commercial Paper Notes, (ii) to refund a portion of the Authority's Outstanding Water and Sewer System Revenue Bonds, (iii) to pay certain costs of issuance and (iv) to fund certain reserves. The proceeds of the Fiscal 2003 B Bonds are expected to be applied (i) to pay principal and interest on approximately \$150,000,000 aggregate principal amount 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 2003 A Bonds are being issued by the Authority in the principal amount of \$741,090,000, pursuant to its Water and Sewer System General Revenue Bond Resolution adopted on November 14, 1985, as amended, and its Fifty-seventh Supplemental Resolution adopted on June 20, 2002. The Fiscal 2003 B 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 Fifty-eighth Supplemental Resolution adopted on June 20, 2002. The Fiscal 2003 A and B Bonds are issued in book-entry only form and in authorized denominations of \$5,000 and integral multiples thereof.

**Redemption Provisions:**

The Fiscal 2003 A Bonds are subject to optional redemption and mandatory sinking fund redemption as described herein. The Fiscal 2003 B Bonds are not subject to optional or mandatory redemption.

**The System:**

The Water System provides approximately 1,300 million gallons per day (mgd) of water to approximately 828,000 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 collec-

tion 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 as of  
April 2002:

	Fiscal Years					
	Historical			Projected		
	1999 (1)	2000 (2)	2001(2)	2002	2003	2004
	(Millions of Dollars)					
Revenues Available for Debt Service . . . . .	\$1,466.0	\$1,481.5	\$1,527.0	\$1,541.2	\$1,582.8	\$1,741.4
Net Operating Expenses . . . . .	680.0	642.8	715.4	759.8	741.8	745.8
Other Expenses (including Rental Payments to New York City) . . . . .	238.0	193.2	153.5	162.5	136.6	136.5
Total Expenses . . . . .	918.0	836.1	869.0	899.5	831.5	882.2
Total First Resolution Bond Debt Service . . . . .	427.4	442.0	487.2	518.4	588.9	691.3
Net Debt Service on Second Resolution Bonds(3) . . . . .	54.8	77.0	11.6	7.3	71.5	126.6
Net Surplus . . . . .	65.9	126.5	160.0	116.0	90.9	41.2
First Resolution Debt Service Coverage . . . . .	3.43	3.35	3.13	2.97	2.69	2.52
First and Second Resolution Debt Service Coverage(3) . . . . .	3.04	2.85	3.06	2.93	2.40	2.13
Rate Increase . . . . .	4.0%	4.0%	1.0%	3.0%	6.5%	9.7%

Totals may not add due to rounding.

- (1) Derived from supplemental schedules of cash receipts and disbursements contained in the annual financial statements.
- (2) Derived from 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.

**Total Authority Debt Outstanding:** As of the date of this Official Statement, the Authority has approximately \$8.05 billion of Bonds and \$2.66 billion of Second Resolution Bonds 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 2001, included a Capital Improvement Program applicable to the System for the period 2002 through 2011 (the “CIP”). The CIP includes projected expenditures of \$9.16 billion for water and sewer facilities of which approximately 99% 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. The current capital plan forecasted as of April 2002 (the “Current Capital Plan”) supersedes the CIP for Fiscal Years 2002 through 2006 and increases the total anticipated cost of the capital program for Fiscal Years 2002 through 2006 from \$7.7 billion to \$8.9 billion.

**Bond Financing Program:** The following table shows total Authority indebtedness expected to be issued from Fiscal Year 2003 to Fiscal Year 2007.



(Millions of Dollars)					
<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Period Total</u>
\$1,798.7	\$1,689.9	\$1,909.1	\$2,244.1	\$1,681.0	\$9,322.4

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 2003 A and B 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 less than 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:

The financial statements (for the years ended June 30, 2000 and June 30, 2001) 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.

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## OFFICIAL STATEMENT

**\$891,090,000**

**New York City Municipal Water Finance Authority**

**\$741,090,000 Water and Sewer System Revenue Bonds, Fiscal 2003 Series A**

**\$150,000,000 Water and Sewer System Revenue Bonds, Fiscal 2003 Series B**

### 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 \$741,090,000 Water and Sewer System Revenue Bonds, Fiscal 2003 Series A (the “Fiscal 2003 A Bonds”) and \$150,000,000 Water and Sewer System Revenue Bonds, Fiscal 2003 Series B (the “Fiscal 2003 B Bonds” and together with the Fiscal 2003 A Bonds, the “Fiscal 2003 A and B 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”, 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 2003 A Bonds will be issued by the Authority pursuant to the Resolution and its Fifty-seventh Supplemental Resolution adopted on June 20, 2002 (the “Fifty-seventh Supplemental Resolution”). The Fiscal 2003 B Bonds will be issued by the Authority pursuant to the Fifty-eighth Supplemental Resolution adopted on June 20, 2002 (the “Fifty-eighth Supplemental Resolution” and, together with the Fifty-seventh Supplemental Resolution, the “Supplemental Resolutions”). The Resolution and the Supplemental Resolutions 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 April 2002. These projections will be updated in April 2003 in connection with the Board’s deliberations concerning the annual budget and rates and charges for water and sewer service for Fiscal Year 2004. Based on results to date and other factors, actual financial results for Fiscal Year 2002 and subsequent years will differ from these projections.

### **World Trade Center Attack**

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. The attack also resulted in the disruption of public transportation and business and displacement of residents in the immediate vicinity of the World Trade Center. Trading on the major New York stock exchanges was suspended until September 17, 2001, and business in the financial district was interrupted.

Clean up and repair efforts will result in substantial expenditures. The U.S. Congress passed emergency legislation which authorized \$40 billion for disaster assistance, increased security costs, rebuilding infrastructure systems and other public facilities, and disaster recovery and related activities. Congress and the President have already appropriated over \$10 billion of this amount for disaster assistance in New York, Pennsylvania and Virginia. The President has submitted a bill to Congress that would bring the total commitment of federal disaster assistance for New York to \$21.4 billion.

On March 9, 2002 the President signed nation-wide economic stimulus legislation which includes \$5.5 billion toward the \$21.4 billion commitment, in the form of temporary tax provisions aimed at creating redevelopment incentives for businesses located in the Liberty Zone, the area surrounding the World Trade Center site. The Liberty Zone provisions expand the work opportunity tax credit, provide

a bonus 30% depreciation deduction, authorize the issuance of \$8 billion in tax-exempt private activity bonds, allow for advance refunding of certain bonds for facilities in the City and increase the small business expensing limit.

The City is seeking to be reimbursed by the federal government for all of its direct costs for response and remediation of the World Trade Center site. These costs are now expected to be substantially below previous estimates. The City also expects to receive federal funds for costs of economic revitalization and other needs, not directly payable through the City budget, relating to the September 11 attack.

The disaster resulted in several water main breaks. Although water and sewer service was continuously provided to most of lower Manhattan and was restored to all buildings near the disaster as they otherwise were able to be re-occupied, water and sewer billings and collections from both commercial properties and residential buildings in lower Manhattan declined after the September 11 attack. DEP estimates that full repair of the System will cost approximately \$5.3 million and expects a significant portion of the costs will be paid for directly or reimbursed by the federal government.

The revenues of the System from user payments will be impacted by the loss of payments from the World Trade Center complex. Such payments were approximately \$1.2 million annually. In addition, other buildings in the downtown area have been temporarily vacant for a period of time. While many have been reoccupied as of this date, there are a limited number that will require more time before residents and workers are allowed to return. In addition, certain businesses which have temporarily relocated to facilities outside of the City may not elect to return to their former locations. The impact on water consumption is mitigated to some extent by the relocation of a portion of the residents and workforce to other facilities within the City. DEP is monitoring the impact on water use and the resulting impact on System revenues. At the present time, the estimated reduction in System revenues from the above conditions is expected to be less than 1% of annual System revenues.

In recent years, DEP has taken a number of steps to enhance and augment its security arrangements to protect the Water System, including water supply structures and facilities. These steps include, among others, increasing the size of the DEP police force by approximately 70 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, fencing 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 Water 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 are resulting in additional labor costs and related expenses both in the Water System and the Wastewater System. The operation and maintenance costs of the System are expected to increase as a result. While an updated forecast of operation and maintenance expenses is not yet complete, the expected increase should be less than 2% of annual System expenses.

## PLAN OF FINANCING

A portion of the proceeds of the Fiscal 2003 A Bonds will be applied to reimburse Commerzbank AG, The Toronto Dominion Bank and The Bank of Nova Scotia (collectively the "Letter of Credit Banks") for moneys to be drawn under irrevocable letters of credit issued by the Letter of Credit Banks to provide for payment of the principal of, and interest on, approximately \$200 million aggregate principal amount of the Authority's Commercial Paper Notes, Series One maturing on or before September 26, 2002 (the "Escrow Defeased Commercial Paper Notes"). Pursuant to an Escrow Deposit Agreement between the Authority and The Bank of New York (the "Escrow Agent"), moneys advanced by the Letter of Credit Banks will be irrevocably deposited in trust with the Escrow Agent in amounts sufficient to make or provide for full and timely payment of the principal of and interest on the outstanding Escrow Defeased Commercial Paper Notes at maturity. Upon such irrevocable deposit, the Escrow Defeased Commercial Paper Notes will no longer be deemed to be outstanding and all liens and pledges established for their benefit will be discharged. A portion of the Fiscal 2003 A Bonds will be used for payment of the principal of, and interest on, approximately \$100 million aggregate principal amount of the Authority's Commercial Paper Notes, Series Five (Lot A), maturing on or before September 26, 2002.

A portion of the proceeds of the Fiscal 2003 B Bonds will be used for payment of the principal of, and interest on (i) approximately \$100 million aggregate principal amount of the Authority's Commercial Paper Notes, Series Five (Lot B) maturing on or before September 9, 2002 and (ii) approximately \$50 million aggregate principal amount of the Authority's Commercial Paper Notes, Series Six, maturing on or before September 9, 2002.

Simultaneously with the delivery of the Fiscal 2003 A and B Bonds, the Authority expects to deliver \$300,300,000 of its Water and Sewer System Revenue Bonds, Fiscal 2003 Series C (the "Fiscal 2003 C Bonds"). The Fiscal 2003 C Bonds are being issued as adjustable rate demand bonds pursuant to the Resolution.

A portion of the proceeds of the Fiscal 2003 A Bonds, together with a portion of the proceeds of the Fiscal 2003 C Bonds, is expected to be applied to the refunding of the Authority's Water and Sewer System Revenue Bonds, Fiscal 1993 Series A (the "Fiscal 1993 A Bonds") in the respective principal amounts set forth in Appendix G hereto (the "Refunded Bonds"). Pursuant to an Escrow Agreement between the Authority and The Bank of New York (the "Escrow Trustee"), the Authority will irrevocably deposit cash and Defeasance Obligations in the trust with the Escrow Trustee. The Defeasance Obligations will bear interest at such rates and will mature at such times and in such amounts so that, together with any uninvested cash held by the Escrow Trustee, sufficient moneys will be available to make full and timely payment of the maturing principal and Sinking Fund Installments of and redemption premium and interest on, the Refunded Bonds to their respective redemption dates. Upon such irrevocable deposit, the Refunded Bonds will no longer be deemed to be outstanding and will no longer be entitled to the benefit of the pledge and lien established by the Resolution, or to payment from Revenues of the System. The Authority will direct the Trustee to redeem the Refunded Bonds on the dates and at the redemption prices set forth in Appendix G hereto.

## USE OF PROCEEDS

It is anticipated that the proceeds of the Fiscal 2003 A and B Bonds will be applied in the following manner:

Principal and Interest on Commercial Paper .....	\$250,402,701
To Reimburse the Letter of Credit Banks .....	200,807,535
Construction Fund .....	3,470,188
Deposit to the Escrow Fund for the Refunded Bonds .....	433,063,309
Deposit To Debt Service Reserve Fund.....	22,033,040
Underwriters' Discount .....	4,659,831
Costs of Issuance .....	<u>522,164</u>
Total Uses of Proceeds of the Fiscal 2003 A and B Bonds ....	<u>\$914,958,768</u>



## THE FISCAL 2003 A AND B BONDS

### General

The Fiscal 2003 A and B Bonds initially delivered to the Underwriters will be dated their date of delivery. The Fiscal 2003 A and B Bonds will mature on and will bear interest payable on the dates shown on the cover and at the rates shown on the inside cover of this Official Statement or, in the case of the Muni-CPI Bonds, at the rates determined as described in Appendix H hereto.

Principal of, redemption premium, if any, and interest on the Fiscal 2003 A and B Bonds will be payable in lawful money of the United States of America. The Fiscal 2003 A and B Bonds will be issued only as fully registered bonds without coupons in denominations of \$5,000 and integral multiples thereof.

Additional terms of the Muni-CPI Bonds are described in Appendix H hereto.

### Book-Entry Only

The Fiscal 2003 A and B 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 2003 A and B Bonds. Purchases of beneficial interests in such Fiscal 2003 A Bonds will be made in book-entry-only form. Purchasers will not receive certificates representing the ownership interest in the Fiscal 2003 A and B Bonds purchased by them. See “APPENDIX F—BOOK-ENTRY-ONLY FORM.”

### Redemption of Fiscal 2003 A Bonds

#### *Sinking Fund Redemption*

The Fiscal 2003 A Bonds due June 15, 2034 (5¼% coupon) are subject to mandatory redemption prior to maturity in part, by lot, in such manner as the Trustee may reasonably determine, at a redemption price of 100% of the principal amount thereof, plus accrued interest to the redemption date, on June 15 in each of the years and in the respective principal amounts as follows:

<b>Fiscal 2003 A Bonds Maturing June 15, 2034</b>	
<u>Year</u>	<u>Amount</u>
2028.....	\$2,960,000
2029.....	2,960,000
2030.....	2,960,000
2031.....	2,960,000
2033.....	2,960,000
2034†.....	3,060,000

† Final Maturity

The Fiscal 2003 A Bonds due June 15, 2034 (5⅛% coupon) are subject to mandatory redemption prior to maturity in part, by lot, in such manner as the Trustee may reasonably determine, at a redemption price of 100% of the principal amount thereof, plus accrued interest to the redemption date, on June 15 in each of the years and in the respective principal amounts as follows:

<b>Fiscal 2003 A Bonds Maturing June 15, 2034</b>	
<u>Year</u>	<u>Amount</u>
2030.....	\$51,975,000
2031.....	54,790,000
2032.....	5,000,000
2033.....	58,010,000
2034†.....	61,040,000

† Final Maturity

### *Purchased Bonds*

The Authority may from time to time direct the Trustee to purchase Fiscal 2003 A Bonds with moneys in the Debt Service Fund, at a price not greater than par, plus accrued interest to the date of such purchase, and apply such Fiscal 2003 A Bonds so purchased as a credit, at 100% of the principal amount thereof, against and in fulfillment of the immediately succeeding Sinking Fund Installment on the Fiscal 2003 A Bond of the same maturity. The Authority may also purchase or redeem fiscal 2003 A Bonds prior to maturity with other moneys available to do so. If it does so, the amount of such purchase or redemption for a Series of Bonds will be credited against future Sinking Fund Installments in any order as the Authority may direct. To the extent that the Authority's obligation to make Sinking Fund Installments in a particular year and for a particular Series of Bonds is fulfilled through such purchases, the likelihood of redemption through mandatory Sinking Fund Installments of any Fiscal 2003 A Bonds of the maturity so purchased will be reduced for such year.

### *Optional Redemption*

The Fiscal 2003 A Bonds other than the Muni-CPI Bonds maturing June 15, 2013 are subject to redemption prior to maturity at the option of the Authority from any moneys available therefor on and after June 15, 2012 in whole at any time or in part on any interest payment date, by lot at the redemption price of par plus accrued interest to the redemption date. The Muni-CPI Bonds are not subject to mandatory or optional redemption prior to their stated maturity.

*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 2003 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 2003 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 2003 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 2003 A Bonds to be redeemed will cease to accrue from and after the redemption date and such Fiscal 2003 A Bonds will no longer be considered to be Outstanding under the Resolution.

The notice of redemption may provide that the Fiscal 2003 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.

### **Fiscal 2003 B Bonds**

The Fiscal 2003 B Bonds are not subject to mandatory or optional redemption prior to their stated maturities.

## 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.”

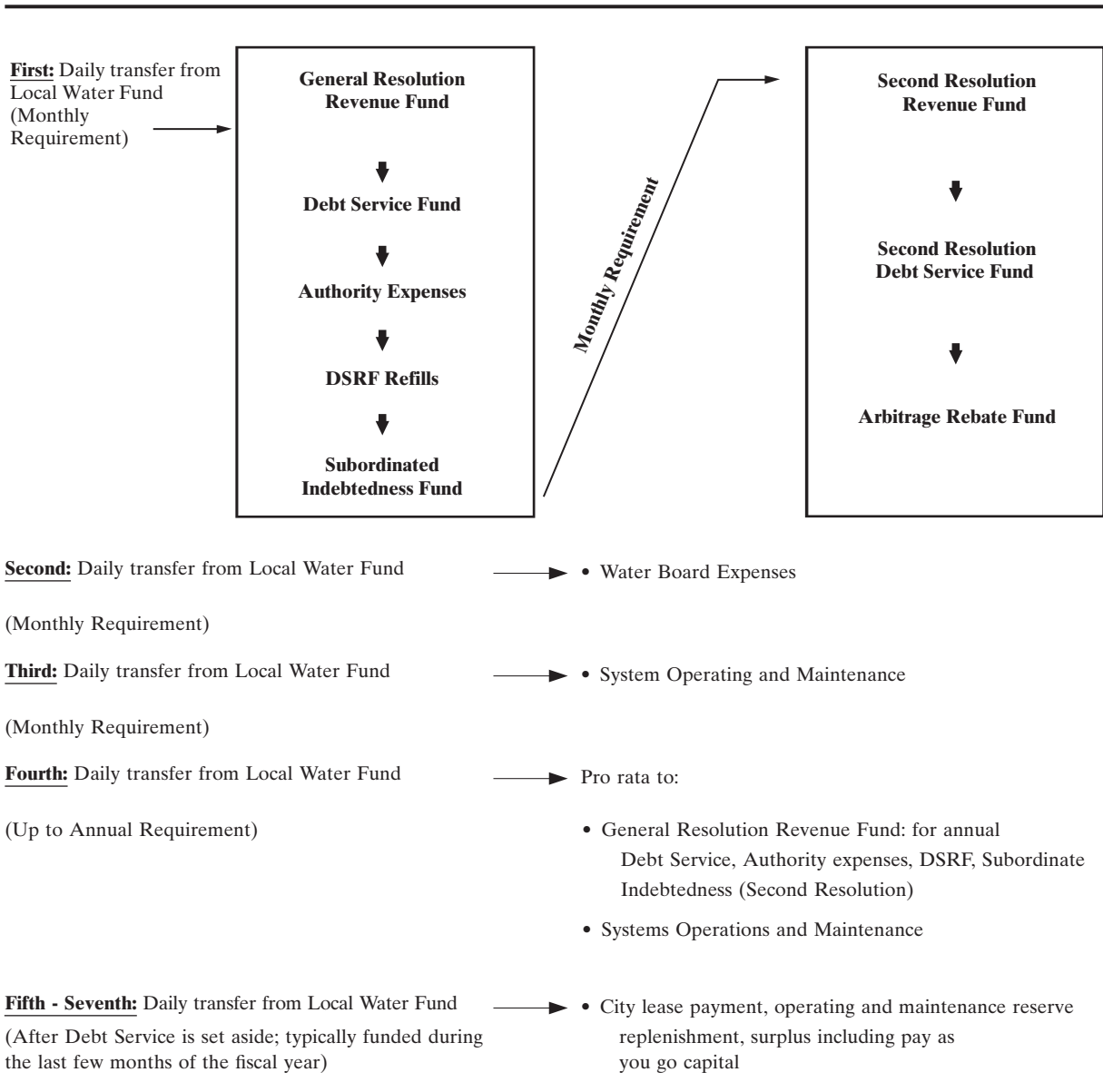
In each month, after making required payments to the Revenue Fund the Board is required, after paying monthly Board Expenses, to pay the City  $\frac{1}{2}$  of the Operating Expenses for the current Fiscal Year from the balance remaining in the Local Water Fund. After making such payments, any amounts 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 2003 A and B 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 General 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



## **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. See “—Refundable Principal Installments.” 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. See “APPENDIX C—GLOSSARY AND SUMMARY OF CERTAIN DOCUMENTS—Summary of the Resolution—Debt Service Reserve Fund.”

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 February 1, 2002 the market value of the securities and cash in the Debt Service Reserve Fund was in excess of the Debt Service Reserve Fund Requirement. The Debt Service Reserve Fund Requirement was approximately \$593 million as of such date. Upon the delivery of the Fiscal 2003 A and B 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 \$8.05 billion aggregate principal amount of Outstanding Bonds (Capital Appreciation Bonds are included at their accreted value as of June 20, 2002). In addition, at the date of this Official Statement, the Authority has approximately \$2.66 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”).

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 and are payable from moneys derived from irrevocable, direct pay letters of credit. 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 reimburse the banks for moneys advanced by them pursuant to the letters of credit securing the Commercial Paper Notes, and to pay interest on the 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.

### **Refundable Principal Installments**

As permitted by the Resolution, the Authority has designated each maturity of the Fiscal 2003 B Bonds as a "Refundable Principal Installment." A "Refundable Principal Installment" is an installment of principal which the Authority intends to pay with moneys that are not Revenues. In calculating Adjusted Debt Service for purposes of the Resolution's additional bonds test and Debt Service Reserve Fund Requirement, interest at the stated rate on the Refundable Principal Installment is included in the calculation of Adjusted Debt Service in each Fiscal Year prior to the Fiscal Year in which the Refundable Principal Installment is stated to be due. However, the Resolution permits the Authority to not include the stated principal amount of a Refundable Principal Installment in the calculation of Adjusted Debt Service. Instead, the Resolution permits the Authority to calculate Adjusted Debt Service for each Fiscal Year beginning in the Fiscal Year in which the Refundable Principal Installment is stated to be due as if it were payable over a period extending from the due date of such Refundable Principal Installment through the last date on which it could have been authorized to be paid under the Act, which in the case of the Fiscal 2003 B Bonds is June 15, 2042. The assumed amortization is calculated based upon equal annual payments of principal and interest over such period, with interest at the actual interest cost of the Series of Bonds that include the Refundable Principal Installment, which in the case of the Fiscal 2003 B Bonds is 2.77% per annum. The Adjusted Debt Service will continue to be calculated in this manner through the Fiscal Year in which each Refundable Principal Installment is stated to be due, unless the Authority has not made provision for its payment from sources other than Revenues by the time it adopts its budget for the Fiscal Year in which a Refundable Principal Installment is stated to be due. If provision has not been made by that time, Adjusted Debt Service for the Fiscal Year in which the Refundable Principal Installment comes due will include the full amount of the Refundable Principal Installment.

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."

### **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 their 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 Bonds.

### **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.

## **AMENDMENTS TO THE RESOLUTION**

Additionally, the Sixtieth Supplemental Resolution amends the Resolution relating to priority of the pledges made under the Resolution to provide that: (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 by the Resolution and each pledge made to secure obligations of the Authority which are prior to or of equal rank with such pledge are and shall be prior to any judicial lien subsequently imposed on the property pledged by the Resolution to enforce any judgment 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 that the Authority has not previously 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 by the Resolution that is prior to or of equal rank with the pledge made by the Resolution and neither the Revenues nor any other property pledged by the Resolution have been described in any financing statement. Except as expressly permitted by the Resolution, the Authority shall not subsequently make any pledge or assignment of, lien on or security interest in the Revenues or other property pledged by the Resolution that is prior to or of equal rank with the pledge made by the Resolution, 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.



## 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 adequately to operate and maintain the System, regardless of reimbursement by the Board of the costs incurred by the City for operation and maintenance.

Pursuant to the Act, there is a statutory first lien upon 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).....	United Parcel Service, Retired
James P. Stuckey(2).....	Senior Vice President and Director of Commercial Development, Forest City Ratner Companies

(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 Anders, Executive Director

Mr. Anders was appointed Executive Director in June 2002 after serving as Treasurer since 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 since 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 of 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.

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. The Act also 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>
Mark R. Hellerer, Chairman . . . .	Partner, Pillsbury Winthrop LLP
Susan Millington Campbell . . . . .	Partner, Hughes Hubbard & Reed LLP
Leroy Carmichael . . . . .	Executive Director, Bronx Psychiatric Center
Amaziah Howell . . . . .	President, Howell Petroleum Products, Inc.
Agustin Rivera . . . . .	Special Advisor, New York City Technical College
David B. Rosenauer . . . . .	Partner, Gibson Dunn & Crutcher
James T.B. Tripp . . . . .	General Counsel, Environmental Defense Fund

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

Diana Chapin, Ph.D., Executive Director

Ms. Chapin was appointed Executive Director of the Board in October 1996 and First Deputy Commissioner of DEP in August 1996. She began her career in City government in 1978, most recently as Deputy Commissioner for Policy and Administration at the Department of Buildings, where she chaired the Plumbing Board and coordinated the One Stop Permitting Program. Prior to that, she was the Deputy Commissioner in charge of Planning, Revenue and Capital Projects at the Department of Parks and Recreation. Ms. Chapin is a graduate of the University of Michigan, and received a Ph.D. from Cornell University where she was both a Woodrow Wilson Fellow and a Dissertation Fellow.

William Kusterbeck, Treasurer

Mr. Kusterbeck was appointed Acting Treasurer in June 1985 and Treasurer in November 1985. 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.

Diana Chapin, Ph.D., First Deputy Commissioner

Ms. Chapin was appointed First Deputy Commissioner of DEP in August 1996 and Executive Director of the Board in October 1996. She began her career in City government in 1978, most recently as Deputy Commissioner for Policy and Administration at the Department of Buildings, where she chaired the Plumbing Board and coordinated the One Stop Permitting Program. Prior to that, she was the Deputy Commissioner in charge of Planning, Revenue and Capital Projects at the Department of Parks and Recreation. Ms. Chapin is a graduate of the University of Michigan, and received a Ph.D. from Cornell University where she was both a Woodrow Wilson Fellow and a Dissertation Fellow.

Betsy Collins, Deputy Commissioner

Betsy Collins was appointed Deputy Commissioner for Customer Services in February 2001. Prior to joining DEP she served as a policy advisor to the Deputy Mayor for Operations. Ms. Collins entered City government in 1989 and has worked at the City’s Office of Management and Budget, the City Council Office of Oversight and Investigation and the Department of Parks and Recreation. She is a graduate of Barnard College and received a Master’s Degree in Public Administration from Baruch College of the City University of New York.

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 the Department of Environmental Protection 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.

Robert Gaffoglio, P.E., Deputy Commissioner

Mr. Gaffoglio was appointed Director of the Bureau of Environmental Engineering in 1996. He has been with the Department of Environmental Protection since 1970, and has served as the Chief of the Division of Combined Sewer Overflow Abatement, Deputy Director for Sewer Design, and most recently as First Deputy Director of Environmental Engineering. Mr. Gaffoglio received a B.S. degree, an M.S. in Transportation Planning, and an M.S. in Management from the Polytechnic Institute of New York. He is a Professional Engineer.

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.

## **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"). The current agreement with DC 37 covers the period from April 1, 2000 through June 30, 2002 and provided for a 4% wage increase effective April 1, 2000 and an additional 4% increase on April 1, 2001.

## CAPITAL IMPROVEMENT AND FINANCING PROGRAM

### Capital Improvement Program

In April 2001, the City published its Ten Year Capital Strategy (Fiscal Years 2002-2011) (the “Ten Year Capital Strategy”), which provides for the rebuilding of the City’s infrastructure and which includes a Capital Improvement Program for the System for the Fiscal Year 2002 through 2011 (the “CIP”). The CIP included projected expenditures of \$9.16 billion for water and sewer facilities.

The CIP presented in the following table entitled “CAPITAL IMPROVEMENT PROGRAM AS MODIFIED BY THE CURRENT CAPITAL PLAN” 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 these 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 CIP presents the maximum authorized levels of work. The actual work done in any given year will differ from that outlined in the CIP. Projections contained in the CIP concerning routine replacement and extension work on the System and its components are likely to vary from actual performance. Generally, work occurs more slowly in aggregate than originally projected. Timing of this work is not critical to the welfare of the System. Work projected in the CIP substantially exceeds those levels required in order to maintain the currently top-rated condition of the System.

The current capital plan published in April 2002 (the “Current Capital Plan”) supersedes the CIP for Fiscal Years 2002 through 2006 and increases the total anticipated cost of the capital program for Fiscal Years 2002 through 2006 from \$7.7 billion to \$8.9 billion.

The CIP as modified by the Current Capital Plan was evaluated independently by Metcalf & Eddy. Metcalf & Eddy concluded that the CIP, as so modified, 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 2011 as reflected in the CIP, as modified by the Current Capital Plan, appears to be reasonable compared to other large water and wastewater utilities.

**CAPITAL IMPROVEMENT PROGRAM AS MODIFIED BY THE CURRENT CAPITAL PLAN  
(Thousands of Dollars)**

<b>CITY FUNDS</b>	<b>FY 2002</b>	<b>FY 2003</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>Total</b>
<b>WATER SUPPLY AND TRANSMISSION</b>											
City Tunnel No. 3, Stage 1	\$ 22,235	\$ 77,750	\$ —	\$ 90,700	\$ 140,000	\$ —	\$ —	\$ —	\$ —	\$ —	\$ 330,685
City Tunnel No. 3, Stage 2	155,879	18,500	21,000	391,000	—	—	—	—	—	—	586,379
Miscellaneous Programs	—	10,000	—	—	—	—	—	—	—	—	10,000
Subtotal	178,114	106,250	21,000	481,700	140,000	—	—	—	—	—	927,064
<b>WATER DISTRIBUTION</b>											
Augmentation of Water Supply Systems	1,261	—	—	—	—	—	—	—	—	—	1,261
Brooklyn-Queens Aquifer	1,352	—	—	—	—	—	—	—	—	—	1,352
Croton Filtration Project	72,321	—	36,200	222,000	90,000	—	—	—	—	—	420,521
Corrosion Protection System	—	—	—	—	2,300	—	—	—	—	—	2,300
Dam Safety Program	1,210	47,685	26,600	59,000	—	—	11,000	—	11,000	—	156,495
Mapping and Telemetry	500	—	—	—	2,800	—	—	—	—	—	3,300
Extensions	180	—	—	—	—	—	—	—	—	—	180
Trunk Distribution and Main Extension	32,723	23,245	75,883	62,213	24,989	3,500	14,100	—	—	—	236,653
Trunk Distribution and Main Replacement	139,049	82,426	74,883	63,203	54,284	65,500	60,000	60,000	60,000	60,000	719,345
Water Quality Preservation	340,377	209,736	152,456	60,545	233,107	10,000	5,000	—	5,000	—	1,016,221
Subtotal	588,973	363,092	366,022	466,961	407,480	79,000	90,100	60,000	76,000	60,000	2,557,628
<b>WATER POLLUTION CONTROL</b>											
Biological Nutrient Removal	21,070	28,178	—	—	—	25,000	—	—	—	—	74,248
Consent Decree Upgrading & Construction	161,970	130,362	588,500	311,000	64,557	—	—	—	—	—	1,256,389
Plant Upgrading & Reconstruction	56,819	70,147	61,540	127,771	80,260	30,130	30,130	30,130	—	—	486,927
Sludge Disposal	8,799	—	26,500	—	—	—	—	—	—	—	35,299
Plant Component Stabilization	400,521	582,553	848,808	—	165,000	150,000	165,000	—	—	—	2,311,882
Water Quality Mandates	296,435	132,685	86,846	193,707	43,937	80,000	(25,000)	(25,000)	(25,000)	(25,000)	733,610
Subtotal	945,614	943,925	1,612,194	632,478	353,754	285,130	170,130	5,130	(25,000)	(25,000)	4,898,355
<b>SEWERS</b>											
Replacement or Augmentation of Existing Systems	18,021	2,873	3,476	3,600	7,000	—	—	—	—	—	34,970
Extensions to Accommodate New Development	95,093	123,871	85,011	60,505	31,348	37,800	37,800	37,800	42,800	42,800	594,828
Programmatic Response to Regulatory Mandates	—	—	9,000	—	—	—	—	—	—	—	9,000
Programmatic Replacement and Reconstruction	517	—	3,600	5,200	3,200	3,200	3,200	3,200	3,200	3,200	28,517
Replacement of Chronically Failing Components	168,892	87,146	52,199	37,203	38,278	45,000	45,000	45,000	45,000	45,000	608,718
Subtotal	282,523	213,890	153,286	106,508	79,826	86,000	86,000	86,000	91,000	91,000	1,276,033
<b>EQUIPMENT</b>											
Conservation	35,632	38,000	22,223	4,223	4,223	4,223	4,223	4,223	4,223	4,223	125,416
Management Information Systems	12,351	7,782	1,500	1,500	—	—	—	—	—	—	23,133
Facility Purchases & Reconstruction	25,828	19,810	—	30,000	—	30,000	—	—	—	—	105,638
Utility Relocation for Sewer and Water Main Projects	35,621	15,178	10,000	10,000	10,000	10,000	10,000	10,000	10,250	10,506	131,555
Vehicles and Equipment	19,536	3,035	1,000	1,000	—	—	—	—	—	—	24,571
Subtotal	128,968	83,805	34,723	46,723	14,223	44,223	14,223	14,223	14,473	14,729	410,313
<b>TOTAL SYSTEM FUNDS</b>	<b>2,124,192</b>	<b>1,710,962</b>	<b>2,187,225</b>	<b>1,734,370</b>	<b>995,283</b>	<b>494,353</b>	<b>360,453</b>	<b>165,353</b>	<b>156,473</b>	<b>140,729</b>	<b>10,069,393</b>
<b>STATE, FEDERAL, AND PRIVATE FUNDS</b>											
Trunk Distribution and Main Replacement	29	—	—	—	—	—	—	—	—	—	29
Water Quality Preservation	3,709	—	—	—	—	—	—	—	—	—	3,709
Consent Decree Upgrading & Construction	(37)	5,431	—	—	—	—	—	—	—	—	5,394
Water Quality Mandates	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	250,000
Replacement or Augmentation of Existing Systems	9	—	—	—	—	—	—	—	—	—	9
Extensions to Accommodate New Development	60	—	—	—	—	—	—	—	—	—	60
Replacement of Chronically Failing Components	753	6	—	—	—	—	—	—	—	—	759
Subtotal	29,523	30,437	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	259,960
<b>TOTAL FUNDS — ALL SOURCES</b>	<b>\$2,153,715</b>	<b>\$1,741,399</b>	<b>\$2,212,225</b>	<b>\$1,759,370</b>	<b>\$1,020,283</b>	<b>\$519,353</b>	<b>\$385,453</b>	<b>\$190,353</b>	<b>\$181,473</b>	<b>\$165,729</b>	<b>\$10,329,353</b>



**Comparison of the CIP and the Current Capital Plan**

The difference between the Current Capital Plan and the CIP reflects increases of \$4.5 million in State, federal and private funds and \$1.16 billion in System funds, including the proceeds of Authority bonds. The following table presents a comparison of the CIP and Current Capital Plan.

**COMPARISON OF 2002-2006 PROJECTIONS  
(Thousands of Dollars)**

	<u>CIP</u> <u>2002-2006</u>	<u>Current</u> <u>Capital Plan</u> <u>2002-2006</u>	<u>Increase</u> <u>(Decrease)</u>
<b>SYSTEM FUNDS</b>			
Water Supply and Transmission.....	\$ 861,571	\$ 927,064	\$ 65,493
Water Distribution.....	1,854,740	2,192,528	337,788
Water Pollution Control.....	3,859,254	4,487,965	628,711
Sewers.....	731,832	836,033	104,201
Equipment.....	<u>283,588</u>	<u>308,442</u>	<u>24,854</u>
Total.....	<u>\$7,590,985</u>	<u>\$8,752,032</u>	<u>\$1,161,047</u>
<b>STATE, FEDERAL AND PRIVATE FUNDS</b> .....	130,431	134,960	4,529
Total Funds—All Sources.....	\$7,721,416	\$8,886,992	\$1,165,576

The CIP represents contractual commitments or the maximum authorized levels of work. The value of the actual work done in any given year will differ from that outlined in the CIP. Likewise, actual forecasts of the capital program contained in the Current Capital Plan, since they are revised more frequently than the ten-year plan embodied in the CIP, have differed and will differ from those of the CIP. Projections contained in the CIP concerning routine replacement and extension work on the System and its components are likely to vary from actual performance. Generally, some work occurs more slowly than originally projected. Timing of this work is not critical to the welfare of the System. The capital program projected in the CIP substantially exceeds levels required in order to maintain the current condition of the System.

Following is an explanation of items in the preceding table under the caption “CAPITAL IMPROVEMENT AND FINANCING PROGRAM.”

*Water Supply and Transmission*

*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 capital expenditures include costs of the Hillview Reservoir Cover. 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. Stage II is scheduled to be completed in 2010. 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 “INTRODUCTORY STATEMENT—World Trade Center Attack,” “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.

*Biological Nutrient Removal.* This program will provide for 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.

*Installation of Water Meters.* This includes the installation of water meters and other fixtures in order to more accurately measure water usage for billing purposes and to encourage conservation.

**Historical Capital Program**

The following table presents capital commitments and capital expenditures of the System for Fiscal Years 1997 through 2001. 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)**

	1997		1998		1999		2000		2001	
	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 . . . . .	\$ 17	\$ 17	\$ 58	\$ 58	\$ 4	\$ 4	\$ 71	\$ 71	\$ 130	\$ 130
Water Mains . . . . .	460	462	152	152	200	203	271	271	178	178
Sewer . . . . .	166	166	184	184	185	185	240	240	90	90
Water Pollution Control . .	352	355	320	321	198	199	420	420	970	970
Equipment . . . . .	85	185	98	98	81	81	66	66	56	56
Total . . . . .	<u>\$1,180</u>	<u>\$1,185</u>	<u>\$812</u>	<u>\$813</u>	<u>\$668</u>	<u>\$672</u>	<u>\$1,068</u>	<u>\$1,068</u>	<u>\$1,423</u>	<u>\$1,423</u>
	1997		1998		1999		2000		2001	
<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 . . . . .	\$ 71	\$ 71	\$107	\$107	\$ 87	\$ 87	\$ 75	\$ 75	\$ 77	\$ 77
Water Mains . . . . .	298	316	211	220	187	190	168	169	214	215
Sewer . . . . .	163	163	162	162	174	174	218	218	196	196
Water Pollution Control . .	206	239	237	249	274	278	263	268	275	276
Equipment . . . . .	189	189	62	62	59	59	68	68	78	78
Total . . . . .	<u>\$927</u>	<u>\$978</u>	<u>\$779</u>	<u>\$800</u>	<u>\$781</u>	<u>\$788</u>	<u>\$792</u>	<u>\$798</u>	<u>\$840</u>	<u>\$842</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 the the New York State Environmental Facilities Corporation (“EFC” or the “Corporation”) 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 97% 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 the Corporation and System revenues. For purposes of forecasting revenue requirements for the System, the principal amount of bonds estimated to be issued in each of the Fiscal Years 2002 through 2006 averages approximately \$1.9 billion per year and the amounts of pay-as-you-go capital to be paid from System revenues is approximately \$20 million in Fiscal Year 2003. See the table entitled “Sources and Uses of Capital Funds” under “CAPITAL IMPROVEMENT AND FINANCING PROGRAM.”

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. 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 Capital Funds**

The following table presents the projected flow of funds in the Construction Fund of the System as of April 2002. The total proceeds from future issues of Authority First Resolution Bonds and Authority Second Resolution Bonds are shown on Line 1 and the proceeds of Commercial Paper Notes are illustrated on Line 2. Lines 4 through 8 show the disposition of the proceeds. Lines 9 through 14 of the table indicate activity in the Construction Fund for each year of the reporting period.

**Sources and Uses of Capital Funds  
(Millions of Dollars)**

<b>Line No.</b>	<b>Description</b>	<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>Period Total</b>
	Disposition of Bond Proceeds							
1	Proceeds from Sale of Bonds . . .	\$ 1,756.7	\$ 1,798.3	\$ 1,689.9	\$ 1,909.1	\$ 2,244.1	\$ 1,681.0	\$11,079.1
2	Proceeds from Commercial Paper Notes . . . . .	<u>1,537.4</u>	<u>1,429.0</u>	<u>1,495.0</u>	<u>1,728.0</u>	<u>1,683.0</u>	<u>1,430.0</u>	<u>9,302.4</u>
3	Total Proceeds . . . . .	3,294.1	3,227.3	3,184.9	3,637.1	3,927.1	3,111.0	20,381.5
	Transfers							
4	Refunding of Prior Bonds . . . . .	382.5	—	41.7	—	385.3	105.6	915.1
5	Retirement of Commercial Paper Notes . . . . .	1,273.0	1,629.0	1,495.0	1,728.0	1,683.0	1,430.0	9,238.0
6	Construction Fund . . . . .	1,537.4	1,429.0	1,495.0	1,728.0	1,683.0	1,430.0	9,302.4
7	Other(1) . . . . .	<u>101.2</u>	<u>169.3</u>	<u>153.2</u>	<u>181.1</u>	<u>175.8</u>	<u>145.4</u>	<u>926.0</u>
8	Total Transfers . . . . .	3,294.1	3,227.3	3,184.9	3,637.1	3,927.1	3,111.0	20,381.5
	Construction Fund							
9	Beginning Balance . . . . .	47.6	250	250	250	250	250.0	47.6
10	Transfer from Commercial Paper Notes . . . . .	1,537.4	1,429.0	1,495.0	1,728.0	1,683.0	1,430.0	9,302.4
11	Revenue Financed Capital Construction . . . . .	<u>40.0</u>	<u>20.0</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>60.0</u>
12	Total Available . . . . .	1,625.0	1,699.0	1,745.0	1,978.0	1,933.0	1,680.0	9,410.0
13	Less: Total Requirements(2) . . .	<u>(1,375.0)</u>	<u>(1,449.0)</u>	<u>(1,495.0)</u>	<u>(1,728.0)</u>	<u>(1,683.0)</u>	<u>(1,430.0)</u>	<u>(9,160.0)</u>
14	Ending Balance . . . . .	<u>\$ 250.0</u>	<u>\$ 250.0</u>	<u>\$ 250.0</u>	<u>\$ 250.0</u>	<u>\$ 250.0</u>	<u>\$ 250.0</u>	<u>\$ 250.0</u>

(1) Includes issuance costs, Debt Service Reserve Fund requirements and capitalized interest.

(2) Cash requirements reflect commitments from current and prior years.

Totals may not add due to rounding.

Source: Black & Veatch.

The following table shows projected debt service requirements including payments on outstanding bonds and on future bonds to be issued in financing the CIP as of April 2002. See “CAPITAL IMPROVEMENT AND FINANCING PROGRAM—Debt Service Requirements.”

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

Line No.	Description	Bond Issue	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
First Resolution Debt Service								
1	Outstanding Bonds . . . . .		\$ 518.4	\$ 525.7	\$526.1	\$ 531.4	\$ 515.6	\$ 515.5
Anticipated Future Bond Issues								
2	Fiscal Year 2002 Bonds . . . . .	320.1	—	23.1	21.3	21.3	21.3	21.3
3	Fiscal Year 2003 Bonds . . . . .	1,498.3	—	40.1	111.5	103.9	103.9	103.9
4	Fiscal Year 2004 Bonds . . . . .	1,348.2	—	—	32.4	105.7	97.3	97.3
5	Fiscal Year 2005 Bonds . . . . .	1,609.1	—	—	—	40.5	128.3	118.4
6	Fiscal Year 2006 Bonds . . . . .	1,558.7	—	—	—	—	39.3	124.3
7	Fiscal Year 2007 Bonds . . . . .	1,275.4	—	—	—	—	—	32.0
8	Total First Resolution Debt Service . . . . .		<u>\$ 518.4</u>	<u>\$ 588.9</u>	<u>\$691.3</u>	<u>\$ 802.8</u>	<u>\$ 905.7</u>	<u>\$1,012.7</u>
Subordinated Indebtedness								
9	Short-term Obligations . . . . .		27.0	32.0	36.0	36.0	36.0	36.0
10	Outstanding Bonds . . . . .		211.1	221.6	226.5	228.6	230.3	229.9
Anticipated Future Second Resolution Bonds								
11	Fiscal Year 2002 Bonds(1) . . . . .	180.3	(7.9)	(0.3)	1.7	1.7	0.7	(0.3)
12	Fiscal Year 2003 Bonds . . . . .	300.0	—	9.1	22.2	22.2	22.2	22.2
13	Fiscal Year 2004 Bonds . . . . .	300.0	—	—	9.5	23.4	23.4	23.4
14	Fiscal Year 2005 Bonds . . . . .	300.0	—	—	—	9.9	24.0	24.0
15	Fiscal Year 2006 Bonds . . . . .	300.0	—	—	—	—	9.9	24.0
16	Fiscal Year 2007 Bonds . . . . .	300.0	—	—	—	—	—	11.6
17	Less: Current Capitalized Interest(2) . . . . .		(7.9)	(14.7)	(2.7)	(1.2)	—	—
18	Less: Future Capitalized Interest(3) . . . . .		—	(1.5)	(1.5)	(1.5)	(1.5)	(1.5)
19	Less: Current EFC Subsidy(4) . . . . .		(0.6)	(5.9)	(12.1)	(18.8)	(25.3)	(31.8)
20	Less: Future EFC Subsidy(5) . . . . .		(42.3)	(41.0)	(51.1)	(49.9)	(48.3)	(45.6)
21	Less: EFC Payments(6) . . . . .		(11.3)	(10.6)	(9.9)	(8.8)	(7.7)	(6.8)
22	Actual Debt Service on Subordinated Indebtedness . . . . .		<u>\$ 168.1</u>	<u>\$ 188.7</u>	<u>\$218.6</u>	<u>\$ 241.6</u>	<u>\$ 263.7</u>	<u>\$ 285.1</u>
23	Less: Interest Earnings on Subordinate Debt Service Fund . . . . .		(0.6)	(0.8)	(1.1)	(1.1)	(1.5)	(1.6)
24	Less: Carryforward Revenues . . . . .		(160.0)	(116.0)	(90.9)	(41.2)	(19.0)	(6.2)
25	Net Debt Service on Subordinated Indebtedness . . . . .		<u>\$ 7.5</u>	<u>\$ 71.8</u>	<u>\$126.6</u>	<u>\$ 199.3</u>	<u>\$ 243.2</u>	<u>\$ 277.3</u>
26	Total Debt Service Payable from Current Revenues (Line 7 + Line 23) . . . . .		<u>\$ 525.9</u>	<u>\$ 660.7</u>	<u>\$817.9</u>	<u>\$1,002.1</u>	<u>\$1,148.9</u>	<u>\$1,290.0</u>

- (1) Includes estimated debt service on the Authority Second Resolution Bonds, 2002 Series 4, 5 and 6. Negative values reflect aggregate debt service savings from these series.
- (2) Includes capitalized interest on outstanding Second Resolution Bonds.
- (3) Includes capitalized interest on anticipated future Second Resolution Bonds.
- (4) Includes the estimated EFC subsidy on outstanding Second Resolution Bonds.
- (5) Includes the estimated EFC subsidy on anticipated future Second Resolution Bonds.
- (6) Represents the anticipated transfer of surplus payments used to offset interest payments on Second Resolution Bonds.

Totals may not add due to rounding.  
Source: Black & Veatch.

Debt service payments on anticipated future Authority First Resolution Bond issues reflect a 30-year term with level annual payments. The interest rates used in computing the anticipated debt service payments for future fixed rate issues average 5.65% for Fiscal Year 2002, 6.15% in Fiscal Year 2003, 6.65% in Fiscal Year 2004 and 6.9% in each year thereafter. The interest rate used for currently outstanding and future variable rate issues is 4.5%. The amount of long-term variable rate debt currently outstanding is approximately 12% 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 level annual payments through Fiscal Year 2006, after which a 20-year term with level annual payments is assumed. 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 5.6% for Fiscal Year 2002, 6.1% in Fiscal Year

2003, 6.6% in Fiscal Year 2004 and 6.85% 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 Authority General Resolution and the Authority Second General Resolution assuming that Variable Rate Bonds bear interest at a fixed rate to their maturity of 4.5% per annum. The schedule does not include debt service on any outstanding Authority Commercial Paper Notes.

Fiscal Year Ending June 30	Outstanding Bonds Total Debt Service(1)(2)(3)	Fiscal 2003 A and B Bonds(4)			Total Bonds Debt Service(4)	Outstanding Second Resolution Bonds Total Debt Service(2)	Total Outstanding Bonds and Second Resolution Bonds Debt Service (1)(2)(3)(4)
		Principal	Interest	Total			
2003	\$ 460,951,928	\$ 21,910,000	\$ 41,976,350	\$ 63,886,350	\$ 524,838,278	\$ 163,338,351	\$ 688,176,630
2004	461,022,008	730,000	43,453,603	44,183,603	505,205,611	174,217,324	679,422,935
2005	466,049,511	1,510,000	42,349,605	43,859,605	509,909,116	179,667,190	689,576,306
2006	449,888,494	2,340,000	41,218,982	43,558,982	493,447,476	184,986,465	678,433,941
2007	437,740,776	5,740,000	41,154,106	46,894,106	484,634,882	187,885,310	672,520,193
2008	481,902,375	6,670,000	40,954,028	47,624,028	529,526,403	195,499,427	725,025,830
2009	484,064,984	6,955,000	40,717,548	47,672,548	531,737,531	197,010,220	728,747,751
2010	471,034,139	7,825,000	40,470,526	48,295,526	519,329,665	228,064,726	747,394,392
2011	436,383,566	31,650,000	40,189,565	71,839,565	508,223,131	247,124,767	755,347,898
2012	455,600,030	13,845,000	38,762,773	52,607,773	508,207,803	260,055,902	768,263,705
2013	448,343,984	42,830,000	38,177,022	81,007,022	529,351,005	244,408,711	773,759,716
2014	412,342,290	52,060,000	36,232,053	88,292,053	500,634,343	145,504,807	646,139,150
2015	482,987,185	49,605,000	33,529,611	83,134,611	566,121,796	131,059,993	697,181,789
2016	432,240,345	50,355,000	30,957,863	81,312,863	513,553,208	123,258,814	636,812,022
2017	454,121,683	49,540,000	28,350,472	77,890,472	532,012,154	114,599,035	646,611,189
2018	397,397,551	48,810,000	25,772,016	74,582,016	471,979,567	99,812,611	571,792,178
2019	529,966,628	46,795,000	23,236,199	70,031,199	599,997,827	92,416,112	692,413,939
2020	558,525,544	20,805,000	20,814,986	41,619,986	600,145,530	79,992,641	680,138,171
2021	576,966,213	3,530,000	19,851,140	23,381,140	600,347,352	65,960,480	666,307,832
2022	577,289,890	3,625,000	19,753,271	23,378,271	600,668,161	63,192,792	663,860,953
2023	576,823,053	3,725,000	19,652,769	23,377,769	600,200,821	58,501,200	658,702,021
2024	577,019,346	3,825,000	19,549,494	23,374,494	600,393,840	45,233,940	645,627,779
2025	575,874,971	3,930,000	19,443,446	23,373,446	599,248,417	45,470,278	644,718,696
2026	576,771,100	4,045,000	19,334,487	23,379,487	600,150,587	45,465,524	645,616,111
2027	532,333,319	4,155,000	19,222,341	23,377,341	555,710,659	45,731,881	601,442,541
2028	472,168,644	54,725,000	19,107,144	73,832,144	546,000,788	45,980,439	591,981,227
2029	472,172,525	37,350,000	16,158,720	53,508,720	525,681,245	46,253,580	571,934,825
2030	472,549,381	59,445,000	14,381,608	73,826,608	546,375,989	31,825,118	578,201,108
2031	513,403,575	62,385,000	11,437,450	73,822,450	587,226,025	26,998,595	614,224,620
2032	578,490,444	9,765,000	8,345,558	18,110,558	596,601,002	—	596,601,002
2033	501,136,488	65,865,000	7,957,200	73,822,200	574,958,687	—	574,958,687
2034	105,000,000	69,135,000	4,693,074	73,828,074	178,828,074	—	178,828,074
2035	—	5,175,000	1,264,530	6,439,530	6,439,530	—	6,439,530
2036	—	5,315,000	1,121,054	6,436,054	6,436,054	—	6,436,054
2037	—	5,465,000	973,696	6,438,696	6,438,696	—	6,438,696
2038	—	5,615,000	822,180	6,437,180	6,437,180	—	6,437,180
2039	—	5,765,000	666,505	6,431,505	6,431,505	—	6,431,505
2040	—	5,925,000	506,671	6,431,671	6,431,671	—	6,431,671
2041	—	6,090,000	342,402	6,432,402	6,432,402	—	6,432,402
2042	—	6,260,000	173,557	6,433,557	6,433,557	—	6,433,557
Total	<u>\$15,428,561,967</u>	<u>\$891,090,000</u>	<u>\$873,075,603</u>	<u>\$1,764,165,603</u>	<u>\$17,192,727,571</u>	<u>\$3,569,516,234</u>	<u>\$20,762,243,804</u>

Totals may not add due to rounding.

- (1) Assumes that on the respective tender dates, the Crossover Bonds will be exchanged for the Authority First General Resolution Bonds and the proceeds of the respective series of Crossover Bonds will be applied to redeem certain Outstanding Authority First Resolution Bonds.
- (2) Net of anticipated capitalized interest, subsidy and surplus payments from EFC.
- (3) Excludes principal and interest on the Bonds to be refunded as shown on Appendix G hereto.
- (4) Assumes that the maturities of the Fiscal 2003 Series B Bonds, which are Refundable Principal Installments, will be amortized as provided in the definition of Adjusted Debt Service rather than paid in full at maturity.

## 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. The financial projections contained in this Official Statement were prepared in April 2002 and have not been updated to reflect subsequent developments. For more information, see “INTRODUCTORY STATEMENT—Financial Projection Assumptions.”

### Revenues

The following table presents, on a cash basis, the System revenues received during Fiscal Years 1997 through 1999, as derived from the supplemental schedules of cash receipts and disbursements and System revenues received during Fiscal Years 2000 and 2001, as derived from the statement of cash flows, which accompany the annual financial statements for Fiscal Years 1997 through 2001.

#### System Revenues (Millions of Dollars)

<u>Revenue Category</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>
Flat Rate—Water and Sewer Charges(1) . . .	\$ 495,275	\$ 483,601	\$ 466,837	\$ 454,887	\$ 490,181
Metered—Water and Sewer Charges(1) . . .	641,249	785,086	842,436	907,350	872,132
Meter—Upstate Customers . . . . .	8,597	11,902	14,252	18,994	18,552
Miscellaneous Revenues(2) . . . . .	62,951	73,367	51,136	49,950	53,452
Interest Penalty—Late Charges . . . . .	23,949	19,271	19,445	24,250	24,987
Interest Income . . . . .	64,883	97,739	85,872	74,467	85,724
Tax Lien Sale(3) . . . . .	13,595	—	25,912	7,449	40,129
Total . . . . .	<u>\$1,310,499</u>	<u>\$1,470,966</u>	<u>\$1,505,890</u>	<u>\$1,537,347</u>	<u>\$1,585,157</u>

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- (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. These initiatives include, but are not limited to, the following: establishing a delinquent accounts unit for small to mid-size customers; outsourcing selected delinquency notification and collection functions to reputable collection or credit organizations; shutting off water and sewer service for non-payment of bills; and selling liens securing unpaid water and sewer charges. It is assumed that some of these initiatives or others will gradually result in a 5% increase in the overall rate of cash collections during the forecast period, 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 that are currently forecasted. For a more detailed discussion of billing and collection, see “RATES AND BILLINGS.”

**Expenses**

The following table presents System expenses for Fiscal Years 1997 through 2001 on an accrual basis which have been derived from the annual financial statements for Fiscal Years 1997 through 2001. 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>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>
Water(1)					
Personal Service(2) .....	\$ 97,268	\$ 96,734	\$100,010	\$118,598	\$120,797
Other Than Personal Service(3) .....	<u>123,027</u>	<u>133,222</u>	<u>159,516</u>	<u>146,331</u>	<u>165,068</u>
Total.....	220,295	229,956	259,526	264,929	285,865
Wastewater(1)					
Personal Service(2) .....	157,815	163,436	162,310	187,003	188,704
Other Than Personal Service(3) .....	<u>186,002</u>	<u>189,791</u>	<u>193,433</u>	<u>158,037</u>	<u>169,459</u>
Total.....	<u>343,817</u>	<u>353,227</u>	<u>355,743</u>	<u>345,040</u>	<u>358,163</u>
Sub-Total.....	564,112	583,183	615,269	609,969	644,028
Administrative and General(4).....	13,374	11,217	13,506	10,092	11,215
Indirect Expenses(5).....	<u>38,682</u>	<u>63,126</u>	<u>37,676</u>	<u>40,811</u>	<u>41,195</u>
Total System.....	<u>\$616,168</u>	<u>\$657,526</u>	<u>\$666,451</u>	<u>\$660,872</u>	<u>\$696,438</u>

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- (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 Water 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 April 2002 to increase from approximately \$1.4 billion in Fiscal Year 2002 to approximately \$2.1 billion in Fiscal Year 2007. Fiscal Year 2002 revenues from user payments reflect an increase in water and sewer rates of 3% effective July 1, 2001. A rate increase of 6.5% effective in Fiscal Year 2003 and anticipated future rate increases of 9.7% in each of Fiscal Years 2004 and 2005, 9.3% in Fiscal Year 2006 and 8.1% in Fiscal Year 2007 provide the majority of the increase in user payments in such Fiscal Years. Upstate revenues, shown on Line 2 of the table, are projected to increase from approximately \$19 million in Fiscal Year 2002 to approximately \$26 million in Fiscal Year 2007. This revenue growth is due to expected increases in the cost of water supply services and an assumption that future revenue from these customers will more closely match the cost of providing service. Miscellaneous revenues, shown on Line 4 of the table, include fees from activities such as the review, inspection, and approval of System connections.

Nonoperating income consists of interest income on System funds, miscellaneous interest income, and other income. See "RATES AND BILLING—Accounts, Billing and Collection."

### Projected Revenues (Millions of Dollars)

<u>Line No.</u>	<u>Description</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
Operating Revenues							
1	User Payments . . . . .	\$1,429.5	\$1,459.2	\$1,609.2	\$1,789.1	\$1,966.9	\$2,148.8
2	Upstate Revenues . . . . .	19.2	20.3	21.5	22.9	24.4	25.9
3	Subtotal Service Revenue . . . . .	1,448.6	1,479.5	1,630.7	1,812.0	1,991.3	2,174.8
4	Miscellaneous Revenues . . . . .	5.0	5.3	5.6	5.8	6.1	6.4
5	Subtotal Operating Revenue . . . . .	1,453.6	1,484.8	1,636.2	1,817.8	1,997.4	2,181.2
Nonoperating Revenues							
6	Interest Income on System Funds(1) . . . . .	58.1	68.8	76.2	82.0	97.9	106.5
7	Miscellaneous Interest Income(2) . . . . .	25.0	25.0	25.0	25.0	25.0	25.0
8	EFC Subsidy on Outstanding Bonds . . . . .	4.5	4.2	3.9	3.6	3.3	2.9
9	Subtotal Nonoperating Revenues . . . . .	87.6	98.0	105.1	110.6	126.2	134.4
10	Total Revenues . . . . .	1,541.2	1,582.8	1,741.4	1,928.4	2,123.5	2,315.6
11	EFC Subsidy and Surplus Payments(3) . . . . .	54.2	57.5	73.1	77.5	81.3	84.2
12	Additional Interest Earnings(4) . . . . .	0.6	0.8	1.1	1.1	1.5	1.6
13	Total System Revenues . . . . .	\$1,596.0	\$1,641.1	\$1,815.6	\$2,007.0	\$2,206.3	\$2,401.4

Notes:

- (1) Includes interest income on the Construction Fund, Debt Service Fund and the Debt Service Reserve Fund.
- (2) Includes interest income on overdue accounts.
- (3) Subsidy funds used as an offset to debt service on Subordinate Indebtedness.
- (4) Includes interest earnings on the debt service fund of Subordinate Indebtedness.

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

## Projected Operating and Maintenance Expenses

The table set forth below shows, for Fiscal Years 2002 through 2007, the System's projected operation and maintenance expenses as of April 2002.

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

Line No.	Description	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
1	Authority/Board Operations . . . . .	\$ 11.6	\$ 15.0	\$ 15.8	\$ 16.5	\$ 17.4	\$ 18.2
	Water Operations						
2	Personal Services . . . . .	154.9	154.6	157.2	161.0	164.9	168.9
3	Other Than Personal Services . . . . .	165.9	175.7	164.4	169.1	174.1	179.6
4	Total Water Operations . . . . .	320.8	330.3	321.6	330.1	339.0	348.5
	Wastewater Operations						
5	Personal Services . . . . .	224.7	228.1	232.2	237.9	243.8	249.8
6	Other Than Personal Services . . . . .	180.1	165.8	173.6	178.9	183.9	189.6
7	Total Wastewater Operations . . . . .	404.8	393.9	405.8	416.8	427.7	439.3
8	Indirect Expenses . . . . .	14.6	14.6	14.6	14.6	14.6	14.6
9	Judgments and Claims . . . . .	8.0	8.0	8.0	8.0	8.0	8.0
10	Total Operating Expenses . . . . .	759.8	761.8	765.8	786.0	806.7	828.7
11	Less: Trust Account Withdrawals . . . . .	—	(20.0)	(20.0)	(35.0)	(13.5)	—
12	Net Operating Expenses . . . . .	759.8	741.8	745.8	751.0	793.2	828.7
13	Less: Credit for Prior Year Excess O&M Payment . . . . .	(22.8)	(47.0)	—	—	—	—
14	Net Operating Expense Payments . . . . .	<u>\$737.0</u>	<u>\$694.8</u>	<u>\$745.8</u>	<u>\$751.0</u>	<u>\$793.2</u>	<u>\$828.7</u>

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 average approximately \$6.0 million per year through Fiscal Year 2007. Other expenses of the Authority include fees related to adjustable rate bonds 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 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 reflect the results of the recent labor agreement, which covers the period April 1, 2000 through June 30, 2002. Fiscal Year 2002 includes a 4% per year increase over Fiscal Year 2001 and Fiscal Years 2003 through 2007 include an assumed 2.5% increase over Fiscal Year 2002. 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. The major component 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. Other than personal services costs are assumed to increase at an estimated rate of 3% per year, for the forecast period. 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 8 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 March 31, 2002, the value of the trust account was \$83.5 million. It is assumed that this value will increase with interest earnings at the rate of 3% per annum over the remainder of Fiscal Year 2002 and 2% per year thereafter, 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 \$20 million in each of Fiscal Years 2003 and 2004 and \$35 million and \$13.5 million in Fiscal Years 2005 and 2006, respectively, 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 April 2002 for Fiscal Year 2002 through Fiscal Year 2007. See “CAPITAL IMPROVEMENT AND FINANCING PROGRAM—Debt Service Requirements.” For purposes of the chart below, a projected net surplus at the end of Fiscal Year 2001 of \$160.8 million has been used to offset the Revenue requirements for the debt service on Subordinated Indebtedness in Fiscal Year 2002. 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 Authority General Resolution and the Authority Second Resolution. See “FINANCIAL OPERATIONS—Projected Revenues.” As shown on Line 31 of the table, positive net surpluses are maintained throughout the reporting period. Line 32 illustrates the coverage of Authority General Resolution debt service by current revenues available for debt service. Line 33 illustrates the coverage of Authority General Resolution and Authority Second Resolution debt service by current revenues available for debt service.

### Forecasted Cash Flows (Millions of Dollars)

Line No.	Description	Fiscal Year 2002	Fiscal Year 2003	Fiscal Year 2004	Fiscal Year 2005	Fiscal Year 2006	Fiscal Year 2007
	Operating Revenues						
1	Water and Sewer User Payments . . . . .	\$1,429.5	\$1,459.2	\$1,609.2	\$1,789.1	\$1,966.9	\$2,148.8
2	Upstate Revenue . . . . .	19.2	20.3	21.5	22.9	24.4	25.9
3	Miscellaneous Revenue . . . . .	5.0	5.3	5.6	5.8	6.1	6.4
	Other Revenues						
4	Miscellaneous Interest Income . . . . .	25.0	25.0	25.0	25.0	25.0	25.0
5	Interest Income on Authority Funds . . . . .	58.1	68.8	76.2	82.0	97.9	106.5
6	EFC Subsidy on Outstanding Bonds . . . . .	4.5	4.2	3.9	3.6	3.3	2.9
7	Current Revenues Available for Debt Service . .	1,541.2	1,582.8	1,741.4	1,928.4	2,123.5	2,315.6
	First Resolution Debt Service						
8	Outstanding Bonds . . . . .	518.4	525.7	526.1	531.4	515.6	515.5
9	Anticipated Future Bonds . . . . .	—	63.2	165.2	271.4	390.1	497.2
10	Total First Resolution Debt Service . . . . .	518.4	588.9	691.3	802.8	905.7	1,012.7
	Subordinated Obligations						
11	Interest Payments on Commercial Paper Notes .	27.0	32.0	36.0	36.0	36.0	36.0
12	Outstanding Second Resolution Bonds . . . . .	211.1	221.6	226.5	228.6	230.3	229.9
13	Anticipated Future Second Resolution Bonds . .	(7.9)	8.8	33.4	57.2	80.2	104.9
14	Less: EFC Subsidy and Capitalized Interest on Subordinated Bonds . . . . .	(62.1)	(73.7)	(77.3)	(80.2)	(82.8)	(85.7)
15	Actual Debt Service on Subordinated Indebtedness . . . . .	168.1	188.7	218.6	241.6	263.7	285.1
16	Less: Carryforward Revenues and Other Revenues . . . . .	(160.8)	(117.1)	(92.0)	(42.7)	(20.6)	(8.0)
17	Net Debt Service on Subordinated Indebtedness(1) . . . . .	7.3	71.5	126.6	198.9	243.1	277.1
18	Total Debt Service Payable from Current Revenues (Line 10 + Line 17) . . . . .	525.7	660.4	817.9	1,001.7	1,148.8	1,289.8
	Operating Expenses						
19	Authority/Board Operations . . . . .	11.6	15.0	15.8	16.5	17.4	18.2
20	Water System . . . . .	320.8	330.3	321.6	330.1	339.0	348.5
21	Wastewater System . . . . .	404.8	393.9	405.8	416.8	427.7	439.3
22	Indirect Expense . . . . .	14.6	14.6	14.6	14.6	14.6	14.6
23	Judgments and Claims . . . . .	8.0	8.0	8.0	8.0	8.0	8.0
24	Total Operating Expenses . . . . .	759.8	761.8	765.8	786.0	806.7	828.7
25	Less: Trust Account Withdrawals . . . . .	—	(20.0)	(20.0)	(35.0)	(13.5)	—
26	Net Operating Expenses . . . . .	759.8	741.8	745.8	751.0	793.2	828.7
27	Less: Credit for Prior Year Excess O&M Payment . . . . .	(22.8)	(47.0)	—	—	—	—
28	Rental Payment to the City of New York . . . . .	128.4	116.6	136.5	156.7	175.4	194.7
29	Cash Financed Capital Construction . . . . .	34.1	20.0	—	—	—	—
30	Total Expenses . . . . .	899.5	831.5	882.2	907.7	968.6	1,023.4
31	Net Surplus (Line 7 – Line 18 – Line 30) . . . . .	\$ 116.0	\$ 90.9	\$ 41.2	\$ 19.0	\$ 6.2	\$ 2.4
32	First Resolution Debt Service Coverage (Line 7/Line 10) . . . . .	2.97	2.69	2.52	2.40	2.34	2.29
33	First and Second Resolution Debt Service Coverage (Line 7/Line 18) . . . . .	2.93	2.40	2.13	1.93	1.85	1.80

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

(1) Includes estimated interest payments on Commercial Paper Notes.

Source: Black & Veatch.

## 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, and of surcharges for industrial discharges into the System’s sewers levied in conformity with formulas set forth in the Clean Water Act and regulations thereunder. 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.

(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. For Fiscal Year 2003, the Board has approved a 6.5% rate increase effective July 1, 2002. As of April 2002, forecasted debt service, operating and other costs for the System indicate that the anticipated future rate increases to be set by the Board for water and sewer services combined are 9.7%, 9.7%, 9.3% and 8.1% in Fiscal Years 2004 through 2007, respectively. 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. Water taken from either the Croton or Catskill/Delaware systems is currently charged at a rate of \$448.83 per million gallons for daily per capita amounts not in excess of daily per capita consumption within the City. The Board has publicly noticed a proposal to increase that rate to \$485.71 per million gallons effective July 1, 2002.

*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—13, and for Industrial—14.

#### Comparative Annual Water and Sewer User Charges<sup>(1)</sup>

Single Family Residential		Commercial		Industrial	
City	Annual Charge	City	Annual Charge	City	Annual Charge
Chicago <sup>(2)</sup>	\$215	Chicago	\$2,920	Indianapolis	\$217,888
St. Louis	370	Dallas	2,987	St. Louis	241,120
Newark	389	St. Louis	3,032	Dallas	257,491
Baltimore	395	Indianapolis	3,069	Newark	269,645
Milwaukee	405	Baltimore	3,411	Detroit	275,656
Indianapolis	412	San Antonio	3,518	Milwaukee	286,382
Detroit	413	Milwaukee	3,569	Chicago	291,955
San Antonio	415	Detroit	3,640	Baltimore	300,700
<b>New York</b>	<b>467</b>	Newark	3,738	Philadelphia	315,840
Columbus	485	Columbus	4,145	San Antonio	321,157
Dallas	487	New Orleans	4,420	New Orleans	365,715
New Orleans	521	Philadelphia	4,632	Columbus	403,256
Cleveland	567	<b>New York</b>	<b>4,675</b>	San Jose	454,218
Los Angeles	586	Honolulu	4,752	<b>New York</b>	<b>467,447</b>
Honolulu	586	San Jose	5,264	Honolulu	473,044
Houston	590	Los Angeles	5,326	Jacksonville	490,892
San Jose	592	Jacksonville	5,381	Los Angeles	519,942
Washington, D.C.	608	San Diego	5,612	San Diego	523,437
Jacksonville	631	Cleveland	5,988	Cleveland	602,371
Philadelphia	692	Washington, D.C.	6,059	Washington, D.C.	605,845
Atlanta	753	Houston	6,279	Houston	618,975
San Francisco	781	Atlanta	7,527	Atlanta	752,674
Boston	790	Boston	8,062	Boston	839,438
San Diego	823	San Francisco	9,207	San Francisco	900,462
<b>Average</b>	<b>\$540</b>	<b>Average</b>	<b>\$4,884</b>	<b>Average</b>	<b>\$449,815</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. Charges for all cities reflect rate schedules in effect in March 2002.

(2) In addition to the water and sewer user charge, a single family residence with a market value of \$100,000 pays \$156 per year in property taxes to the Metropolitan Water Reclamation District of Greater Chicago (March 1999).

## **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 828,000 water and sewer accounts, nearly all of which are for water and sewer service. Approximately 88% of the System's water and sewer customers are residential. The remainder are primarily commercial and industrial users, with industrial users accounting for only a small portion of water and sewer usage.

Approximately 95,000 accounts, 11% of accounts, are billed annually through the flat-rate system. These accounts are charged for water 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 flat 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 733,000 accounts, 89% of 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 account 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 93% of all water and sewer accounts have meters installed. Starting in July 2000, unmetered properties which had not taken steps to install a meter were required to pay a surcharge doubling their annual water and sewer charge. A surcharge was levied on approximately 20,000 accounts in their July 2002 bills which were mailed in April 2002.

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 34,000 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.

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 exists which 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.

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 building 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, 268 applications for the program have been received and 178 applications 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 2002, metered accounts of such institutions which would be charged less than \$12,857 per year for water service are fully exempt from water and sewer charges, with a 50% exemption for those accounts ranging from \$12,857 to \$25,715 in annual water charges. The comparable thresholds for flat-rate accounts of these institutions are \$11,777 and \$23,554. 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. Analyses of the CIS and the meter-based bills which it generates have revealed significant flaws in the customer information data converted from the system formerly used to bill customers. The CIS and the meter-based bills also suffer from a high percentage of estimated bills. DEP is working to correct system inaccuracies. Such correction is dependent on both computer analyses and an account-by-account review. The correction process has brought to light weaknesses in the ability of the CIS as designed and implemented to identify and report account errors and corrections on a comparable basis over time. In addition, there has been significant difficulty in judging the accuracy of receivable balances carried in the CIS as a basis for eliminating invalid receivables. Progress has been made over several years in developing the personnel resources to create an adequate and credible baseline of account information. In addition, resources were added to ensure that all meters are read and billed on a quarterly basis.



## 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 1,300 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.”)

For a discussion of the effects on the System of the World Trade Center attack, see “INTRODUCTORY STATEMENT—Recent Events.”

### 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 The Chase Manhattan Bank) 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. The present Water System was consolidated from the various water systems in communities now consisting of the Boroughs of Manhattan, the Bronx, Brooklyn, Queens and Staten Island.

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 before the Appendices for the location of the reservoir systems.)** In addition, less than 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	1954
Cannonsville.....	95.7	1965
Rondout.....	49.6	1951
Neversink.....	<u>34.9</u>	1950
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 .....	31.5	
<b>Distribution Facilities</b>		
Central Park .....	1.0	1862
Jerome Park .....	0.8	1905
Ridgewood (basin no. 3).....	0.1	1875
Silver Lake (tanks) .....	<u>0.1</u>	1970
Total .....	<u>2.0</u>	
Total Storage Capacity .....	<u><u>33.5</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 Croton System is divided into three subsystems: the West Branch, Croton Falls, and Muscoot. 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 Ashokan 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

Downsville 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).

Water may be pumped into the Delaware Aqueduct from the Chelsea Pump Station which draws from the Hudson River. The Chelsea Pump Station has a capacity of 100 mgd. The Chelsea Pump Station was reconstructed in 1965-66 under drought emergency circumstances and has operated under drought conditions at several times since then. However, DEP has committed not to use the Chelsea Pump Station in its planning for future emergencies. For more information on the Chelsea Pump Station, see “—Governmental Regulation.”

Wells in Queens provide less than 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 before the Appendices for the location of the major water transmission facilities.)** 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 Reservoir and Silver Lake Tanks) to the service area.

DEP is currently conducting a program of reviewing and assessing 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 subsequently 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. From two terminal shafts in Brooklyn, steel and standby cast iron pipelines extend into Queens and Staten Island, respectively. 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 at Fort Greene Park as well as at State and Nevins Streets in Brooklyn. Tunnel 2 has a capacity of approximately 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 2010. 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, Stage II will enable the system to maintain full service even if Tunnel 1 or 2 was shut down. Stage III will extend from the Kensico Reservoir to the interconnecting chamber of Stage I, south of Hillview Reservoir. 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.

The water distribution system consists of a grid network of over 6,600 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 7% is over 100 years old. Approximately 2,200 miles of pipe are unlined cast iron laid before 1930. Pipe laid between 1930 and 1969 is cement-lined cast iron and comprises about 2,400 miles of the distribution system. Pipe laid after 1970 is cement-lined ductile iron and comprises about 1,600 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 by DEP 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. As of June 18, 2002, the System's reservoirs contained approximately 88% of capacity, although normal levels at this time of year would be approximately 98% of capacity.

Since the Water System relies upon a surface water supply, it 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. Major components of the Drought Emergency phase of the Drought Management Plan are set forth below.

Stage I Mandates include a 15% reduction in water consumption based on prior-year usage for non residential users; restriction on watering of lawns, gardens and golf courses to a maximum of four hours on alternate days during specific hours; and a prohibition against serving System water to any restaurant patron unless requested by such patron.

Stage II Mandates include a ban on lawn watering; a ban on the filling of private swimming pools; restrictions on usage of certain water-cooled air conditioning equipment; and an additional 5% reduction in water consumption for non-residential users.

Stage III Mandates include additional restrictions on the use of water-cooled air conditioning systems prohibiting temperatures below 79°F; and an additional 5% reduction in water consumption for non-residential users.

Since Stage IV conditions have not yet been experienced, rules have yet to be developed for such occurrence. In the event such conditions are imminent, appropriate rules would be developed and promulgated.

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. In certain circumstances, and with approval from federal and State regulatory agencies, the Chelsea Pump Station may be utilized to draw Hudson River water into the System. See “—Water Collection and Distribution.”

### *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 (the “IEC”); and at the municipal level in DEP, NYCDOH, DOB and the Department of Business Services (the “DBS”) 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, and the addition of caustic soda and phosphoric acid for corrosion control, disinfection, and fluoridation. 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 superseded 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. Such approval is not expected to be forthcoming. Following the Court of Appeals decision, USEPA, the State and the City negotiated a supplement to the Consent Decree (the “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 Supplement further requires the City to select its preferred site by April 2003. The Supplement sets forth a series of milestones, with associated stipulated penalties, including a milestone for having the filtration facility operational by 2010, if sited at the Westchester County site, or 2011, if sited at the Bronx County site. The total estimated cost of the Westchester County facility, the more expensive facility, is \$1.5 billion, with



estimated costs through Fiscal Year 2006 of \$420 million provided for in the Current Capital Plan. Finally, the Supplement requires the City to spend \$2 million on a project or projects to improve, enhance and secure the Croton Water Supply System and the Croton Watershed.

*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.

In 1996, USEPA issued an interim Filtration Avoidance Determination (“FAD”) pursuant to which the City is not required to filter water from the Catskill and Delaware Systems. 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 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.

In 1997, USEPA extended the FAD to April 15, 2002. Preliminary estimates of the costs of such filtration are from \$3 billion to \$4 billion. The 1997 FAD contains a number of conditions which the City is required to satisfy to ensure that the City would continue to be relieved of requirements for filtration. One of those conditions is that the City solicit property from owners of 355,050 acres of land in the watershed and actually acquire (with certain limited exceptions) any land used to satisfy the solicitation goal where the owner accepts the City’s purchase price. To be eligible for acquisition, land must satisfy specified natural features and minimum acreage criteria. The City expects to spend \$250 million for the acquisition program, which may be increased by \$50 million upon a review of the City’s progress with the program in 2004. NYSDEC has issued a renewable ten-year land acquisition permit to the City. The City has closed on the acquisition of approximately 22,900 acres of land in the Catskill and Delaware watersheds with an aggregate value of approximately \$68.4 million, and is a party to contracts or option agreements for the purchase of approximately 13,900 acres of additional land in the Catskill and Delaware watersheds with an aggregate value of approximately \$29.0 million. The City has included \$88.8 million in the Current Capital Plan for the purchase of land in the Catskill and Delaware watersheds.

In its report, dated May 31, 2000, USEPA found that the City has made significant progress in protecting the Catskill/Delaware watershed, but that it must step up its efforts in certain areas in order to avoid being required to filter its water in the long-term. USEPA indicated that the City must accelerate the pace of its program to upgrade non-City-owned water pollution control plants in the watershed. USEPA also indicated that the City must aggressively pursue additional land acquisition in the Kensico Reservoir basin in order to protect the quality of water flowing through the Kensico Reservoir. Although there is only a limited amount of eligible land that may be acquired in that basin, the City has renewed its efforts to secure purchases of, or conservation easements on, lands in the basin. Approximately 200 acres in the basin either have been acquired or are under contract. In addition, the City is pursuing other approaches to protect Kensico water quality including investigating whether local governments in the basin can provide assistance in acquiring and preserving open space for watershed protection and

whether, in cooperation with USEPA and local property owners, a non-regulatory program can be developed to encourage additional actions to protect water quality beyond the requirements of the City's watershed regulations. The City has already devoted substantial efforts aimed at protecting the Kensico Reservoir, including the installation of stormwater best management practices on numerous parcels of land adjacent to the reservoir. The City has adopted land use regulations which are a major component of the City's efforts to protect its water supply. These regulations, which were adopted pursuant to the New York State Public Health Law and which have NYSDOH approval, are designed to prevent future contamination of the System's water supply. The City believes that its increased regulatory efforts to protect its water supply will preserve the high quality of the water in the Catskill and Delaware watersheds and, together with the other elements of the City's watershed protection program, will avoid the need for filtration of these water systems.

The 1997 FAD required, among other things, that the City proceed with the design of a filtration facility for the Catskill and Delaware Systems, should it be required. In December 2000, the City, as permitted in the 1997 FAD, petitioned for relief from proceeding to final design work for the filtration facility. As part of its petition, the City proposed using ultraviolet ("UV") treatment for Catskill/Delaware water. On November 29, 2001, USEPA granted the City's request for relief from proceeding with final design work for a filtration facility subject to certain conditions including the City's conducting a feasibility evaluation of UV and, if such treatment is found to be feasible, with the design and construction of a UV facility. The cost of such a facility is estimated to be approximately \$226 million, all of which is included in the Current Capital Plan.

On December 17, 2001, DEP submitted to USEPA an application to extend the 1997 FAD through at least April 15, 2007. The application contained a description of DEP's proposed actions, over the next five years, to protect the Catskill and Delaware water supplies and justify the continuation of filtration avoidance including the continuation and enhancement of certain environmental and economic partnership programs established under the Watershed Memorandum of Agreement, with an estimated total capital cost of approximately \$90 million over the next five years, which is not included in the CIP. On April 15, 2002, USEPA issued a letter stating that the 1997 FAD remains in effect until USEPA provides a further determination on filtration avoidance for the Catskill and Delaware supplies. On May 23, 2002, USEPA released a draft of a new FAD for public comment. The proposed FAD would, subject to its terms and conditions, continue filtration avoidance for the Catskill and Delaware supplies until USEPA makes a further determination (anticipated to be in April 2007). The draft is based in large part on DEP's December 2001 proposal, with certain changes, enhancements and modifications required by USEPA. The public comment period is scheduled to close on June 24, 2002.

*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 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 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. 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 a program to remediate mercury, PCBs and lead from the facilities of concern. DEP's operation and management of the Water System will not materially change as a result of the plea.

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 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.

DEP has analyzed several different types of covers for the reservoir, with estimated costs of approximately \$356 million, of which \$147 million is provided for in the Current Capital Plan. 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 requested modifications of certain milestone dates set out in the Administrative Order. NYSDOH could choose to impose financial penalties if DEP fails to meet the current December 31, 2005 milestone date for completion of the cover. DEP intends to renew discussions with NYSDOH on alternative strategies to protect the Hillview Reservoir and on modifications to the Administrative Order allowing additional time for construction of a cover, if such strategies are not accepted.

*Chelsea Pump Station.* In connection with the current Drought Emergency (Stage I), the City submitted applications for a water supply permit and a State Pollutant Discharge Elimination System (“SPDES”) permit to NYSDEC to operate the Chelsea Pump Station on an emergency basis at the maximum rate of 100 mgd. See, “—Drought Response Measures.” However, DEP has committed that it will no longer include usage of the Chelsea Pump Station in its planning to meet future drought emergencies. As such, the City is withdrawing its permit applications. DEP has reserved the right to revisit usage of the Chelsea Pump Station in the case of catastrophic or extraordinary emergency situations. Any use of the Chelsea Pump Station in response to such a situation would require an application to USEPA and/or NYSDOH, and to NYSDEC, for appropriate approvals. The Chelsea Pump Station is currently being upgraded so that it can be made ready for use if such situations arise.

*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 City’s 2001 CCR covering the calendar year 2001, the most recent such report, noted that the Croton System experienced five violations of the color standard established under the Sanitary Code, and water from the wells in Queens experienced three violations of such standard. The Croton System experienced one violation of the iron standard and two violations of the manganese standard, both of which generally contribute to color violations. The Croton filter project is intended, among other things, to address the issue of color violations in Croton System water. Although the Catskill and Delaware Systems did not experience any color violations in 2001, they have experienced periodic violations in previous years. 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.

*Dams.* Engineering reports sponsored by the Corps in the early 1980s indicated that the dams and reservoirs in the Croton System are safe but in need of some rehabilitation and reconstruction work. An ongoing reconstruction program has been established and funded in the CIP. The majority of the rehabilitation includes replacement and refurbishment of the outlet works and mechanical equipment

within the gatehouses, improvements to the dam structures, maintenance of grounds and enlargement of the spillway capacities. Upon completion of the proposed reconstruction in 2002, all facilities in the Croton System will comply with the current national dam safety guidelines established in 1976.

*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 followed during the 1985 and 1989 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 before the **Appendices for the location of the water pollution control facilities.**)

### *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 1930's 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 1930's. During the 1940's 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 waste water treatment 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.....	250	1937	1979
Hunts Point.....	200	1952	1978
Bowery Bay.....	150	1939	1978
Owls Head.....	120	1952	1995
Coney Island.....	100	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>1,770</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; composting in West Virginia and Pennsylvania; and lime stabilization in Colorado and New Jersey. The City’s financial plan includes \$50 million in Fiscal Year 2002 for contracts with private vendors to manage biosolids.

#### *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 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. The Newtown Creek plant is subject to a modified consent decree between the City and the State (the "Secondary Treatment Consent Decree"), including a compliance schedule for upgrading the plant to full secondary treatment utilizing a modified step-feed treatment process, known as Track III, by the end of 2007. The total cost of upgrading the Newtown Creek plant is estimated to be \$2.2 billion, of which \$1.48 billion remains to be spent and \$1.15 billion is included in the Current Capital Plan. For more information see "LITIGATION."

*Non-City-Owned Plants.* The City is also required, under the May 1997 Determination, to undertake a program of upgrading all 114 non City-owned water pollution control plants in the watershed, to enable those facilities to comply with the City's new watershed protection regulations. This program, also known as the regulatory upgrade program, was specifically provided for in the Watershed Memorandum of Agreement and is currently funded at a level of approximately \$185 million. The regulations governing the program require the upgrades to be completed by May 1, 2002. Although the City is providing funding for the upgrades, the actual design and construction work is being undertaken by the individual owners of each facility, under contracts with EFC, acting as program administrator for the City.

As a result of delays in securing acceptable engineering proposals and plans from facility owners, not all upgrades were completed by the May 1, 2002 milestone date. However, a total of six facilities, which account for over 80% of the flow into the Catskill and Delaware watersheds from non-City owned plants, are expected to be upgraded by June 30, 2002, in compliance with the new draft FAD released by USEPA in May 2002. The remaining facilities are required to be upgraded by various dates through the end of 2003.

On June 3, 2002, DEP and Westchester County announced their agreement on the basic terms of a project that will further enhance protection of the Croton watershed, by eliminating the need to upgrade four non-City owned water pollution control plants in that watershed, including the municipally-owned Yorktown Heights plant, which is the largest existing plant in all three City watersheds. The project will divert wastewater normally treated at the four facilities and discharged into the Croton watershed; instead, the wastewater will be conveyed, via pump stations and pipelines, to County-owned plants in Peekskill and Yonkers for treatment and discharge of treated effluent into the Hudson River. The project is also intended to divert wastewater from certain residential areas near the Croton Reservoir, currently served by septic systems, to the County-owned plants in Peekskill and Yonkers for treatment and discharge into the Hudson. The project has an estimated capital cost of approximately \$29.4 million, of which the City will contribute approximately \$25.8 million which is included in the Current Capital Plan.

*SPDES.* Over the past several years, NYSDEC has notified the City of alleged violations of the SPDES permits for the City's wastewater treatment 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 wastewater treatment 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.

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 Current Capital Plan includes approximately \$10 million for the upgrading of 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 City's 14 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. Consistent with this practice, DEP and NYSDEC are currently negotiating a new consent order (the "Omnibus VI Consent Order") to cover alleged violations from January 1, 2000 through December 31, 2001, including alleged effluent, operating and bypass violations at a number of plants.

*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 Current Capital Plan includes approximately \$872 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. 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. The City is in the process of proposing to NYSDEC technical changes to the approaches to control combined sewer overflow which could lead to the renegotiation of the CSO Consent Order.

*Ward's Island Plant.* On February 2, 1989, the City signed an administrative consent order, modified on July 27, 1993, which mandated various water conservation measures to reduce flow to the Wards Island plant. Contracts for the expansion of the Wards Island plant in compliance with the consent order were substantially complete in October 1999 and it is anticipated that the plant will be re-rated to 275 mgd during the next round of SPDES permit negotiations with the NYSDEC.

*Coney Island Plant.* Construction to improve the Coney Island plant, which has been operating below but near its 100 mgd permitted capacity, to achieve a capacity of 110 mgd is complete. It is anticipated that the plant capacity will be re-rated by NYSDEC.

*Harbor and Waterway Protection.* According to the most recent Harbor Survey issued by DEP, water quality in the harbor and surrounding rivers continues to improve. The Harbor Survey is an ongoing monitoring effort of the City's waterways that has been in existence since 1909. The Survey monitors 17 water quality parameters at the surface and bottom waters of 53 sampling stations in New York Harbor. Coliform bacterial counts, which are indicators of sewage pollution, have continued to decline. Since 1993, compliance with New York State total and fecal coliform standards continues to be estimated at the highest levels recorded by this program. Another key indicator of the quality of the City's surrounding waters is the measure of dissolved oxygen ("DO") in the water. DO is one of the most universal indicators of overall water quality in aquatic systems. An assessment of the adequacy of the amount of DO present is performed by comparing actual concentrations to New York State standards. These standards vary between 3 and 5 milligrams per liter (mg/l), depending on the designated best use of the waterway. DO concentrations in most areas of the Harbor have been notably higher in the 1990s than in the late 1980s. Since 1992, DO levels at many sites continue to be the highest ever recorded by this program, which has monitored some stations since 1909. These improvements are primarily in response to: continued water pollution control plant construction and upgrades throughout the harbor; the abatement of illegal discharges; improved surveillance and sewer maintenance; and increased capture of wet weather flows. The New York City Department of Health's "wet weather advisory" (no swimming within forty-eight



hours of a heavy rain) was lifted at seven of ten City public beaches in June 1993. At the remaining three City beaches, the advisory was reduced from a 48-hour ban on swimming after heavy rains to a 12-hour advisory, and water quality at the City's beaches continues to improve.

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 for nitrogen discharges from its four Upper East River wastewater treatment 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 agreed to an Administrative Consent Order with NYSDEC which requires DEP to upgrade five water pollution control plants to meet future more stringent nitrogen discharge limits. The Current Capital Plan provides approximately \$1.8 billion for the upgrade of these five plants, including the implementation of a biological nutrient removal program to further reduce nitrogen levels in order to meet the LISS and 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 Total Maximum Daily Load ("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.

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.

For a discussion of the effects of the World Trade Center attack, see “INTRODUCTORY STATEMENT—Recent Events.”

### **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 major 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 the 186 missions to the United Nations and the 96 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 negative economic growth during the latter half of calendar year 2001 through the first half of calendar year 2002 as a result of the September 11 attack and a national economic recession. The City Financial Plan assumes the City's economy will begin a slow recovery around the middle of calendar year 2002.

### **Personal Income**

Total personal income for City residents, unadjusted for the effects of inflation and the differential in living costs, has steadily increased from 1990 to 2000 (the most recent year for which City personal income data are available). From 1990 to 2000, personal income in the City averaged 5.1% growth compared to 5.4% for the nation. Total personal income is projected to rebound in 2003 after increasing in 2001 and decreasing in 2002. The following table sets forth information regarding personal income in the City from 1990 to 2000.

### Personal Income in New York City(1)

Year	Total NYC Personal Income (\$ billions)	Per Capita Personal Income NYC	Per Capita Personal Income U.S.	Per Capita NYC as a Percent of U.S.
1990	\$182.3	\$24,849	\$19,572	126.9%
1991	186.8	25,333	20,023	126.5
1992	199.7	26,875	20,960	128.2
1993	202.9	27,024	21,539	125.4
1994	208.6	27,556	22,340	123.3
1995	221.9	29,071	23,255	125.0
1996	236.6	30,739	24,270	126.7
1997	245.3	31,559	25,412	124.2
1998	263.6	33,548	26,893	124.7
1999	276.6	34,800	27,843	125.0
2000	300.8	37,541	29,469	127.5

Sources: U.S. Department of Commerce, Bureau of Economic Analysis and the Bureau of the Census.

(1) In current dollars. Personal Income is based on the place of residence and is measured from income which includes wages and salaries, other labor income, 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 435,000 new private sector jobs (an average growth rate of approximately 2%). As of April 2002, total employment in the City was approximately 3,610,300 compared to approximately 3,717,600 in April 2001, a decline of approximately 2.9%. In 2001, average annual employment in the City fell by 21,000 and is projected by the Office of Management and Budget of the City to decline by approximately 81,000 jobs in 2002 before increasing in 2003.

The table below shows the distribution of employment from 1991 to 2001.

### New York City Employment Distribution

	Average Annual Employment (in thousands)										
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Private Sector:											
Non-Manufacturing:											
Services	1,097	1,093	1,116	1,148	1,184	1,227	1,275	1,325	1,384	1,457	1,465
Wholesale and Retail Trade	565	546	538	544	555	565	578	590	610	627	619
Finance, Insurance and Real Estate	494	473	472	480	473	469	473	483	486	491	487
Transportation and Public Utilities	218	205	203	201	203	205	206	206	208	213	212
Construction	100	87	86	89	90	91	94	102	114	122	125
Total Non-Manufacturing	2,474	2,404	2,415	2,463	2,505	2,557	2,625	2,707	2,802	2,911	2,908
Manufacturing:											
Durable	77	72	71	69	68	66	64	64	63	61	58
Non-Durable	231	220	218	211	206	201	201	195	188	182	172
Total Manufacturing	308	293	289	280	274	266	265	259	251	243	230
Total Private Sector	2,782	2,697	2,704	2,744	2,779	2,823	2,890	2,967	3,053	3,154	3,139
Government	593	585	588	578	560	546	552	561	567	570	564
Total	3,375	3,282	3,291	3,322	3,339	3,369	3,442	3,528	3,621	3,723	3,702

Note: Totals may not add due to rounding.

Source: U.S. Department of Labor, Bureau of Labor Statistics.

## Sectoral Distribution of Employment and Earnings

In 2001, the City's services employment sector hit an all-time annual peak, providing approximately 1.4 million jobs and accounting for 40% of total employment. Figures on the sectoral distribution of employment in the City reflect a significant shift to non-manufacturing employment, particularly to the areas of services and finance, insurance and real estate ("FIRE"), and a shrinking manufacturing base in the City relative to the nation.

The structural shift from manufacturing to the services and FIRE sectors affects the level of earnings per employee because employee compensation in finance and related business and professional services is considerably higher than in manufacturing. Moreover, per employee earnings in the FIRE sector are significantly higher in the City than in the nation. From 1980 to 2000 the employment share for FIRE remained approximately 13% in the City while the FIRE sector earnings share for the same period rose from approximately 18% to approximately 34% in the City. This shift in employment and earnings distribution toward the FIRE sector was more pronounced in the City than in the nation overall as indicated in the table below. Due to this shift in earnings distribution, sudden or large shocks in the financial markets have a disproportionately adverse effect on the City relative to the nation.

A comparison of the City's and the nation's employment and earnings by industry is 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%	25.9%	18.5%	32.1%	29.5%
Wholesale and Retail Trade .....	18.6	22.5	16.8	23.0	15.0	16.6	9.1	15.0
Finance, Insurance and Real Estate .....	13.6	5.7	13.2	5.7	17.8	5.9	34.2	9.5
Transportation and Public Utilities .....	7.8	5.7	5.7	5.3	10.1	7.5	5.2	6.9
Contract Construction .....	2.3	4.8	3.3	5.1	2.6	6.3	2.8	6.0
Mining .....	0.0	1.1	0.0	0.4	0.3	2.1	0.0	0.9
Total Non-Manufacturing .....	69.3	59.6	78.1	70.3	71.7	56.9	83.4	67.7
Manufacturing:								
Durable .....	4.4	13.4	1.6	8.4	3.6	15.7	1.2	10.0
Non-Durable .....	10.6	9.0	4.9	5.6	4.6	8.8	4.8	5.9
Total Manufacturing .....	15.0	22.4	6.5	14.0	13.0	24.5	6.0	15.9
<b>Total Private Sector .....</b>	<b>84.3</b>	<b>82.0</b>	<b>84.7</b>	<b>84.3</b>	<b>85.1</b>	<b>81.9</b>	<b>89.8</b>	<b>84.3</b>
<b>Government(3) .....</b>	<b>15.7</b>	<b>18.0</b>	<b>15.3</b>	<b>15.7</b>	<b>14.9</b>	<b>18.1</b>	<b>10.2</b>	<b>15.7</b>

Note: Totals may not add due to rounding.

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 1810. 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 of New York City

<u>Year</u>	<u>Population Total</u>
1970 .....	7,895,563
1980 .....	7,071,639
1990 .....	7,322,155
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. 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 New York City (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(1)</u>
Total Housing Units .....	2,792	2,803	2,840	2,981	2,977	2,995	3,039
Owner Units .....	755	807	837	858	825	858	932
Owner-Occupied .....	746	795	817	829	805	834	915
Vacant for Sale .....	9	12	19	29	20	24	17
Rental Units .....	1,976	1,940	1,932	2,028	2,040	2,027	2,018
Renter-Occupied .....	1,934	1,901	1,884	1,952	1,970	1,946	1,953
Vacant for Rent .....	42	40	47	77	70	81	64
Vacant Not Available for Sale or Rent(2) .....	62	56	72	94	111	110	89

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

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

(1) Projected.

(2) 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 2003 A or B Bonds or in any way contesting or affecting the validity of the Fiscal 2003 A or B Bonds or any proceedings of the Authority, the Board or the City taken with respect to the issuance or sale of the Fiscal 2003 A or B Bonds or with respect to the Resolution or the pledge or application of any money or security provided for the payment of the Fiscal 2003 A or B 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 \$5.4 million per year from Fiscal Years 1993 through 2001 in satisfaction of tort claims relating to the operation of the System. Approximately \$2.5 million of such claims allege property damage caused by water main breaks and sewer overflows and approximately \$2.9 million of these claims relate to automobile accidents and property damage. Contract claims on water supply, sewer and water pollution control projects arise in varying amounts based on alleged change orders and related matters. Numerous lawsuits relating to construction contract claims are currently pending. While most seek under \$10 million in damages, one action seeks damages of approximately \$15 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 following paragraphs describe certain legal proceedings and claims involving the System, other than routine litigation incidental to construction, the collection of rates, fees and charges and certain other litigation arising out of alleged constitutional violations, torts, breaches of contract and other violations of law and condemnation proceedings. The ultimate outcome of the proceedings and claims described below is not currently predictable, and unfavorable determinations in certain of them could result in substantial judgments.

1. Four actions are currently pending against the City seeking damages for personal injuries and property damage in connection with an explosion of a Con Edison steam pipe which occurred in Gramercy Park on August 19, 1989. One of the actions against the City was brought by and on behalf of several Con Edison workers who sustained injuries in the explosion, one of them fatal. On March 25, 1999, the Appellate Division, First Department, issued a unanimous decision in favor of the City, granting summary judgment and dismissing the plaintiffs' complaint. The City believes that this decision should support dismissal of the other actions insofar as they assert similar claims of negligence on the part of the City.

2. Approximately 30 property damage suits and one personal injury suit are currently pending against the City seeking damages of approximately \$18 million in connection with a water main break on Fifth Avenue between 19th and 20th Streets on January 2, 1998. Pursuant to a Preliminary Conference Order dated August 2, 2000 the suits have been ordered consolidated for the purpose of joint discovery and for a joint trial on causation and the alleged negligence of the City regarding the water main break. The cases are currently in discovery.

3. 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 violates the Clean Water Act. Plaintiffs allege that water discharged from the tunnel into the Esopus Creek is frequently turbid, and that the discharge of turbid water amounts to the addition of a pollutant to the creek from a point source, requiring a SPDES permit. 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. The Second Circuit remanded the matter to the District Court for further proceedings. In April 2002, the City filed a third party complaint against the State

seeking a declaratory judgment that the State release regulations as applied to the Shandaken tunnel are preempted by the Clean Water Act. The State has denied the City's claim, asserted counterclaims, and moved to be aligned as a plaintiff. In late May 2002, the District Court granted the plaintiffs' motion for summary judgment on the issue of whether the City is liable for violations of the Clean Water Act by virtue of the alleged pollutant discharge. The Court will now proceed to consider the issue of remedy, and extensive discovery by plaintiffs and the City is underway. The City intends to vigorously defend its position in the District Court. An adverse judgment requiring remediation of the alleged pollutant discharge could result in substantial costs to the System.

### **APPROVAL OF LEGAL PROCEEDINGS**

The issuance of the Fiscal 2003 A and B Bonds is subject to the approval of legality by Nixon Peabody 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 Willkie Farr & Gallagher, 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 2003 A and B 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 2003 A and B 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 2003 A and B 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 2003 A and B Bonds ("Bondholders") that it will:

- (1) within 240 days after the end of the 2002 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 2003 A and B 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 2003 A and B 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 2003 A and B 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; FT Interactive Data, 100 William Street, New York, New York 10038 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 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 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**

Fitch, Inc. has rated the Fiscal 2003 A and B Bonds “AA”. Moody’s Investors Service, Inc. has rated the Fiscal 2003 A and B Bonds “Aa2”. Standard & Poor’s Ratings Services has rated the Fiscal 2003 A and B 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 2003 A and B Bonds.

## **UNDERWRITING**

The Series A Underwriters have jointly and severally agreed, subject to certain conditions, to purchase the Fiscal 2003 A Bonds from the Authority at an aggregate price which is \$4,082,689.29 less than the initial offering price thereof. Under a separate contract of purchase, the Series B Underwriter has agreed, subject to certain conditions, to purchase the Fiscal 2003 B Bonds at an aggregate price which is \$577,141.30 less than the initial offering price thereof. The respective obligations of the Series A Underwriters and the Series B Underwriter are subject to certain conditions precedent, and the Series A Underwriters will be obligated to purchase all of the Fiscal 2003 A Bonds if any of the Fiscal 2003 A Bonds are purchased and the Series B Underwriter will be obligated to purchase all of the Fiscal 2003 B Bonds if any of the Fiscal 2003 B Bonds are purchased. The Fiscal 2003 A and B Bonds may be offered and sold to certain dealers (including the Series A Underwriters, the Series B Underwriter and other dealers depositing the Fiscal 2003 A and B 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 Series A Underwriters have designated UBS PaineWebber Inc. as their Representative. The Muni-CPI Bonds are not being reoffered by the Series A Underwriters. The Muni-CPI Bonds are reoffered exclusively by Morgan Stanley & Co. Incorporated, in accordance with the terms and conditions contained in Appendix H hereto.

## **VERIFICATION OF MATHEMATICAL CALCULATIONS**

The Arbitrage Group, Inc., a professional firm specializing in rebate and verification calculations, has verified the accuracy of (i) the arithmetical and mathematical computations concerning the adequacy of the cash and Defeasance Obligations, including investment earnings thereon, if any, to be deposited with the Escrow Trustee together with other funds available or scheduled to be available for such purpose, to meet the anticipated redemption price, and interest on the Refunded Bonds and (ii) the mathematical computations of the yield on the Fiscal 2003 A and B Bonds. Such verification of the arithmetical accuracy of the mathematical computations is based upon information and assumptions supplied by the Authority.

## **LEGALITY FOR INVESTMENT AND DEPOSIT**

Under the Act, the Fiscal 2003 A and B 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 2003 A and B Bonds or obligations of the State, may properly and legally invest funds including capital in their control or belonging to them in such Fiscal 2003 A and B Bonds. The Act further provides that the Fiscal 2003 A and B 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**

The financial statements of the New York City Water and Sewer System as of and for the years ended June 30, 2000 and June 30, 2001 (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 EXEMPTION**

### **General**

The Internal Revenue Code of 1986 (the "Code") imposes certain requirements which must be met subsequent to the issuance and delivery of the Fiscal 2003 A and B Bonds for interest thereon to be and remain excluded from gross income for Federal income tax purposes. Noncompliance with such

requirements could cause the interest on the Fiscal 2003 A and B Bonds to be included in gross income for Federal income tax purposes retroactive to the date of issue of the Fiscal 2003 A and B Bonds, as applicable. The Authority has covenanted in the Supplemental Resolution authorizing issuance of the Fiscal 2003 A and B to comply with applicable requirements of the Code in order to maintain the exclusion of the interest on the Fiscal 2003 A and B Bonds, as applicable, from gross income for Federal income tax purposes pursuant to Section 103 of the Code.

In the opinion of Nixon Peabody LLP, Bond Counsel to the Authority, under existing law, and assuming compliance with the aforementioned covenants, interest on the Fiscal 2003 A and B Bonds is excluded from gross income for Federal income tax purposes. Under Section 103 of the Code and is not treated as a preference item in calculating the alternative minimum tax imposed under the Code with respect to individuals and corporations. Interest on the Fiscal 2003 A and B Bonds is, however, included in the adjusted current earnings of certain corporations for purposes of computing the alternative minimum tax imposed on such corporations.

Bond Counsel is also of the opinion that the interest on the Fiscal 2003 A and B Bonds is exempt, under existing law, from personal income tax of the State of New York and its political subdivisions, including The City of New York.

### **Original Issue Discount**

The difference between the principal amount of the Fiscal 2003 Series A Bonds maturing on June 15, 2011 and bearing interest at the rate of 4% per annum, June 15, 2012 and bearing interest at the rate of 4 $\frac{1}{8}$ % per annum, June 15, 2013 and bearing interest at the rate of 4 $\frac{1}{4}$ % per annum, June 15, 2014 and bearing interest at the rate of 4 $\frac{3}{8}$ % per annum, June 15, 2015 and bearing interest at the rate of 4.40% per annum, June 15, 2016 and bearing interest at the rate of 4 $\frac{1}{2}$ % per annum, June 15, 2017 and bearing interest at the rate of 4 $\frac{5}{8}$ % per annum, June 15, 2018 and bearing interest at the rate of 4.70% per annum, June 15, 2019 and bearing interest at the rate of 4 $\frac{3}{4}$ % per annum, June 15, 2028 and bearing interest at the rate of 5% per annum, June 15, 2029 and June 15, 2034 (collectively, the “Discount Bonds”) and the initial offering price to the public (excluding bond houses, brokers or similar persons or organizations acting in the capacity of underwriters or wholesalers) at which price a substantial amount of Discount Bonds of the same maturity was sold constitutes original issue discount which is excluded from gross income for federal income tax purposes to the same extent as interest on the Fiscal 2003 A Bonds. Further, the original issue discount accrues actuarially on a constant interest rate basis over the term of the Discount Bond and the basis of such Discount Bond acquired at the initial offering price by its initial purchaser will be increased by the amount of the accrued original issue discount. The accrual of original issue discount may be taken into account as an increase in the amount of tax-exempt income for purposes of determining various other tax consequences of owning Discount Bonds, even though there will not be a corresponding cash payment.

### **Original Issue Premium**

The Fiscal 2003 Series A Bonds maturing on June 15, 2003 through June 15, 2010, inclusive, June 15, 2011 and bearing interest at the rate of 5 $\frac{1}{4}$ % per annum, June 15, 2012 and bearing interest at the rate of 5 $\frac{1}{4}$ % per annum, June 15, 2013 and bearing interest at the rate of 5 $\frac{3}{8}$ % per annum, June 15, 2014 and bearing interest at the rate of 5 $\frac{3}{8}$ % per annum, June 15, 2015 and bearing interest at the rate of 5 $\frac{3}{8}$ % per annum, June 15, 2016 and bearing interest at the rate of 5 $\frac{3}{8}$ % per annum, June 15, 2017 and bearing interest at the rate of 5 $\frac{3}{8}$ % per annum, June 15, 2018 and bearing interest at the rate of 5 $\frac{3}{8}$ % per annum, June 15, 2019 and bearing interest at the rate of 5 $\frac{3}{8}$ % per annum, June 15, 2028 and bearing interest at the rate of 6% per annum and the Fiscal 2003 Series B Bonds (collectively, the “Premium Bonds”) are being offered at prices in excess of their principal amounts. Bond Counsel is of the opinion that an initial purchaser with an initial adjusted basis in a Premium Bond in excess of its principal amount will have amortizable bond premium which is not deductible from gross income for federal income tax purposes. The amount of amortizable bond premium for a taxable year is determined actuarially on a constant interest rate basis over the term of each Premium Bond based on the purchaser’s yield to maturity (or, in the case of Premium Bonds callable prior to their maturity, over the period to the call date, based on the

purchaser's yield to the call date and giving effect to any call premium). For purposes of determining gain or loss on the sale or other disposition of a Premium Bond, an initial purchaser who acquires such obligation with an amortizable bond premium is required to decrease such purchaser's adjusted basis in such Premium Bond annually by the amount of amortizable bond premium for the taxable year. The amortization of bond premium may be taken into account as a reduction in the amount of tax-exempt income for purposes of determining various other tax consequences of owning such Fiscal 2003 A and B Bonds.

### **Certain Other Federal Tax Information**

*General.* The following is a discussion of certain additional tax matters under existing statutes. It does not purport to deal with all aspects of Federal taxation that may be relevant to particular investors. Prospective investors, particularly those who may be subject to special rules, are advised to consult their own tax advisors regarding the Federal tax consequences of owning and disposing of the Fiscal 2003 A or B Bonds, as well as any tax consequences arising under the laws of any state or other taxing jurisdiction.

*Social Security and Railroad Retirement Payments.* The Code provides that interest on tax-exempt obligations is included in the calculation of modified adjusted gross income in determining whether a portion of Social Security or railroad retirement benefits received are to be included in taxable income.

*Branch Profits Tax.* The Code provides that interest on tax-exempt obligations is included in effectively connected earnings and profits for purposes of computing the branch profits tax on certain foreign corporations doing business in the United States.

*Borrowed Funds.* The Code provides that interest paid (or deemed paid) on borrowed funds used during a tax year to purchase or carry tax-exempt obligations is not deductible. In addition, under rules used by the Internal Revenue Service for determining when borrowed funds are considered used for the purpose of purchasing or carrying particular assets, the purchase of obligations may be considered to have been made with borrowed funds even though the borrowed funds are not directly traceable to the purchase of such obligations.

*Property and Casualty Insurance Companies.* The Code contains provisions relating to property and casualty insurance companies whereunder the amount of certain loss deductions otherwise allowed is reduced (in certain cases below zero) by a specified percentage of, among other things, interest on tax-exempt obligations acquired after August 7, 1986, other than certain "qualified" obligations. The Fiscal 2003 A Bonds are not "qualified" obligations for this purpose.

*S Corporations.* The Code imposes a tax on excess net passive income of certain S corporations that have subchapter C earnings and profits. Interest on tax-exempt obligations must be included in passive investment income for purposes of this tax.

*Earned Income Credit.* For any taxable year beginning after December 31, 1995, the Code denies the earned income credit to persons otherwise eligible for it if the aggregate amount of disqualified income of the taxpayer for the taxable year exceeds \$2,200, subject to adjustment for inflation for taxable years beginning after December 31, 1996. Interest on the Bonds will constitute disqualified income for this purpose.

*Changes in Federal Tax Law and Post Issuance Events.* From time to time proposals are introduced in Congress that, if enacted into law, could have an adverse impact on the potential benefits of the exclusion from gross income for Federal income tax purposes of the interest on the Fiscal 2003 A and B Bonds, and thus on the economic value of the Fiscal 2003 A and B Bonds. This could result from reductions in Federal income tax rates, changes in the structure of the Federal income tax rates, changes in the structure of the Federal income tax or its replacement with another type of tax, repeal of the exclusion of the interest on the Fiscal 2003 A and B Bonds from gross income for such purposes, or otherwise. It is not possible to predict whether any legislation having an adverse impact on the tax treatment of holders of the Fiscal 2003 A and B Bonds may be proposed or enacted.

Bond Counsel has not undertaken to advise in the future whether any events after the date of issuance of the Fiscal 2003 A and B Bonds may affect the tax status of interest on the Fiscal 2003 A and

B Bonds or the tax consequences of the ownership of the Fiscal 2003 A and B Bonds, or the interest thereon, if any action is taken with respect to the Fiscal 2003 A and B Bonds or the proceeds thereof upon the advice or approval of other counsel.

### **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 that 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.

Bond Counsel is also of the opinion that, under current law, 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 that under current law, the Authority and the Board do not qualify to be debtors 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**

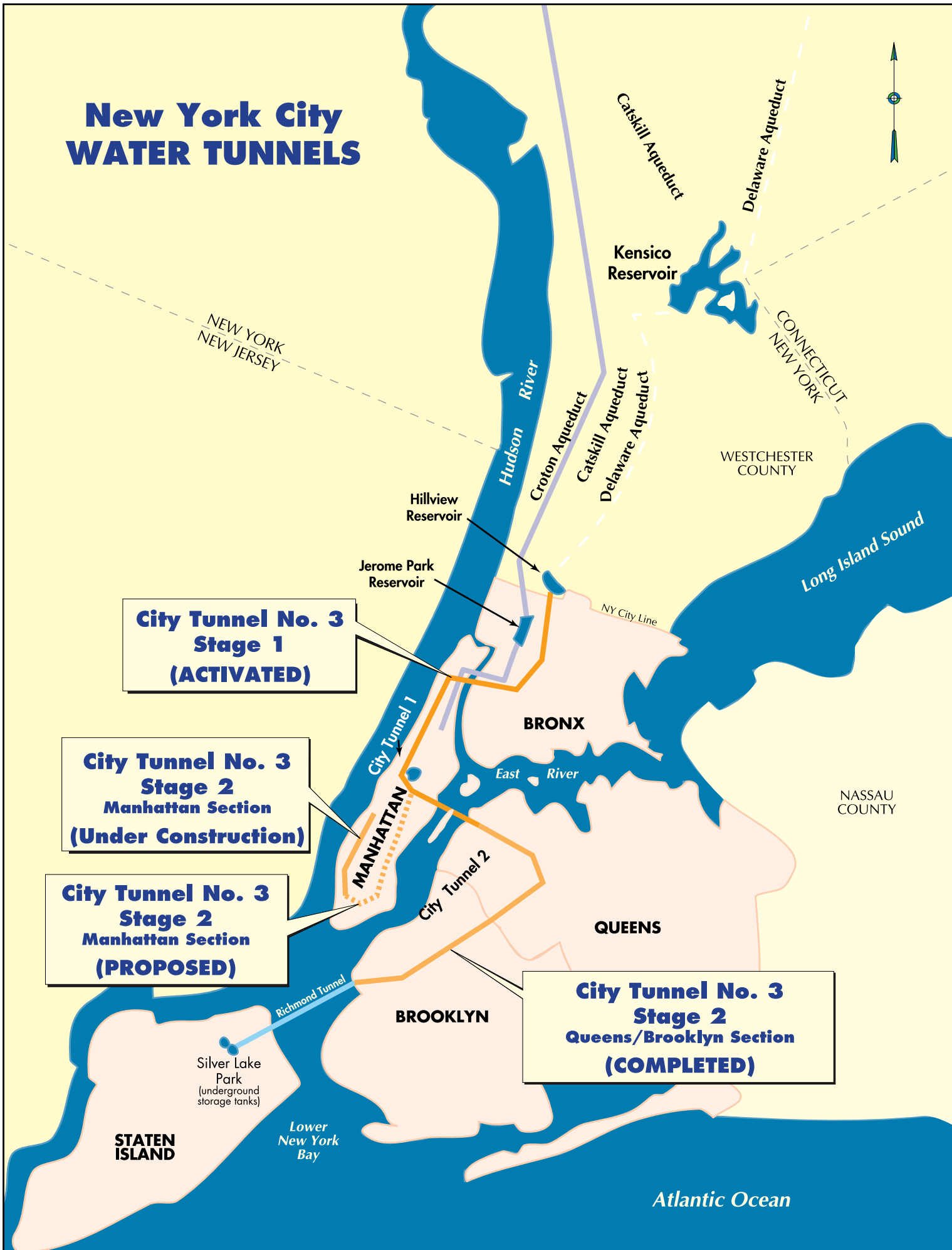
By: /s/ ALAN L. ANDERS

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Alan L. Anders  
Executive Director

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# New York City WATER TUNNELS



**City Tunnel No. 3  
Stage 1  
(ACTIVATED)**

**City Tunnel No. 3  
Stage 2  
Manhattan Section  
(Under Construction)**

**City Tunnel No. 3  
Stage 2  
Manhattan Section  
(PROPOSED)**

**City Tunnel No. 3  
Stage 2  
Queens/Brooklyn Section  
(COMPLETED)**

# New York City Water Supply System

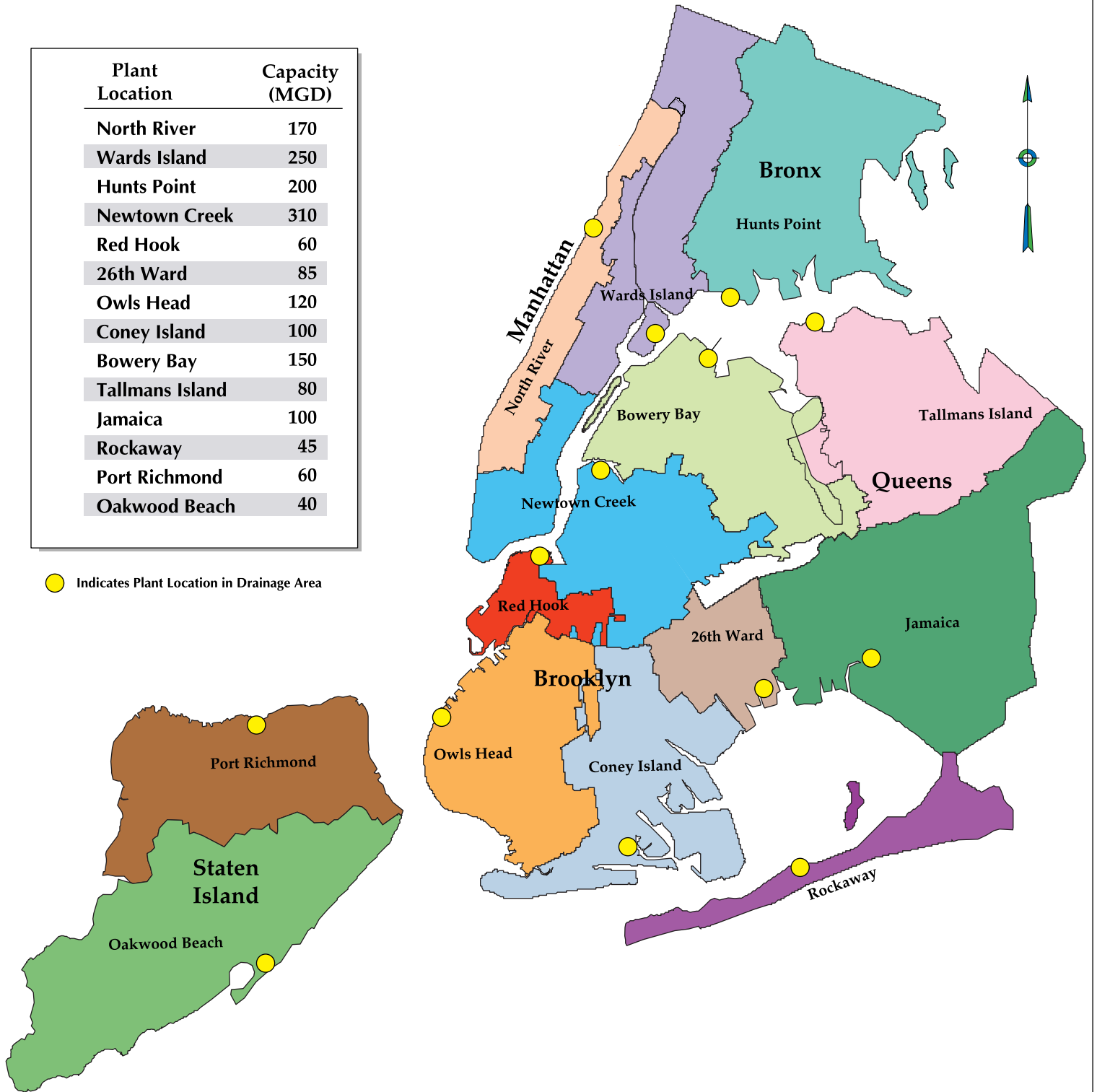




# New York City Drainage Areas and Water Pollution Control Plants

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



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

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June 20, 2002

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 2003 Series A and Fiscal 2003 Series B

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 Exhibit B, 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 2002 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 2003 Series A and the Water and Sewer System Revenue Bonds, Fiscal 2003 Series B 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 2002-2011 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**

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# BLACK & VEATCH

317 Madison Avenue  
Suite 1915  
New York, New York 10017  
Tel: 212-973-1339  
Fax: 212-973-1343

Black & Veatch New York LLP

June 20, 2002

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 2003 Series A and Fiscal 2003 Series B

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 2002 through 2007 (the "Reporting Period") in connection with the issuance by the New York City Municipal Water Finance Authority (the "Authority") of the Authority's \$741,090,000 Water and Sewer System Revenue Bonds, Fiscal 2003 Series A (the "Series A Bonds") and its \$150,000,000 Water and Sewer System Revenue Bonds, Fiscal 2003 Series B (the "Series B Bonds" and together with the Series A Bonds, the "Series A and B Bonds"). Proceeds from the Series A and B Bonds are expected to be used: (i) to pay principal and interest on approximately \$250,000,000 aggregate principal amount of the Authority's outstanding Commercial Paper Notes and to reimburse banks for amounts to be drawn under irrevocable letters of credit to pay principal and interest on \$200,000,000 aggregate principal amount of the Authority's Outstanding Commercial Paper Notes, (ii) to refund certain outstanding Authority Bonds (iii) to pay certain costs of issuance and (iv) to fund certain reserves. In conducting our analysis we have prepared the following tables which are included in this Appendix B 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 Capital Improvement Program as modified by the Current Capital Plan (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, 2007 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 Appendix B 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 Appendix B, 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**

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## 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** shall mean 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** shall mean, 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** shall mean (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** shall mean one or more of the following: (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** shall mean 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** shall mean and 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** shall mean (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** shall mean 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 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), 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 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, as amended. (*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 general obligation bonds of the City heretofore or hereafter 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 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 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 8.1 of the Lease and (ii) the amount of the payments described in Section 8.2 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 Principal Installments or Redemption Price of and any interest on the Bonds, in accordance with their terms and the provisions of the Resolution: (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 General 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; subject only to the provisions of the Resolution and the Agreement permitting the application of such amounts for or to the

purposes and on the terms and conditions therein set forth. It is the intention of the Authority that, to the fullest extent permitted by law, such pledge shall be valid and binding from the time when it is made; that the Revenues, moneys, securities and other funds so pledged, and then or thereafter received by the Authority, shall immediately be subject to the lien of such pledge; and that the obligation to perform the contractual provisions therein contained shall have priority over any or all other obligations and liabilities of the Authority and shall be valid and binding 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.

As further security for the payment of 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 claim, collect or receive from the Board, all Revenues thereunder, (ii) to bring actions and proceedings thereunder for enforcement of such right of collection, 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 C 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 (th) 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, as 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 this 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 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 or the Surplus 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 Depositary 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 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 the initial Series of Bonds under the Resolution 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 (e) above and the Certificate of the Authority delivered pursuant to paragraph (f) 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 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 supersede 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 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 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*)

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**FINANCIAL STATEMENTS**

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**FISCAL YEAR 2000 AND 2001 AUDITED FINANCIAL STATEMENTS OF  
THE NEW YORK CITY WATER AND SEWER SYSTEM**

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345 Park Avenue  
New York, NY 10154

## Report of Independent Auditors

**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"), as of June 30, 2001 and 2000, 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 financial statements based on our audits.

We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatements. An audit includes examining, on a test basis, evidence supporting the amounts and the 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 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, 2001 and 2000, and the results of its operations and changes in net assets and its cash flows for the years then ended in conformity with accounting principles generally accepted in the United States of America.

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

As described in Note 2 to the financial statements, in fiscal year 2001, the System adopted Governmental Accounting Standards Board ("GASB") Statement No. 34, Basic Financial Statements- and Management's Discussion and Analysis-for State and Local Governments, GASB Statement No. 37, Basic Financial Statements-and Management's Discussion and Analysis -for State and Local Governments: Omnibus, and GASB Statement No. 38, Certain Financial Statement Note Disclosures.

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

**KPMG LLP**

October 30, 2001  
New York, New York

D-1



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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, 2001 and 2000.

The basic financial statements of the System, which include the balance sheets, the statements of revenues, expenses and changes in net assets and the cash flow statements, are presented to display information about the reporting entity as a whole, in accordance with GASB No. 34. 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 2001, 2000 and 1999:

IN THOUSANDS	2001	2000	1999
Revenues:			
Water supply and distribution	\$ 626,364	610,949	594,794
Sewer collection and treatment	898,568	876,455	844,804
Other operating revenues	96,991	93,194	85,903
Total operating revenues	1,621,923	1,580,598	1,526,501
Investment income	84,534	70,478	81,465
Total revenues	1,706,457	1,651,076	1,607,966
Expenses:			
Operations and maintenance	842,401	801,255	777,652
Bad debt expense	122,785	89,062	103,960
Administration and general	11,215	10,092	10,879
Depreciation and amortization	318,709	347,055	380,023
Interest expense	527,914	492,747	476,675
Total expenses	1,823,024	1,740,211	1,749,189
Capital contributions	1,748	5,637	7,389
Change in net assets	(114,819)	(83,498)	(133,834)
Net Assets – beginning	4,786,702	4,870,200	5,004,034
Net Assets – ending	\$ 4,671,883	4,786,702	4,870,200

2001-2000

Total operating revenues increased by 2.6%, although water rates increased by 1% and water consumption decreased by 1.4%. The System imposed a surcharge on certain customers that did not allow the installation of

water meters. Surcharge collections of \$28 million were included in operating revenues in 2001. Investment income increased by \$14 million due to increased funds available for investment and the absence of an arbitrage rebate payment included in 2000 of \$3.7 million which is an offset against investment income.

Total operations and maintenance expenses increased by \$41.1 million or 5.1%. The System accrued a liability of \$7.5 million for possible Environmental Protection Agency penalties for failure to determine a site for a filtration plant for the Croton reservoir. The System has also incurred additional expenses for taxes on upstate properties acquired by the System to protect the watershed. Other increases in operations and maintenance expenses included additional costs for heat, light and power throughout the system, and costs for the purchase of chemicals for the treatment of nitrogen in sewage disposal. Also the rental payment to New York City by the New York City Water Board increased by nearly \$7 million due to increased debt service payments by the City.

Due to a decline in the cash collections from current billings, bad debt expense increased by \$33 million or 38%. Depreciation and amortization decreased by \$29 million due to the inclusion of multiple years' catch-up depreciation in 2000 for certain utility plant. Interest expense increased by \$35 million or 7%. The timing of the closing of the 2000 series B issue in late 2000, plus the early year closing (July 2000) of 2001 Series A, resulted in additional interest expense for those issues alone of \$25 million.

2000-1999

Water rates were increased in fiscal year 2000 by 4%, and water consumption increased by 1.3%, however, operating revenues increased by 3.5%. Changes in water consumption are generally reflected in income in a subsequent year, since meters are read and billed quarterly. Investment income declined by 13.5% due primarily to a decrease in construction funds available for investment and a decline in short-term interest rates.

MANAGEMENT'S DISCUSSION AND ANALYSIS CONTINUED

Total operations and maintenance expenses increased by \$23 million or 3%. The largest component of the increase was salary expense, which increased by nearly 8% or \$17 million due to a 4% increase in base wages, and additional employees in billing and collection. The Bad debt expense decreased from \$104 million to \$89 million. Depreciation and amortization expense declined by \$33 million due to the inclusion of multiple years' catch-up depreciation of the third water tunnel in 1999. Interest expense increased by \$13 million, which is the interest expense on the \$1 billion in new issues in 2000.

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

IN THOUSANDS	2001	2000	1999
Current unrestricted assets	\$ 621,182	586,342	603,982
Capital assets	13,375,790	12,823,646	12,405,538
Current restricted assets	1,017,852	974,660	1,010,876
<b>Total assets</b>	<b>15,014,824</b>	<b>14,384,648</b>	<b>14,020,396</b>
Long-term liabilities	9,345,805	8,875,569	8,049,095
Current liabilities	997,136	722,377	1,101,101
Total liabilities	10,342,941	9,597,946	9,150,196
Net assets:			
Invested in capital assets, net of related debt	3,453,709	3,692,419	3,711,928
Restricted for debt service	1,057,852	974,660	1,010,876
Unrestricted	160,322	119,623	147,396
Total net assets	4,671,883	4,786,702	4,870,200
<b>Total liabilities and net assets</b>	<b>\$ 15,014,824</b>	<b>14,384,648</b>	<b>14,020,396</b>

2001-2000

The increase in current liabilities is due to the issuance of \$300 million of commercial paper at the end of fiscal 2001. The New York City Municipal Water Finance Authority has a total commercial paper program of \$600 million. The commercial paper is issued, and periodically paid down out of the proceeds from the sale of long-term debt and is then reissued as needed. The decrease in net assets invested in capital assets, net of related debt, is also due to the increase in commercial paper outstanding at year end as well as an increase in long-term debt.

Net assets restricted for debt service in 2001 included \$24.8 million additional debt service reserve funds, an \$82.3 million escrow fund for the crossover refunding of 2001 Series E. Net assets restricted for capital is variable depending upon the timing of the issuance of new debt and of expenditures of debt proceeds for capital projects.

2000-1999

Current liabilities: At June 30, 1999 the total commercial paper program of \$600 million was outstanding, as compared with June 30, 2000, when only \$200 million was outstanding. Net assets restricted for debt service increased \$40 million from additions to debt service reserve funds and by \$92 million from System surplus in 1999. Net assets restricted for capital decreased due to the timing of the issuance of commercial paper and of expenditures of proceeds for capital projects.

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	2001	2000	1999
Utility plant construction	\$ 3,580,396	3,196,302	2,855,474
Buildings	5,677	5,677	5,677
Equipment	211,944	129,253	129,253
Water supply and waste water treatment systems	7,786,471	6,840,021	6,643,497
Water distribution and sewage collection systems	6,349,065	6,955,100	6,758,577
Total	17,949,491	17,126,353	16,392,478
Less accumulated depreciation	4,573,701	4,302,707	3,986,941
<b>Total, net</b>	<b>\$ 13,375,790</b>	<b>12,823,646</b>	<b>12,405,537</b>

The net increase in the System's capital assets during fiscal year 2001 was \$439 million or 3.1%. The net increase in 2000 was \$393 million or 2.9%. Capital asset additions for 2001 were \$1,265 million and in 2000 \$1,115 million.

DEBT ADMINISTRATION

The New York City Municipal Water Finance Authority issues debt to cover the capital improvements of 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 EFC to retire outstanding commercial paper. The Authority also issues refunding bonds to refinance higher coupon debt.

At June 30, 2001, the total outstanding debt of the system was \$10.6 billion, of which \$500 million was commercial paper. The remaining \$10.1 billion consisted of variable and fixed rate bonds and notes maturing in varying installments through 2033. The total outstanding long-term debt at June 30, 2001 was as follows:

ISSUE DATE	IN THOUSANDS
2001	\$ 1,174,976
2000	807,830
1999	810,866
1998	1,913,271
1997 and prior	5,414,905
<b>Total long-term debt</b>	<b>\$ 10,121,848</b>

In fiscal year 2001, the Authority issued \$1,084,260,000 of water and sewer revenue bonds directly to the public, including \$ 643,995,000 of advance and crossover refundings and \$440,265,000 in long-term financing. The Authority also received \$99,546,254 million in a Clean Water State Revolving Fund (SRF) direct loan from EFC. These proceeds financed capital improvements to New York City's water and sewer system.

Highlights of the financing program in 2001 included historically low interest costs on fixed-rate borrowing, the first Authority bond issue using a crossover refunding structure and an upgrade in the credit rating by Moody's Investor Service to Aa2, bringing the Authority's credit rating by all three major credit rating agencies in line.

The Authority's first debt issuance in Fiscal 2001 was the November 20, 2000 issuance of \$328,225,000 of Series A fixed-rated uninsured, tax-exempt bonds. The true interest cost on the financing was approximately 5.7% with a transaction structure that included a single-term bond maturing in 2033.

The November issuance was followed shortly thereafter on December 8, 2000 with an advance refunding of \$60 million. The \$68,675,000 2001 Series B refunding bonds included serial bonds from 2002 through 2020 and a single term bond maturing in 2031. The true interest cost was approximately 5.4% with the term bond maturing in 2031.

On December 14, 2000, the Authority received a Clean Water State Revolving Fund (SRF) 20-year direct loan from EFC for \$99,546,254 at a subsidized interest rate of 2.741%. EFC offered this bridge loan in anticipation of the eventual restructuring of the loan with bonds using the newly authorized 30 year amortization structure which was approved in 2001, rather than the 20 year amortization structure previously required for SRF bonds.

In May, the Authority sold \$112,040,000 of fiscal 2001 Series C new money, fixed rate, tax exempt bonds, concurrently with \$305,085,000 of fiscal 2001 Series D fixed rate advance refunding bonds, \$86,105,000 of fiscal 2001 Series E crossover refunding bonds and \$184,130,000 of fiscal 2001 Series F adjustable rate current refunding bonds. The advance refunding bonds (Series D and E) defeased a portion of the fiscal 1994 Series B, 1996 fiscal Series A, fiscal 1996 Series B and fiscal 2000 Series B bonds. The current refunding (Series F) defeased a portion of the fixed rate fiscal 1992 Series A bonds with adjustable rate bonds.

The adjustable rate Series F bonds are initially being remarketed in two modes: \$100,000,000 (Series F-1) in daily mode and \$84,130,000 (Series F-2) in weekly mode.

In February 2001, the Authority's General Resolution bonds were upgraded to Aa2 from Aa3 by Moody's Investors Service, who recognized the Authority's legal



NEW YORK CITY WATER AND SEWER SYSTEM  
MANAGEMENT'S DISCUSSION AND ANALYSIS CONTINUED

protections, similar to operating company securitizations, and the capital program. The rating upgrade on the Authority's outstanding debt reflects strong bondholder protections and the ongoing recognition of the credit as an asset backed security. This rating upgrade also brings the view of the three major rating agencies closely in line. The Authority is rated AA by Standard and Poor's and Fitch, Inc.

Additionally, in June 2001, Moody's Investor's Service and Fitch, Inc. raised the rating on the EFC bonds issued for eligible Authority State Revolving Fund projects, to Aaa and AAA, respectively, the highest rating category. Standard and Poor's subsequently upgraded the EFC rating to AAA in October 2001. The bonds which the Authority places with EFC are an element of security for the EFC bonds issued to investors, but are unrated Second Resolution bonds of the Authority.

The total bonds and notes payable by the Authority are detailed in footnote number 9 of the notes to the financial statements.

ECONOMIC FACTORS AND NEXT YEARS RATES AND  
WORLD TRADE CENTER ATTACK

On September 11, 2001, two hijacked commercial passenger jetliners flew into the World Trade Center, resulting in its destruction, damage to other buildings in the vicinity and a substantial loss of life. The disaster resulted in several water main breaks. However, water and sewer service was continuously provided to most of lower Manhattan and was restored to all buildings near the disaster as they otherwise were able to be reoccupied.

It is estimated that \$5 million in damage has been sustained by the System although the exact amount of damage can only be ascertained once debris has been removed and access to certain water and sewer mains is secured. In response to the attacks on the World Trade Center, the System has implemented additional security measures to protect the water supply structures and facilities. The operation and maintenance costs of the System may increase as a result. The expected increase should be less than 2% of annual System expenses.

The revenues of the System from user payments will be impacted by the loss of payments from the World Trade Center. In addition, other buildings in the downtown area have been temporarily vacant for a period of time. Businesses which have relocated to facilities outside of the City may not elect to return to their former locations. It is also expected that hotels, restaurants and other travel and tourism customers will utilize less water over the short-term. At the present time, the estimated reduction in System revenues from the above conditions is expected to be less than 1% of annual System revenues.

The potential increases in cost and declines in revenues can be accommodated by the System in fiscal year 2002 without adjustment to current rates and charges.

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, 59 Maiden Lane, New York, NY 10038.

NEW YORK CITY WATER AND SEWER SYSTEM

**BALANCE SHEETS**

JUNE 30, 2001 AND 2000

IN THOUSANDS

	2001	2000
<b>ASSETS</b>		
Utility plant in service, less accumulated depreciation of \$4,573,701 in 2001 and \$4,302,707 in 2000 (notes 2, 5 and 7)	\$ 9,795,394	9,627,344
Utility plant construction	3,580,396	3,196,302
	13,375,790	12,823,646
Current assets:		
Unrestricted cash and cash equivalents (note 6)	7,419	8,734
Accounts receivable:		
Billed, less allowance for uncollectible water and sewer receivables of \$313,318 in 2001 and \$293,888 in 2000	341,417	316,800
Unbilled	106,600	105,000
Receivable from the City (note 8)	23,458	47,140
Prepaid construction	40,000	—
Accrued interest receivable	4	—
Other	4,071	5,751
Total current unrestricted assets	522,969	483,425
Restricted assets (notes 6 and 10):		
Cash and cash equivalents	894,143	874,851
Investments	123,377	98,333
Accrued interest receivable	332	1,476
Total current restricted assets	1,017,852	974,660
Total current assets	1,540,821	1,458,085
Long-term deferred bond and financing expenses	98,213	102,917
<b>Total assets</b>	<b>\$ 15,014,824</b>	<b>14,384,648</b>
<b>LIABILITIES AND NET ASSETS</b>		
Long-term liabilities:		
Bonds and notes payable, less current portion (note 9)	\$ 9,947,359	9,417,797
Net discount on bonds and notes payable	(372,409)	(331,840)
Deferred bond refunding costs (note 2)	(229,145)	(210,388)
Total long-term liabilities	9,345,805	8,875,569
Current liabilities:		
Accounts payable and accrued expenses	24,216	27,718
Revenues received in advance	76,562	67,798
Current portion of bonds and notes payable (note 9)	674,489	358,575
Payable to the City (note 8)	205,456	252,911
Refunds payable to customers	16,413	15,375
Total current liabilities	997,136	722,377
Total liabilities	10,342,941	9,597,946
Net Assets:		
Invested in capital assets, net of related debt	3,493,709	3,692,419
Restricted for debt service	1,017,852	974,660
Unrestricted	160,322	119,623
Total net assets	4,671,883	4,786,702
<b>Total liabilities and net assets</b>	<b>\$ 15,014,824</b>	<b>14,384,648</b>

See accompanying notes to financial statements.

NEW YORK CITY WATER AND SEWER SYSTEM

STATEMENTS OF REVENUES, EXPENSES AND CHANGES IN NET ASSETS  
YEARS ENDED JUNE 30, 2001 AND 2000

IN THOUSANDS

	2001	2000
Operating revenues:		
Water supply and distribution	\$ 626,364	610,949
Sewer collection and treatment	898,568	876,455
Other operating revenues	96,991	93,194
Total operating revenues	1,621,923	1,580,598
Operating expenses:		
Operation and maintenance (notes 3 and 7)	842,401	801,255
Bad debt expense	122,785	89,062
Administration and general	11,215	10,092
Total operating expenses	976,401	900,409
Excess of operating revenues over operating expenses before depreciation and amortization	645,522	680,189
Depreciation and amortization	318,709	347,055
Operating income	326,813	333,134
Nonoperating revenues (expenses):		
Interest expense	(527,914)	(492,747)
Investment income	84,534	70,478
Net loss before contributed capital	(116,567)	(89,135)
Contributed capital	1,748	5,637
Change in net assets	(114,819)	(83,498)
Net assets at beginning of year	4,786,702	4,870,200
Net assets at end of year	\$ 4,671,883	4,786,702

See accompanying notes to financial statements.

NEW YORK CITY WATER AND SEWER SYSTEM

**STATEMENTS OF CASH FLOWS**  
YEARS ENDED JUNE 30, 2001 AND 2000

IN THOUSANDS

	2001	2000	
<b>Cash flows from operating activities:</b>			
Receipts from customers	\$ 1,483,020	1,447,504	
Payments for operations & maintenance	(819,015)	(777,025)	
Payments for administration	(14,764)	(10,018)	
Net cash provided by operating activities	649,241	660,461	
<b>Cash flows from capital and related financing activities:</b>			
Proceeds from issuing bonds, notes and other borrowings, net of issuance costs	1,909,079	1,515,293	
Acquisition and construction of capital assets	(930,623)	(726,941)	
Repayments of bonds, notes and other borrowings	(1,167,056)	(1,112,623)	
Interest paid on bonds, notes and other borrowings	(503,344)	(477,120)	
Net cash used by capital and related financing activities	(691,944)	(801,391)	
<b>Cash flows from investing activities:</b>			
Proceeds from sales and maturities of investments	98,333	503,019	
Purchases of investments	(123,377)	(98,333)	
Interest on investments	85,724	74,468	
Net cash provided by investing activities	60,680	479,154	
Net increase in cash and cash equivalents	17,977	338,224	
Cash and cash equivalents, beginning of year	883,585	545,361	
<b>Cash and cash equivalents, end of year</b>	<b>\$ 901,562</b>	<b>883,585</b>	
<b>RECONCILIATION OF OPERATING INCOME TO NET CASH PROVIDED BY OPERATING ACTIVITIES:</b>			
Operating income	\$ 326,813	333,134	
Adjustments to reconcile operating income to net cash provided by operating activities:			
Depreciation and amortization	318,709	347,055	
Bad debt expense	122,785	89,062	
Changes in net assets and liabilities:			
Receivables, net	(149,002)	(119,807)	
Accounts payable	(3,548)	73	
Receivable from the City	23,682	22,533	
Refunds payable	1,038	875	
Revenues received in advance	8,764	(12,464)	
<b>Net cash provided by operating activities</b>	<b>\$ 649,241</b>	<b>660,461</b>	
<b>ASSETS</b>			
	<b>UNRESTRICTED</b>	<b>RESTRICTED</b>	<b>TOTAL</b>
Cash and cash equivalents - beginning	\$ 8,734	874,851	883,585
Net increase	(1,315)	19,292	17,977
Cash and cash equivalents - ending	\$ 7,419	894,143	901,562

The following are the noncash capital and related financing activities:

Interest expense includes the amortization of premium and discount in the amount of \$12,672 in 2001 and \$7,429 in 2000.

Capital expenditures in the amount of \$205,456 and \$252,922 had been incurred but not paid at June 30, 2001 and 2000.

The Board received capital assets of \$1,748 in 2001 and \$5,637 in 2000 which represent capital contributed by the City.

See accompanying notes to financial statements.

NEW YORK CITY WATER AND SEWER SYSTEM  
NOTES TO FINANCIAL STATEMENTS  
JUNE 30, 2001 AND 2000

(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

During the year ended June 30, 2001, the System elected to adopt the provisions of GASB Statement No. 34, *Basic Financial Statements - and Management's 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* and GASB Statement No. 38, *Certain Financial Statement Disclosures*.

Statement No. 34 requires as supplementary information Management's Discussion and Analysis, which includes an analytical overview of the System's financial activities.

Statement No. 38 requires certain disclosures to be made in the notes to the financial statements concurrent with the implementation of Statement No. 34. While this Statement did not affect amounts reported in the financial statements of the System, certain note disclosures have been added or amended including future debt service and lease obligations in five year increments, short-term obligations, and interest rates.

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 a maturity 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 in Service*

Utility plant in service acquired through purchase or internal construction is recorded at cost, net of retirements. Contributed utility plant in service 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 waste water 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 in service.

*(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 based 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 expenses.

*(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 2000 figures have been made in order to conform to the 2001 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.

*(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.

## NOTES TO FINANCIAL STATEMENTS CONTINUED

## (4) UTILITY PLANT

The following is a summary of utility plant activity for the fiscal years ended June 30, 2001 and 2000:

IN THOUSANDS	BALANCE JUNE 30, 1999			BALANCE JUNE 30, 2000			BALANCE JUNE 30, 2001
		ADDITIONS	DELETIONS		ADDITIONS	DELETIONS	
Utility plant construction	\$ 2,855,474	1,037,535	696,707	3,196,302	1,097,827	713,733	3,580,396
Buildings	5,677	—	—	5,677	15,938	—	21,615
Equipment	129,257	54,882	392	183,747	36,880	8,683	211,944
Water supply and wastewater treatment systems	7,364,539	238,204	1,084	7,601,659	186,122	1,310	7,786,471
Water distribution and sewage collection systems	6,037,531	111,189	9,752	6,138,968	221,882	11,785	6,349,065
Total	16,392,478	1,441,810	707,935	17,126,353	1,558,649	735,511	17,949,491
Less accumulated depreciation	3,986,941	326,601	10,835	4,302,707	292,772	21,778	4,573,701
Total, net	\$ 12,405,537	1,115,209	697,100	12,823,646	1,265,877	713,733	13,375,790

## (5) NET ASSETS

At June 30, 2001 and 2000, the Authority had a net asset deficit of \$3,806 million and \$3,369 million, respectively, which amount is less than the \$8,478 million and \$8,155 million total net assets of the Board at June 30, 2001 and 2000, respectively.

## (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.

Investments and deposits held by the System at June 30, 2001 and 2000 comprised:

IN THOUSANDS	2001	2000
Unrestricted cash, cash equivalents (plus accrued interest)	\$ 7,423	8,734
Restricted cash, cash equivalents and investments (plus accrued interest)	1,017,852	974,660
	<b>\$ 1,025,275</b>	<b>983,394</b>
This amount is comprised of:		
Carrying amount of deposits (including CDs)	\$ 6,255	4,803
Investments (plus accrued interest)	1,019,020	978,591
	<b>\$ 1,025,275</b>	<b>983,394</b>

## 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 and \$35.6 thousand on deposit at June 30, 2001 and 2000, respectively, which were covered by Federal depository insurance.

INVESTMENTS

The System's investments, which are evidenced by securities that exist in physical or book entry form, are categorized to give an indication of the level of risk assumed by the System at year end. Category 1, the lowest risk, includes investments that are insured or registered, or for which the securities are held by the System or its agent in the System's name. Category 2 includes uninsured and unregistered investments for which the securities are held by the counterparty's trust department or agent in the System's name. Category 3, the highest risk, includes uninsured and unregistered investments for which the securities are held by the counterparty, or by its trust department or agent but not in the System's name.

Investments (inclusive of certain investments reported as cash equivalents) held by the System at June 30, 2001 and 2000 were classified as Category 1 investments and non-categorized investments, and are comprised of:

IN THOUSANDS	2001*		2000*	
	COST	FAIR VALUE	COST	FAIR VALUE
Categorized:				
U.S. Treasury securities	\$ 49,318	49,360	—	—
Federal agency issues	722,793	722,998	813,710	814,965
Repurchase agreements	123,559	123,598	122,602	122,822
	<b>895,670</b>	<b>895,956</b>	<b>936,312</b>	<b>937,787</b>
Non-categorized:**				
Guaranteed investment contracts	123,013	123,064	40,803	40,803
	<b>\$ 1,018,683</b>	<b>1,019,020</b>	<b>977,115</b>	<b>978,590</b>

\* Includes \$895,307 at cost and \$895,579 at market (2001) and \$878,783 at cost and \$879,345 at market (2000) of investments reported as cash equivalents.

\*\* These investments are not categorized because they are not evidenced by securities that exist in physical or book entry form.

(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.



NEW YORK CITY WATER AND SEWER SYSTEM  
**NOTES TO FINANCIAL STATEMENTS** CONTINUED

A summary of operation and maintenance expenses at June 30, 2001 and 2000 is as follows:

IN THOUSANDS	2001	2000
Water transmission and distribution	\$ 260,478	237,847
Sewer collection systems	318,502	307,199
City agency support cost	33,508	32,967
Fringe benefits	65,048	64,923
Judgments and claims	7,687	7,844
	685,223	650,780
Rental payments to the City	157,178	150,475
	<b>\$ 842,401</b>	<b>801,255</b>

(8) PAYABLE TO AND RECEIVABLE FROM THE CITY  
 As of June 30, 2001 and 2000, all construction work in progress 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, 2001 and 2000, the System had a receivable from the City for overpayment of operations and maintenance expenses.

(9) BONDS AND NOTES PAYABLE

The Authority issues revenue bonds to finance a portion of the costs of the capital renovation and improvements program to the System, to fund certain reserves, to pay costs of issuance and to advance refund certain outstanding principal amounts of bonds.

Bonds, notes payable, and commercial paper comprise the following for the year ended June 30, 2001:

IN THOUSANDS	BALANCE AT JUNE 30, 2000	ISSUED	RETIRED	BALANCE AT JUNE 30, 2001
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 Bonds maturing in 2017	13,255	20	-	13,275
1989 Fiscal Series B - 5.75% to 7.50% Serial and Term Bonds maturing in 2001	1,955	-	1,955	-
1990 Fiscal Series B - 7.30% to 7.50% Serial and Term Bonds maturing in varying installments through 2012	125,680	-	6,855	118,825
1991 Fiscal Series B - 6.00% to 7.25% Serial and Term Bonds maturing in varying installments through 2012	38,950	-	13,035	25,915
1992 Fiscal Series A - 5.30% to 7.10% Serial and Term Bonds maturing in varying installments through 2021	180,240	-	180,240	-
1992 Fiscal Series B - 6.66% to 6.86% Serial and Term Bonds maturing in varying installments through 2014	43,423	-	13,766	29,657
1993 Fiscal Series A - 5.70% to 6.15% Serial, Term, and Capital Appreciation Bonds maturing in varying installments through 2020	1,038,100	-	15,880	1,022,220
1993 Fiscal Series C - Adjustable Rate Term Bonds maturing 2022	100,000	-	-	100,000
1994 Fiscal Series 1 - 3.00% to 6.00% Serial and Term Bonds maturing in varying installments through 2015	498,724	-	24,837	473,887
1994 Fiscal Series B - 4.875% to 5.625% Fixed Rate Bonds maturing in varying installments through 2019	604,650	-	31,645	573,005
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

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IN THOUSANDS	BALANCE AT JUNE 30, 2000	ISSUED	RETIRED	BALANCE AT JUNE 30, 2001
1994 Fiscal Series F - 5.20% to 5.75% Serial Bonds maturing in varying installments through 2023	212,275	-	710	211,565
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 and Term Bonds maturing in varying installments through 2016	50,924	-	4,479	46,445
1996 Fiscal Series 1 - 4.3% to 6.00% Serial Bonds maturing in varying installments through 2017	97,675	-	4,295	93,380
1996 Fiscal Series 2 - 2.95% to 5.20% Serial Bonds maturing in varying installments through 2017	24,750	-	1,170	23,580
1996 Fiscal Series 3 - 3.60% to 5.85% Serial Bonds maturing in varying installments through 2017	38,740	-	1,535	37,205
1996 Fiscal Series A - 4.90% to 5.75% Serial Bonds maturing in varying installments through 2023	229,330	-	75,225	154,105
1996 Fiscal Series B - 5.75% to 5.875% Serial Bonds maturing in varying installments through 2026	520,100	-	29,075	491,025
1996 Fiscal Series C - 4.70% to 5.75% Serial Bonds maturing in varying installments through 2017	77,605	-	305	77,300
1997 Fiscal Series A - 4.85% to 5.75% Serial Bonds maturing in varying installments through 2026	365,125	-	-	365,125
1997 Fiscal Series B - 5.50% 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	40,985	-	1,550	39,435
1998 Fiscal Series 2 - 4.00% to 6.00% Serial Bonds maturing in varying installments through 2019	105,031	-	3,843	101,188
1998 Fiscal Series 3 - 4.30% to 6.00% Serial Bonds maturing in varying installments through 2016	450,035	-	-	450,035
1998 Fiscal Series 4 - 3.60% to 5.20% Serial Bonds maturing in varying installments through 2018	14,535	-	655	13,880
1998 Fiscal Series 5 - 4.61% to 5.10% Serial Bonds maturing in varying installments through 2019	82,505	-	3,120	79,385
1998 Fiscal Series 6 - 4.827% to 5.125% Serial Bonds maturing in varying installments through 2019	18,022	-	659	17,363
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 - 4.10% to 5.125% Serial Bonds in varying installments through 2021	87,835	-	250	87,585
1998 Fiscal Series D - 4.25% to 5.00% Serial Bonds maturing in varying installments through 2025	394,135	-	3,110	391,025
1999 Fiscal Series 1 - 4.00% to 5.25% Serial Bonds maturing in varying installments through 2020	115,121	38,000	5,652	147,469
1999 Fiscal Series 2 - 4.00% to 5.25% Serial Bonds maturing in varying installments through 2020	157,831	-	41,770	116,061
1999 Fiscal Series A - 4.75% to 5.00% Serial Bonds maturing in varying installments through 2031	301,470	-	-	301,470

Continued on next page

NEW YORK CITY WATER AND SEWER SYSTEM

NOTES TO FINANCIAL STATEMENTS CONTINUED

IN THOUSANDS	BALANCE AT JUNE 30, 2000	ISSUED	RETIRED	BALANCE AT JUNE 30, 2001
1999 Fiscal Series B - 3.80% to 5.25% Serial and Capital Appreciation Bonds maturing in varying installments through 2020	245,865	-	-	245,865
1999 Fiscal Series C - 5.00% to 5.75% Serial Bonds maturing in varying installments through 2001	4,625	-	4,625	-
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	323,730	-	191,865	131,865
2000 Fiscal Series C - Adjustable Rate Term Bonds maturing in 2033	107,500	-	-	107,500
2000 Fiscal Series 1 - 2.56% Direct Loan maturing in 2023	285,856	-	5,010	280,846
2000 Fiscal Series 2 - 3.80% to 5.96% Serial Bonds maturing in varying installments through 2032	12,289	-	405	11,884
2001 Fiscal Series A - 5.50% Term Bonds maturing in varying Installments 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	-	68,675	-	68,675
2001 Fiscal Series C - 5.125% Term Bonds maturing in varying installments through 2033	-	112,040	-	112,040
2001 Fiscal Series D - 4.0% to 5.5% Serial, Term and Capital Appreciation Bonds maturing in varying installments through 2025	-	305,085	7,895	297,190
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	-	184,130	-	184,130
2001 Fiscal Series 1 - 2.74% Serial and Term Bonds maturing in varying installments through 2022	-	99,546	935	98,611
Commercial Paper Series 1 - Variable Rate, Short-term Rolling Maturity Backed by L.O.C	-	400,000	300,000	100,000
Commercial Paper Series 3 - Variable Rate, Short-term Rolling Maturity Backed by L.O.C.	75,000	-	-	75,000
Commercial Paper Series 4 - Variable Rate, Short-term Rolling Maturity Backed by L.O.C.	125,000	98,300	98,300	125,000
Commercial Paper Series 5 - Variable Rate, Short-term Rolling Maturity Backed by L.O.C.	-	300,000	100,000	200,000
Total debt payable	9,776,372	2,020,126	1,174,650	10,621,848
Current portion of bonds and notes payable	358,575	1,016,480	(700,566)	674,489
Bonds and notes payable, less current portion	\$ 9,417,797	1,003,646	474,084	9,947,359

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 2001, the Authority issued \$550 million of bonds to advance refund \$474.1 million of outstanding bonds. During 2000, the Authority defeased \$41.8 million of outstanding bonds with \$40 million of current revenue. The advance refundings resulted in an accounting loss of \$37.2 million and a gain of \$720 thousand for the years ended June 30, 2001, and June 30, 2000, respectively. The Authority in effect reduced its aggregate debt service by approximately \$13.3 million and \$56.6 million in 2001 and 2000, respectively, and obtained an economic gain of \$28.4 million and \$1.8 million, respectively.

During 2001 the Authority issued \$86.1 million of bonds that will refund outstanding bonds at a future call date. The Authority will reduce debt service by \$36.4 million and obtain an economic benefit of \$7.2 million on June 15, 2010.

The Authority has defeased cumulatively \$4.603 billion and \$4.129 billion of outstanding bonds as of June 30, 2001 and 2000, 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 liability for the defeased bonds are not included in the Authority's financial statements.

As of June 30, 2001 and 2000, \$3.615 billion and \$2.702 billion of the defeased bonds respectively had been retired from the assets of the escrow accounts.

Debt service requirements to maturity at June 30, 2001 are as follows:

YEAR ENDING JUNE 30 IN THOUSANDS	PRINCIPAL	INTEREST	TOTAL
2002	\$ 674,489	464,397	1,138,886
2003	186,348	454,864	641,212
2004	196,369	452,716	649,085
2005	219,033	445,389	664,422
2006	219,764	436,573	656,337
Thereafter until 2033	9,125,845	6,637,644	15,763,489
<b>Total</b>	<b>\$ 10,621,848</b>	<b>8,891,583</b>	<b>19,513,430</b>

In fiscal year 2001 the changes in short-term liabilities were as follows:

IN THOUSANDS	BALANCE JUNE 30, 2000	ADDITIONS	DELETIONS	BALANCE JUNE 30, 2001
Current portion of bonds and notes payable	\$ 158,575	218,180	202,266	174,489
Commercial paper	200,000	798,300	498,300	500,000
<b>Total short-term debt payable</b>	<b>\$ 358,575</b>	<b>1,016,480</b>	<b>700,566</b>	<b>674,489</b>

NEW YORK CITY WATER AND SEWER SYSTEM  
**NOTES TO FINANCIAL STATEMENTS** CONTINUED

(10) RESTRICTED ASSETS

Certain cash and investments, plus accrued interest, of the System are restricted as follows:

IN THOUSANDS	2001	2000
The Board		
Operation and maintenance reserve account	\$ 120,074	118,196
Operation and maintenance reserve general account	10	10
	120,084	118,206
The Authority		
Revenue fund	158,829	124,712
Debt service reserve fund	607,360	580,775
Construction fund	49,018	144,466
Arbitrage rebate fund	300	6,501
Escrow fund	82,261	-
	897,768	856,454
	\$ 1,017,852	974,660

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.

(11) COMMITMENTS AND CONTINGENCIES

*Construction*

The System has contractual commitments of approximately \$3,365 and \$2,389 million at June 30, 2001 and June 30, 2000, respectively, for water and sewer projects.

*Contingencies*

*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, 2001, the potential future liability attributable to the System for claims

outstanding against the City was estimated to be \$94.4 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. Issues with respect to which all gross proceeds are expended for the governmental purpose of the issue within six months after the date of issue and debt service funds with annual gross earnings of less than \$100,000 are exempt from 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. At June 30, 2001 and 2000, the System has accrued \$143 thousand and \$3.7 million respectively, for such liability.

#### (12) SUBSEQUENT EVENTS

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

The disaster resulted in several water main breaks. However, water and sewer service was continuously

provided to most of lower Manhattan and was restored to all buildings near the disaster as they were able to be reoccupied. Full repair of the System is estimated to cost approximately \$5 million. The revenues of the System from user payments will be impacted by the loss of payments from the World Trade Center. The estimated reduction in System revenues is expected to be less than 1% of annual System revenues.

On July 2, 2001, the Authority issued Fiscal 2002 Series A Water and Sewer First Resolution Bonds in the aggregate principal amount of \$216.3 million to reimburse outstanding commercial paper notes, and to pay certain costs of issuance.

On July 12, 2001, the Authority issued Fiscal 2002 Series 1 Water and Sewer Second Resolution Bonds in the aggregate principal amount of \$204.1 million to reimburse outstanding commercial paper notes, and to pay certain costs of issuance.

On August 15, 2001, the Authority issued Fiscal 2002 Series B and C First Resolution Bonds in the aggregate principal amount of \$171.5 million and \$46.6 million, respectively, to fund an escrow account that will refund outstanding bonds at future call dates.

On September 11, 2001 the Water Authority issued Fiscal 2002 Series D, E, and F First Resolution Bonds in the aggregate amounts of \$41.7, \$213.8, and \$105.6 million, respectively, to fund an escrow account that will refund outstanding bonds at future call dates.

On October 17, 2001, the Authority issued Fiscal 2002 Series G Water and Sewer First Resolution Bonds in the aggregate principal amount of \$216.4 to reimburse outstanding commercial paper notes, and to pay certain costs of issuance.

On October 18, 2002, the Authority issued Fiscal 2002 Series 2 Water and Sewer Second Resolution Bonds in the aggregate principal amount of \$72.1 million to reimburse outstanding commercial paper notes, and to pay certain costs of issuance.

## COMBINING BALANCE SHEET

JUNE 30, 2001

IN THOUSANDS

	NEW YORK CITY WATER BOARD	NEW YORK CITY MUNICIPAL WATER FINANCE AUTHORITY	ELIMINATIONS	TOTAL
<b>ASSETS</b>				
Utility plant in service, less accumulated depreciation of \$4,573,701	\$ 9,795,394	—	—	9,795,394
Utility plant construction	3,580,396	—	—	3,580,396
	<u>13,375,790</u>	<u>—</u>	<u>—</u>	<u>13,375,790</u>
Current assets:				
Unrestricted cash and cash equivalents	7,416	3	—	7,419
Accounts receivable:	—	—	—	—
Billed, less allowance for uncollectible water and sewer receivables of \$313,318	341,417	—	—	341,417
Unbilled	106,600	—	—	106,600
Receivable from the City	23,458	—	—	23,458
Prepaid construction	40,000	—	—	40,000
Accrued interest receivable	4	—	—	4
Other	—	4,071	—	4,071
Total current unrestricted assets	<u>518,895</u>	<u>4,074</u>	<u>—</u>	<u>522,969</u>
Restricted assets:				
Cash and cash equivalents	120,048	774,095	—	894,143
Investments	—	123,377	—	123,377
Accrued interest receivable	36	296	—	332
Total current restricted assets	<u>120,084</u>	<u>897,768</u>	<u>—</u>	<u>1,017,852</u>
Total current assets	<u>638,979</u>	<u>901,842</u>	<u>—</u>	<u>1,540,821</u>
Revenue requirement to be billed by and received from the Board	—	5,443,374	(5,443,374)	—
Long-term Deferred bond and financing expenses	—	98,213	—	98,213
<b>Total assets</b>	<b>\$ 14,014,769</b>	<b>6,443,429</b>	<b>(5,443,374)</b>	<b>15,014,824</b>
<b>LIABILITIES AND NET ASSETS</b>				
Long-term liabilities:				
Bonds and notes payable, less current portion	\$ —	9,947,359	—	9,947,359
Net discount on bonds and notes payable	—	(372,409)	—	(372,409)
Deferred bond refunding costs	—	(229,145)	—	(229,145)
Revenue requirements payable to the Authority	5,443,374	—	(5,443,374)	—
Total long-term liabilities	<u>5,443,374</u>	<u>9,345,805</u>	<u>(5,443,374)</u>	<u>9,345,805</u>
Current liabilities:				
Accounts payable and accrued expenses	267	23,949	—	24,216
Revenues received in advance	76,562	—	—	76,562
Current portion of bonds and notes payable	—	674,489	—	674,489
Payable to the City	—	205,456	—	205,456
Refunds payable to customers	16,413	—	—	16,413
Total current liabilities	<u>93,242</u>	<u>903,894</u>	<u>—</u>	<u>997,136</u>
Total liabilities	<u>5,536,616</u>	<u>10,249,699</u>	<u>(5,443,374)</u>	<u>10,342,941</u>
Net Assets:				
Invested in capital assets, net of related debt	13,415,790	(9,922,081)	—	3,493,709
Restricted for debt service	120,084	897,768	—	1,017,852
Unrestricted (deficit)	(5,057,721)	5,218,043	—	160,322
Total net assets	<u>8,478,153</u>	<u>(3,806,270)</u>	<u>—</u>	<u>4,671,883</u>
<b>Total liabilities and net assets</b>	<b>\$ 14,014,769</b>	<b>6,443,429</b>	<b>(5,443,374)</b>	<b>15,014,824</b>

See accompanying independent auditors' report.

**COMBINING BALANCE SHEET**

JUNE 30, 2000

IN THOUSANDS

	NEW YORK CITY WATER BOARD	NEW YORK CITY MUNICIPAL WATER FINANCE AUTHORITY	ELIMINATIONS	TOTAL
Utility plant in service, less accumulated depreciation of \$4,302,707	\$ 9,627,344	—	—	9,627,344
Utility plant construction	3,196,302	—	—	3,196,302
	<u>12,823,646</u>	<u>—</u>	<u>—</u>	<u>12,823,646</u>
Current assets:				
Unrestricted cash and cash equivalents	8,730	4	—	8,734
Accounts receivable:				
Billed, less allowance for uncollectible water and sewer receivables of \$293,888	316,800	—	—	316,800
Unbilled	105,000	—	—	105,000
Receivable from the City	47,140	—	—	47,140
Other	—	5,751	—	5,751
Total current unrestricted assets	<u>477,670</u>	<u>5,755</u>	<u>—</u>	<u>483,425</u>
Restricted assets:				
Cash and cash equivalents	117,985	756,866	—	874,851
Investments	—	98,333	—	98,333
Accrued interest receivable	221	1,255	—	1,476
Total current unrestricted assets	<u>118,206</u>	<u>856,454</u>	<u>—</u>	<u>974,660</u>
Total current assets	<u>595,876</u>	<u>862,209</u>	<u>—</u>	<u>1,458,085</u>
Revenue requirement to be billed by and received from the Board	—	5,180,710	(5,180,710)	—
Long-term Deferred bond and financing expenses	—	102,917	—	102,917
Total assets	<u>\$ 13,419,522</u>	<u>6,145,836</u>	<u>(5,180,710)</u>	<u>14,384,648</u>
<b>LIABILITIES AND NET ASSETS</b>				
Long-term liabilities:				
Bonds and notes payable, less current portion	\$ —	9,417,797	—	9,417,797
Net discount on bonds and notes payable	—	(331,840)	—	(331,840)
Deferred bond refunding costs	—	(210,388)	—	(210,388)
Revenue requirements payable to the Authority	5,180,710	—	(5,180,710)	—
Total long-term liabilities	<u>5,180,710</u>	<u>8,875,569</u>	<u>(5,180,710)</u>	<u>8,875,569</u>
Current liabilities:				
Accounts payable and accrued expenses	238	27,480	—	27,718
Revenues received in advance	67,798	—	—	67,798
Current portion of bonds and notes payable	—	358,575	—	358,575
Payable to the City	—	252,911	—	252,911
Refunds payable to customers	15,375	—	—	15,375
Total current liabilities	<u>83,411</u>	<u>638,966</u>	<u>—</u>	<u>722,377</u>
Total liabilities	<u>5,264,121</u>	<u>9,514,535</u>	<u>(5,180,710)</u>	<u>9,597,946</u>
Net Assets:				
Invested in capital assets, net of related debt	12,823,646	(9,131,227)	—	3,692,419
Restricted for debt service	118,206	856,454	—	974,660
Unrestricted	(4,786,451)	4,906,074	—	119,623
Total net assets	<u>8,155,401</u>	<u>(3,368,699)</u>	<u>—</u>	<u>4,786,702</u>
Total liabilities and net assets	<u>\$ 13,419,522</u>	<u>6,145,836</u>	<u>(5,180,710)</u>	<u>14,384,648</u>

See accompanying independent auditors' report.



**COMBINING STATEMENT OF REVENUES, EXPENSES  
AND CHANGES IN NET ASSETS**  
YEAR ENDED JUNE 30, 2001

IN THOUSANDS

	NEW YORK CITY WATER BOARD	NEW YORK CITY MUNICIPAL WATER FINANCE AUTHORITY	ELIMINATIONS	TOTAL
Operating revenues:				
Water supply and distribution	\$ 626,364	—	—	626,364
Sewer collection and treatment	898,568	—	—	898,568
Other operating revenues	51,952	45,039	—	96,991
Total operating revenues	1,576,884	45,039	—	1,621,923
Operating expenses:				
Operation and maintenance	842,401	—	—	842,401
Bad debt expense	122,785	—	—	122,785
Administration and general	1,831	9,384	—	11,215
Total operating expenses	967,017	9,384	—	976,401
Excess of operating revenues over operating expenses before depreciation and amortization	609,867	35,655	—	645,522
Depreciation and amortization	292,772	25,937	—	318,709
Operating income	317,095	9,718	—	326,813
Nonoperating revenue (expenses):				
Interest expense	—	(527,914)	—	(527,914)
Investment income	3,909	80,625	—	84,534
Net income (loss) before capital contributions	321,004	(437,571)	—	(116,567)
Contributed capital	1,748	—	—	1,748
Change in net assets	322,752	(437,571)	—	(114,819)
Net assets at beginning of year	8,155,401	(3,368,699)	—	4,786,702
Net assets at end of year	\$ 8,478,153	(3,806,270)	—	4,671,883

See accompanying independent auditors' report.

**COMBINING STATEMENT OF REVENUES, EXPENSES  
AND CHANGES IN NET ASSETS**  
YEAR ENDED JUNE 30, 2000

IN THOUSANDS

	NEW YORK CITY WATER BOARD	NEW YORK CITY MUNICIPAL WATER FINANCE AUTHORITY	ELIMINATIONS	TOTAL
Operating revenues:				
Water supply and distribution	\$ 610,949	—	—	610,949
Sewer collection and treatment	876,455	—	—	876,455
Other operating revenues	47,458	45,736	—	93,194
Total operating revenues	1,534,862	45,736	—	1,580,598
Operating expenses:				
Operation and maintenance	801,255	—	—	801,255
Bad debt expense	89,062	—	—	89,062
Administration and general	1,578	8,514	—	10,092
Total operating expenses	891,895	8,514	—	900,409
Excess of operating revenues over operating expenses before depreciation and amortization	642,967	37,222	—	680,189
Depreciation and amortization	326,601	20,454	—	347,055
Operating income	316,366	16,768	—	333,134
Nonoperating revenue (expense):				
Interest expense	—	(492,747)	—	(492,747)
Investment income	3,939	66,539	—	70,478
Net income (loss) before capital contributions	320,305	(409,440)	—	(89,135)
Contributed capital	5,637	—	—	5,637
Change in net assets	325,942	(409,440)	—	(83,498)
Net assets at beginning of year	7,829,459	(2,959,259)	—	4,870,200
Net assets at end of year	\$ 8,155,401	(3,368,699)	—	4,786,702

See accompanying independent auditors' report.

**COMBINING STATEMENTS OF CASH FLOWS**  
**YEAR ENDED JUNE 30, 2001**

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	\$ 1,437,981	45,039	1,483,020
Payments for operations & maintenance	(819,015)	—	(819,015)
Payments for administration	(1,803)	(12,961)	(14,764)
Net cash provided by operating activities	617,163	32,078	649,241
<b>Cash flows from capital and related financing activities:</b>			
Proceeds from issuing bonds, notes and other borrowings, net of issuance costs	—	1,909,079	1,909,079
Acquisition and construction of capital assets	(40,000)	(890,623)	(930,623)
Payments by the Board to the Authority (net)	(580,504)	580,504	—
Repayments of bonds, notes and other borrowings	—	(1,167,056)	(1,167,056)
Interest paid on bonds, notes and other borrowings	—	(503,344)	(503,344)
Net cash used by capital and related financing activities	(620,504)	(71,440)	(691,944)
<b>Cash flows from investing activities:</b>			
Proceeds from sales and maturities of investments	—	98,333	98,333
Purchases of investments	—	(123,377)	(123,377)
Interest on investments	4,090	81,634	85,724
Net cash provided by investing activities	4,090	56,590	60,680
Net increase in cash and cash equivalents	749	17,228	17,977
Cash and cash equivalents, beginning of year	126,715	756,870	883,585
<b>Cash and cash equivalents, end of year</b>	<b>\$ 127,464</b>	<b>774,098</b>	<b>901,562</b>

**RECONCILIATION OF OPERATING INCOME TO NET CASH PROVIDED BY OPERATING ACTIVITIES:**

Operating income	\$ 317,095	9,718	326,813
Adjustments to reconcile operating income to net cash provided by operating activities:			
Depreciation and amortization	292,772	25,937	318,709
Bad debt expense	122,785	—	122,785
Changes in net assets and liabilities:			
Receivables, net	(149,002)	—	(149,002)
Accounts payable	29	(3,577)	(3,548)
Receivable from the City	23,682	—	23,682
Refunds payable	1,038	—	1,038
Revenues received in advance	8,764	—	8,764
<b>Net cash provided by operating activities</b>	<b>\$ 617,163</b>	<b>32,078</b>	<b>649,241</b>

	UNRESTRICTED	ASSETS RESTRICTED	TOTAL
Cash and cash equivalents—beginning	\$ 8,734	874,851	883,585
Net increase	(1,315)	19,292	17,977
<b>Cash and cash equivalents—ending</b>	<b>\$ 7,419</b>	<b>894,143</b>	<b>901,562</b>

The following are the noncash capital and related financing activities:

Interest expense includes the amortization of premium and discount in the amount of \$12,672.

Capital expenditures in the amount of \$205,456 had been incurred but not paid at June 30, 2001.

The Board received capital assets of \$1,748 in 2001, which represent capital contributed by the City.

See accompanying independent auditors' report.

**COMBINING STATEMENTS OF CASH FLOWS**  
**YEAR ENDED JUNE 30, 2000**

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	\$1,401,768	45,736	1,447,504
Payments for operations & maintenance	(777,025)	—	(777,025)
Payments for administration	(1,636)	(8,382)	(10,018)
Net cash provided by operating activities	623,107	37,354	660,461
<b>Cash flows from capital and related financing activities:</b>			
Proceeds from issuing bonds, notes and other borrowings, net of issuance costs	—	1,515,293	1,515,293
Acquisition and construction of capital assets	—	(726,941)	(726,941)
Payments by the Board to the Authority (net)	(655,639)	655,639	—
Repayments of bonds, notes and other borrowings	—	(1,112,623)	(1,112,623)
Interest paid on bonds, notes and other borrowings	—	(477,120)	(477,120)
Net cash used by capital and related financing activities	(655,639)	(145,752)	(801,391)
<b>Cash flows from investing activities:</b>			
Proceeds from sales and maturities of investments	3,425	499,594	503,019
Purchases of investments	—	(98,333)	(98,333)
Interest on investments	3,860	70,608	74,468
Net cash provided by investing activities	7,285	471,869	479,154
Net (decrease) increase in cash and cash equivalents	(25,247)	363,471	338,224
Cash and cash equivalents, beginning of year	151,962	393,399	545,361
<b>Cash and cash equivalents, end of year</b>	<b>\$ 126,715</b>	<b>756,870</b>	<b>883,585</b>

**RECONCILIATION OF OPERATING INCOME TO NET CASH PROVIDED BY OPERATING ACTIVITIES:**

Operating income	\$ 316,366	16,768	333,134
Adjustments to reconcile operating income to net cash provided by operating activities:			
Depreciation and Amortization	326,601	20,454	347,055
Bad debt expense	89,062	—	89,062
Changes in net assets and liabilities:			
Receivables, net	(119,807)	—	(119,807)
Accounts payable	(59)	132	73
Receivable from the City	22,533	—	22,533
Refunds payable	875	—	875
Revenues received in advance	(12,464)	—	(12,464)
<b>Net cash provided by operating activities</b>	<b>\$ 623,107</b>	<b>37,354</b>	<b>660,461</b>

	ASSETS		TOTAL
	UNRESTRICTED	RESTRICTED	
Cash and cash equivalents—beginning	\$ 35,854	509,507	545,361
Net increase	(27,120)	365,344	338,224
<b>Cash and cash equivalents—ending</b>	<b>\$ 8,734</b>	<b>874,851</b>	<b>883,585</b>

The following are the noncash capital and related financing activities:

Interest expense includes the amortization of premium and discount in the amount of \$7,429.

Capital expenditures in the amount of \$252,911 had been incurred but not paid at June 30, 2000.

The Board received capital assets of \$5,637 in 2000, which represent capital contributed by the City.

See accompanying independent auditors' report.

**FORM OF OPINIONS OF BOND COUNSEL**

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**FORM OF OPINION OF BOND COUNSEL**  
**(Fiscal 2003 Series A Bonds)**

July , 2002

New York City Municipal  
Water Finance Authority

Ladies and Gentlemen:

We have examined a record of proceedings relating to the issuance of \$741,090,000 aggregate principal amount of Water and Sewer System Bonds, Fiscal 2003 Series A (the "2003 Series A Bonds") 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 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").

The 2003 Series A Bonds are issued under and pursuant to 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 the date hereof (the "Resolution"), including by a resolution adopted June 20, 2002 entitled "Fifty-seventh Supplemental Resolution Authorizing the Issuance of \$741,090,000 Water and Sewer System Revenue Bonds, Fiscal 2003 Series A" (the "Fifty-seventh Supplemental Resolution") authorizing the 2003 Series A Bonds. Capitalized terms used herein and not otherwise defined have the respective meanings given to them 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 as of July 1, 1985, as amended (the "Financing Agreement"), relating to, among other things, the financing of Water Projects.

The 2003 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 2003 Series A Bonds are being issued for the purposes of the Resolution.

The Authority is authorized to issue Bonds, in addition to the 2003 Series A Bonds, only upon the terms and conditions set forth in the Resolution, and such Bonds, when issued, shall, with the 2003 Series A Bonds and with all other such Bonds therefore issued, be entitled to the equal benefit, protection and security of the provisions, covenants and agreements of the Resolution.

The 2003 Series A Bonds are dated the date hereof and mature on June 15 of the years and in the respective principal amounts and bear interest at the respective rates per annum, as set forth below:

<u>Year</u>	<u>Principal Amount</u>	<u>Interest Rate</u>
2003	\$ 21,910,000	3 %
2007	3,335,000	4
2008	4,200,000	4
2009	4,415,000	4
2010	5,215,000	4
2011	13,465,000	4
2011	15,500,000	5¼
2012	6,465,000	4⅛
2012	4,620,000	5¼
2013	3,410,000	4¼
2013	16,585,000	5⅜
2013	20,000,000	Muni-CPI
2014	2,005,000	4⅜
2014	47,145,000	5⅜
2015	1,700,000	4.40
2015	44,910,000	5⅜
2016	2,190,000	4½
2016	45,090,000	5⅜
2017	260,000	4⅝
2017	46,115,000	5⅜
2018	465,000	4.70
2018	45,095,000	5⅜
2019	1,135,000	4¾
2019	42,320,000	5⅜
2020	17,375,000	5
2028	30,000,000	6
2028	17,490,000	5
2029	30,000,000	5
2034	17,860,000	5¼
2034	230,815,000	5⅛

Interest on the 2003 Series A Bonds is payable on December 15, 2002 and semiannually thereafter on June 15 and December 15 in each year.

The 2003 Series A Bonds are subject to redemption in the manner and upon the terms and conditions set forth in the Resolution. The 2003 Series A Bonds are issuable in the form of fully registered Bonds in denominations of \$5,000 or integral multiples thereof.

We are of the opinion that:

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 Fifty-seventh Supplemental Resolution and to issue the 2003 Series A Bonds.

2. The Resolution and the Fifty-seventh 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 Fifty-seventh 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, subject only to the provisions of the Resolution, the Fifty-seventh 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 2003 Series A Bonds have been duly and validly authorized and issued. The 2003 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 2003 Series A Bonds are payable solely from the Revenues and other amounts pledged to such payment under the Resolution. The 2003 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. The Internal Revenue Code of 1986 (the "Code") imposes certain requirements which must be met subsequent to the issuance and delivery of the 2003 Series A Bonds for interest thereon to be and remain excluded from gross income for federal income tax purposes. Noncompliance with such requirements could cause the interest on the 2003 Series A Bonds to be included in gross income for federal income tax purposes retroactive to the date of issue of the 2003 Series A Bonds. Pursuant to the Fifty-seventh Supplemental Resolution, the Authority has covenanted to maintain the exclusion from gross income of the interest on the Bonds pursuant to Section 103 of the Code, in furtherance thereof, to comply with the Tax Certificate as to Arbitrage and the Provisions of Sections 103 and 141-150 of the Code, with respect to the 2003 Series A Bonds for federal income tax purposes and that it shall provide for any required rebate to the United States.

9. Under existing law and assuming compliance with the aforementioned tax covenants, interest on the 2003 Series A Bonds is excluded from gross income for federal income tax purposes under Section 103 of the Code. We are also of the opinion that such interest on the 2003 Series A Bonds is not treated as a preference item in calculating the alternative minimum tax imposed under the Code with respect to individuals and corporations. Interest on the 2003 Series A Bonds is, however, included in the adjusted current earnings of certain corporations for purposes of computing the alternative minimum tax on such corporations.

Interest on the 2003 Series A Bonds is exempt, under existing law, from personal income tax of the State of New York and its political subdivisions, including The City of New York.

The difference between the principal amount of the Fiscal 2003 Series A Bonds maturing on June 15, 2011 and bearing interest at the rate of 4% per annum, June 15, 2012 and bearing interest at the rate of 4 $\frac{1}{8}$ % per annum, June 15, 2013 and bearing interest at the rate of 4 $\frac{1}{4}$ % per annum, June 15, 2014 and bearing interest at the rate of 4 $\frac{3}{8}$ % per annum, June 15, 2015 and bearing interest at the rate of 4.40% per annum, June 15, 2016 and bearing interest at the rate of 4 $\frac{1}{2}$ % per annum, June 15, 2017 and bearing interest at the rate of 4 $\frac{5}{8}$ % per annum, June 15, 2018 and bearing interest at the rate of 4.70% per annum, June 15, 2019 and bearing interest at the rate of 4 $\frac{3}{4}$ % per annum, June 15, 2028 and bearing interest at the rate of 5% per annum, June 15, 2029 and June 15, 2034 (collectively, the "Discount Bonds") and the initial offering price to the public (excluding bond houses, brokers or similar persons or organizations acting in the capacity of underwriters or wholesalers) at which price a substantial amount of Discount Bonds of the same maturity was sold constitutes original issue discount which is excluded from gross income for federal income tax purposes to the same extent as interest on the 2003 Series A Bonds.

Further, the original issue discount accrues actuarially on a constant interest rate basis over the term of the Discount Bond and the basis of such Discount Bond acquired at the initial offering price by its initial purchaser will be increased by the amount of the accrued original issue discount. The accrual of original issue discount may be taken into account as an increase in the amount of tax-exempt income for purposes of determining various other tax consequences of owning Discount Bonds, even though there will not be a corresponding cash payment.

The Fiscal 2003 Series A Bonds maturing on June 15, 2003 through June 15, 2010, inclusive, June 15, 2011 and bearing interest at the rate of 5¼% per annum, June 15, 2012 and bearing interest at the rate of 5¼% per annum, June 15, 2013 and bearing interest at the rate of 5¾% per annum, June 15, 2014 and bearing interest at the rate of 5¾% per annum, June 15, 2015 and bearing interest at the rate of 5¾% per annum, June 15, 2016 and bearing interest at the rate of 5¾% per annum, June 15, 2017 and bearing interest at the rate of 5¾% per annum, June 15, 2018 and bearing interest at the rate of 5¾% per annum, June 15, 2019 and bearing interest at the rate of 5¾% per annum, June 15, 2028 and bearing interest at the rate of 6% per annum (collectively, the “Premium Bonds”) are being offered at prices in excess of their principal amounts. Bond Counsel is of the opinion that an initial purchaser with an initial adjusted basis in a Premium Bond in excess of its principal amount will have amortizable bond premium which is not deductible from gross income for federal income tax purposes. The amount of amortizable bond premium for a taxable year is determined actuarially on a constant interest rate basis over the term of each Premium Bond based on the purchaser’s yield to maturity (or, in the case of Premium Bonds callable prior to their maturity, over the period to the call date, based on the purchaser’s yield to the call date and giving effect to any call premium). For purposes of determining gain or loss on the sale or other disposition of a Premium Bond, an initial purchaser who acquires such obligation with an amortizable bond premium is required to decrease such purchaser’s adjusted basis in such Premium Bond annually by the amount of amortizable bond premium for the taxable year. The amortization of bond premium may be taken into account as a reduction in the amount of tax-exempt income for purposes of determining various other tax consequences of owning such 2003 Series A Bonds.

Except as stated in the preceding paragraphs, we express no opinion as to any other federal or state tax consequences of the ownership or disposition of the 2003 Series A Bonds. Furthermore, we express no opinion as to any federal, state or local tax law consequences with respect to the 2003 Series A Bonds, or the interest thereon, if any action is taken with respect to the 2003 Series A Bonds or the proceeds thereof upon the advice or approval of other counsel.

We have examined an executed 2003 Series A Bond, and, in our opinion, the form of said bond and its execution are regular and proper. However, we have not verified and express no opinion as to the accuracy of, any “CUSIP” identification number which may be printed on any of the 2003 Series A Bonds.

The above opinions are qualified to the extent that the enforceability of rights and remedies may be limited by bankruptcy, insolvency, or other laws affecting creditors’ rights and the unavailability of equitable remedies.

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 the 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 Financing Agreement and the Lease 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.

Very truly yours,

**FORM OF OPINION OF BOND COUNSEL**  
**(Fiscal 2003 Series B Bonds)**

July , 2002

New York City Municipal  
Water Finance Authority

Ladies and Gentlemen:

We have examined a record of proceedings relating to the issuance of \$150,000,000 aggregate principal amount of Water and Sewer System Bonds, Fiscal 2003 Series B (the "2003 Series B Bonds") 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 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").

The 2003 Series B Bonds are issued under and pursuant to 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 the date hereof (the "Resolution"), including by a resolution adopted June 20, 2002 entitled "Fifty-eighth Supplemental Resolution Authorizing the Issuance of \$150,000,000 Water and Sewer System Revenue Bonds, Fiscal 2003 Series B" (the "Fifty-eighth Supplemental Resolution") authorizing the 2003 Series B Bonds. Capitalized terms used herein and not otherwise defined have the respective meanings given to them 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 as of July 1, 1985, as amended (the "Financing Agreement"), relating to, among other things, the financing of Water Projects.

The 2003 Series B 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 2003 Series B Bonds are being issued for the purposes of the Resolution.

The Authority is authorized to issue Bonds, in addition to the 2003 Series B Bonds, only upon the terms and conditions set forth in the Resolution, and such Bonds, when issued, shall, with the 2003 Series B Bonds and with all other such Bonds therefore issued, be entitled to the equal benefit, protection and security of the provisions, covenants and agreements of the Resolution.

The 2003 Series B Bonds are dated the date hereof and mature on June 15 of the years and in the respective principal amounts and bear interest at the respective rates per annum, as set forth below:

<u>Year</u>	<u>Principal Amount</u>	<u>Interest Rate</u>
2004	\$25,000,000	4 %
2004	25,000,000	5
2005	3,000,000	4
2005	47,000,000	5
2006	10,000,000	4
2006	10,000,000	5
2006	30,000,000	5¼

Interest on the 2003 Series B Bonds is payable on December 15, 2002 and semiannually thereafter on June 15 and December 15 in each year.

The 2003 Series B Bonds are subject to redemption in the manner and upon the terms and conditions set forth in the Resolution. The 2003 Series B Bonds are issuable in the form of fully registered Bonds in denominations of \$5,000 or integral multiples thereof.

We are of the opinion that:

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 Fifty-eighth Supplemental Resolution and to issue the 2003 Series B Bonds.

2. The Resolution and the Fifty-eighth 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 Fifty-eighth 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, subject only to the provisions of the Resolution, the Fifty-eighth 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 2003 Series B Bonds have been duly and validly authorized and issued. The 2003 Series B 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 2003 Series B Bonds are payable solely from the Revenues and other amounts pledged to such payment under the Resolution. The 2003 Series B 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. The Internal Revenue Code of 1986 (the "Code") imposes certain requirements which must be met subsequent to the issuance and delivery of the 2003 Series B Bonds for interest thereon to be and

remain excluded from gross income for federal income tax purposes. Noncompliance with such requirements could cause the interest on the 2003 Series B Bonds to be included in gross income for federal income tax purposes retroactive to the date of issue of the 2003 Series B Bonds. Pursuant to the Fifty-eighth Supplemental Resolution, the Authority has covenanted to maintain the exclusion from gross income of the interest on the Bonds pursuant to Section 103 of the Code, in furtherance thereof, to comply with the Tax Certificate as to Arbitrage and the Provisions of Sections 103 and 141-150 of the Code, with respect to the 2003 Series B Bonds for federal income tax purposes and that it shall provide for any required rebate to the United States.

9. Under existing law and assuming compliance with the aforementioned tax covenants, interest on the 2003 Series B Bonds is excluded from gross income for federal income tax purposes under Section 103 of the Code. We are also of the opinion that such interest on the 2003 Series B Bonds is not treated as a preference item in calculating the alternative minimum tax imposed under the Code with respect to individuals and corporations. Interest on the 2003 Series B Bonds is, however, included in the adjusted current earnings of certain corporations for purposes of computing the alternative minimum tax on such corporations.

Interest on the 2003 Series B Bonds is exempt, under existing law, from personal income tax of the State of New York and its political subdivisions, including The City of New York.

The 2003 Series B Bonds (the "Premium Bonds") are being offered at prices in excess of their principal amounts. Bond Counsel is of the opinion that an initial purchaser with an initial adjusted basis in a Premium Bond in excess of its principal amount will have amortizable bond premium which is not deductible from gross income for federal income tax purposes. The amount of amortizable bond premium for a taxable year is determined actuarially on a constant interest rate basis over the term of each Premium Bond based on the purchaser's yield to maturity (or, in the case of Premium Bonds callable prior to their maturity, over the period to the call date, based on the purchaser's yield to the call date and giving effect to any call premium). For purposes of determining gain or loss on the sale or other disposition of a Premium Bond, an initial purchaser who acquires such obligation with an amortizable bond premium is required to decrease such purchaser's adjusted basis in such Premium Bond annually by the amount of amortizable bond premium for the taxable year. The amortization of bond premium may be taken into account as a reduction in the amount of tax-exempt income for purposes of determining various other tax consequences of owning such 2003 Series B Bonds.

Except as stated in the preceding paragraphs, we express no opinion as to any other federal or state tax consequences of the ownership or disposition of the 2003 Series B Bonds. Furthermore, we express no opinion as to any federal, state or local tax law consequences with respect to the 2003 Series B Bonds, or the interest thereon, if any action is taken with respect to the 2003 Series B Bonds or the proceeds thereof upon the advice or approval of other counsel.

We have examined an executed 2003 Series B Bond, and, in our opinion, the form of said bond and its execution are regular and proper. However, we have not verified and express no opinion as to the accuracy of, any "CUSIP" identification number which may be printed on any of the 2003 Series B Bonds.

The above opinions are qualified to the extent that the enforceability of rights and remedies may be limited by bankruptcy, insolvency, or other laws affecting creditors' rights and the unavailability of equitable remedies.

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 the 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 Financing Agreement and the Lease 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.

Very truly yours,

**BOOK-ENTRY-ONLY FORM**

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## **BOOK-ENTRY-ONLY FORM**

The Depository Trust Company (“DTC”) will act as securities depository for the Fiscal 2003 A and B Bonds. The Fiscal 2003 A and B 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 2003 A and B 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 \$200 million, one certificate will be issued with respect to each \$200 million of principal amount and an additional certificate will be issued with respect to any remaining principal amount of such maturity.

DTC 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 securities that its Participants deposit with DTC. DTC also facilitates the settlement among Participants of securities transactions, such as transfers and pledges, in deposited securities through electronic computerized book-entry changes in Direct Participants’ accounts, thereby eliminating the need for physical movement of securities certificates. Direct Participants include securities brokers and dealers, banks, trust companies, clearing corporations, and certain other organizations (“Direct Participants”). DTC is owned by a number of its Direct Participants and 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”). The Rules applicable to DTC and its Participants are on file with the Securities and Exchange Commission.

Purchases of Fiscal 2003 A and B Bonds under the DTC system must be made by or through Direct Participants, which will receive a credit for the Fiscal 2003 A and B Bonds on DTC’s records. The ownership interest of each actual purchaser of each Fiscal 2003 A and B 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, but Beneficial Owners are 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 2003 A and B Bonds are to be accomplished by entries made on the books of participants acting on behalf of Beneficial Owners. Beneficial Owners will not receive certificates representing their ownership interests in Fiscal 2003 A and B Bonds, except in the event that use of the book-entry system for the Fiscal 2003 A and B Bonds is discontinued.

To facilitate subsequent transfers, all Fiscal 2003 A and B Bonds deposited by Direct Participants with DTC are registered in the name of DTC’s partnership nominee, Cede & Co. The deposit of any series of bonds with DTC and their registration in the name of Cede & Co. effect no change in beneficial ownership. DTC has no knowledge of the actual Beneficial Owners of any Fiscal 2003 A and B 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 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 Cede & Co. If less than all of the Fiscal 2003 A and B 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. will consent or vote with respect to Fiscal 2003 A and B 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 Bonds are credited on the record date (identified in a listing attached to the Omnibus Proxy).

Principal, premium, if any, and interest payments on the Fiscal 2003 A and B Bonds, will be made to DTC. DTC's practice is to credit Direct Participants' accounts on a payment date in accordance with their respective holdings shown on DTC's records unless DTC has reason to believe that it will not receive payment on a payment date. 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 DTC 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 2003 A and B 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.

According to DTC, the foregoing information with respect to DTC has been provided to the Industry for informational purposes only and is not intended to serve as a representation, warranty, or contract modification of any kind.

Unless otherwise noted, certain of 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.**

## TABLE OF REFUNDED BONDS

The Authority expects to apply a portion of the proceeds of the Fiscal 2003 A Bonds, together with a portion of the proceeds of the Fiscal 2003 C Bonds, to refund a portion of the Authority's Outstanding Fiscal 1993 A Bonds by providing for the payment of the principal of and redemption premium, if any, and interest on such Fiscal 1993 Series A Bonds in the respective principal amounts, at the respective redemption prices, and to the respective redemption dates set forth below.

<u>Maturity Date</u>	<u>Principal Amount Outstanding</u>	<u>Principal Amount to be Refunded</u>	<u>Redemption Price</u>	<u>Redemption Date</u>
June 15, 2003	\$ 11,115,000	\$ 11,115,000	101.5%	August 8, 2002
June 15, 2004	11,755,000	11,755,000	101.5	August 8, 2002
June 15, 2005	12,450,000	12,450,000	101.5	August 8, 2002
June 15, 2006	13,200,000	13,200,000	101.5	August 8, 2002
June 15, 2007	25,610,000	25,610,000	101.5	August 8, 2002
June 15, 2011	23,545,000	23,545,000	101.5	August 8, 2002
June 15, 2012(1)	5,610,000	5,610,000	101.5	August 8, 2002
June 15, 2013(1)	37,345,000	37,345,000	101.5	August 8, 2002
June 15, 2014(1)	65,605,000	65,605,000	101.5	August 8, 2002
June 15, 2015(1)	33,970,000	33,970,000	101.5	August 8, 2002
June 15, 2016(1)	86,715,000	86,715,000	101.5	August 8, 2002
June 15, 2017	69,755,000	69,755,000	101.5	August 8, 2002
June 15, 2014(2)	21,480,000	21,480,000	101.5	August 8, 2002
June 15, 2015(2)	6,545,000	6,545,000	101.5	August 8, 2002
June 15, 2016(2)	6,920,000	6,920,000	101.5	August 8, 2002
June 15, 2017(2)	7,320,000	7,320,000	101.5	August 8, 2002
June 15, 2018	7,735,000	7,735,000	101.5	August 8, 2002
June 15, 2015(3)	16,170,000	16,170,000	101.5	August 8, 2002
June 15, 2016(3)	17,110,000	17,110,000	101.5	August 8, 2002
June 15, 2017(3)	18,085,000	18,085,000	101.5	August 8, 2002
June 15, 2018	19,135,000	19,135,000	101.5	August 8, 2002
June 15, 2018(4)	141,235,000	141,235,000	100.0	August 8, 2002
June 15, 2019(4)	43,470,000	43,470,000	100.0	August 8, 2002
June 15, 2020(4)	17,295,000	17,295,000	100.0	August 8, 2002

(1) Sinking fund installment of the term bond maturing June 15, 2017.

(2) Sinking fund installment of the AMBAC insured term bond maturing June 15, 2018.

(3) Sinking fund installment of the Financial Guaranty insured term bond maturing June 15, 2018.

(4) Sinking fund installment of the term bond maturing June 15, 2020.

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## PROVISIONS APPLICABLE TO MUNI-CPI BONDS

### Definitions With Respect to Muni-CPI Bonds

“**Calculation Agent**” means, initially, Morgan Stanley & Co. Incorporated, or such other Calculation Agent as may be selected by the Authority.

“**Constant Rate**” equals 1.53% per annum.

“**CPI-U**” means the non-seasonally adjusted U.S. City Average All Items Consumer Price Index for All Urban Consumers, published monthly by the Bureau of Labor Statistics of the U.S. Department of Labor. See “Description of CPI-U” herein.

“**Floating Rate-CPI**” means the rate, calculated by the Calculation Agent on the Reset Date immediately prior to each Interest Payment Date, equal to (A) the quotient of (1) the Reference CPI-U for the current Interest Payment Date minus the Reference CPI-U for the immediately preceding Interest Payment Date (or in the case of the first Interest Payment Date, the Initial CPI-U), divided by (2) the Reference CPI-U for the immediately preceding Interest Payment Date (or in the case of the first Interest Payment Date, the Initial CPI-U), multiplied by (B) the quotient of (1) the actual number of days in the calendar year in which the current Interest Payment Date falls, divided by (2) the actual number of days in the current interest period. The resulting product will be truncated to six decimal places and rounded to five decimal places.

“**Initial CPI-U**” equals 179.8.

“**Muni-CPI Bonds**” means the Fiscal 2003 A Bonds that bear interest at the Muni-CPI Rate, namely \$20,000,000 of the Fiscal 2003 A Bonds maturing on June 15, 2013.

“**Muni-CPI Rate**” means the sum of the Floating Rate-CPI plus the Constant Rate. If for any Interest Payment Date the sum of the Floating Rate-CPI plus the Constant Rate results in zero or a negative number, the Muni-CPI Rate will be zero for that Interest Payment Date.

“**Reference CPI-U**” means (i) with respect to the June 15 Interest Payment Date, the Reference CPI-U determined by the Calculation Agent by linear interpolation between the CPI-U for the first day of the immediately preceding March and the CPI-U for the first day of the immediately preceding April, (ii) with respect to the December 15 Interest Payment Date (other than the first December 15 Interest Payment Date), the Reference CPI-U determined by the Calculation Agent by linear interpolation between the CPI-U for the first day of the immediately preceding September and the CPI-U for the first day of the immediately preceding October, and (iii) with respect to the first Interest Payment Date, the Initial CPI-U.

“**Reference Date**” means the date in respect of which the Reference CPI-U is determined.

“**Reset Date**” means a date that is not earlier than the fifth Business Day following the determination of the Reference CPI-U for the applicable Interest Payment Date, but in no event later than the date which is seven days prior to the applicable Interest Payment Date.

“**Treasury Inflation-Protection Securities**” means the inflation-indexed securities issued by the United States Treasury.

### Muni-CPI Rate — General

The Muni-CPI Bonds bear interest from and including the delivery date at a floating Muni-CPI Rate such that each interest payment thereon takes into account inflation and deflation from the Reference Date with respect to the immediately preceding Interest Payment Date to the Reference Date with respect to the current Interest Payment Date. The interest rate on the Muni-CPI Bonds has two components, which are together paid to the bondholder semiannually: (i) a floating rate (the “Floating Rate-CPI”) which increases or decreases during each semiannual period to correspond to percentage

changes in an index rate which is based upon the CPI-U and (ii) a fixed rate (the “Constant Rate”). The Constant Rate for the Muni-CPI Bonds is equal to 1.53% per annum. If for any Interest Payment Date the sum of the Floating Rate-CPI and the Constant Rate results in zero or a negative number the interest rate for the Muni-CPI Bonds for such Interest Payment Date will be zero.

### **Calculating the Muni-CPI Rate; Interest Payments**

The Muni-CPI Rate for the Muni-CPI Bonds equals the Floating Rate-CPI plus the Constant Rate. The Floating Rate-CPI equals the change in CPI-U multiplied by the quotient of (i) the actual number of days in the calendar year in which the Interest Payment Date falls divided by (ii) the actual number of days in the current interest period. The change in the CPI-U will equal the quotient of (a) the current Reference CPI-U minus the Reference CPI-U for the immediately preceding Interest Payment Date (or in the case of the first Interest Payment Date, the Initial CPI-U), divided by (b) the Reference CPI-U for the immediately preceding Interest Payment Date (or in the case of the first Interest Payment Date, the Initial CPI-U). The Initial CPI-U equals 179.8.

The Floating Rate-CPI will be truncated to six decimal places and rounded to five decimal places. If the number in the sixth decimal place is five or higher, the fifth decimal place will be rounded up.

The Reference CPI for the first day of any calendar month is the CPI-U for the third preceding calendar month. For example, the Reference CPI applicable to June 1 in any year is the CPI-U for March. The Reference CPI-U for any other day of a month is determined by linear interpolation between the Reference CPI-U applicable to the first day of the month in which such day falls (in the example, March) and the Reference CPI-U applicable to the first day of the next month (in the example, April). The CPI-U for a particular month is generally released and published in the following month. The Reference CPI-U for each semiannual Interest Payment Date commencing on December 15, 2002 will, with respect to the June 15 Interest Payment Date, be determined by linear interpolation between the CPI-U for the first day of the immediately preceding March and the CPI-U for the first day of the immediately preceding April and, with respect to the December 15 Interest Payment Date, be determined by linear interpolation between the CPI-U for the first day of the immediately preceding September and the CPI-U for the first day of the immediately preceding October. For purposes of interpolation, calculations with regard to the Reference CPI for a specific date will be truncated to six decimal places and rounded to five decimal places such that the Reference CPI-U for that date will be expressed to five decimal places.

Interest on the Muni-CPI Bonds will be payable in arrears on each Interest Payment Date to the owners thereof as of the applicable Record Date and will be computed on the basis of a 365 or 366-day year (as applicable) for the number of days actually elapsed. Interest will accrue at the Muni-CPI Rate on the principal amount from and including the delivery date or the immediately preceding Interest Payment Date to, but not including, the next succeeding Interest Payment Date. The Muni-CPI Rate is determined in arrears on each Reset Date and applied to all days in the relevant interest period. Interest payments on any Interest Payment Date shall equal the principal amount of Muni-CPI Bonds multiplied by the Muni-CPI Rate multiplied by the quotient obtained by dividing (1) the actual number of days in the relevant interest period by (2) the actual number of calendar days in the year in which the Interest Payment Date falls. The minimum Muni-CPI Rate for any interest period will be zero.

Interest on the Muni-CPI Bonds shall be paid on each Interest Payment Date; provided, however, that notwithstanding anything herein to the contrary, for purposes of calculating interest accruals at the Muni-CPI Rate for any interest period, the Interest Payment Dates shall be deemed to be June 15 and December 15, without regard for whether any of such dates is a Business Day.

At or prior to 12:00 Noon (New York City time) on each Reset Date, the Calculation Agent shall calculate the Floating Rate-CPI applicable to the next succeeding Interest Payment Date and shall supply to the Paying Agent and the Authority the Floating Rate-CPI so determined and the number of days in the period to which such Floating Rate-CPI applies in writing or by electronic communication promptly confirmed in writing. The calculation of the Floating Rate-CPI by the Calculation Agent shall be final and conclusive and binding on the Paying Agent, the holders of the Muni-CPI Bonds and the Authority, absent manifest error.

There will be no adjustment to the principal amount of the Muni-CPI Bonds at maturity or at any other time during the term of the Muni-CPI Bonds. The amount that holders of the Muni-CPI Bonds will receive at maturity is equal to the principal amount of Muni-CPI Bonds purchased by such holders.

*Example.* Assume that the Constant Rate is 1.35%, the Reference CPI-U for the current Interest Payment Date is 176.52667 and the Initial CPI-U is 173.83548. Further assume that the actual number of days in the current interest period are 183, and that the calculation year is not a leap year, so that the actual number of days in the year are 365. The Floating Rate-CPI and the amount of interest paid on \$1,000 of principal amount of Muni-CPI Bonds for such interest period would be as follows:

$$\begin{aligned}
 \text{Floating Rate-CPI} &= \frac{176.52667 - 173.83548}{173.83548} \times \frac{365}{183} \\
 &= .0308779 \\
 &= .030877 \text{ (truncated to six decimal places)} \\
 \text{Floating Rate-CPI} &= .03088 \text{ (rounded to five decimal places)} \\
 \text{Muni-CPI Rate} &= .0135 + .03088 \\
 &= .04438
 \end{aligned}$$

Amount of interest paid for the calculation period on \$1,000 principal amount of Muni-CPI Bonds:

$$\begin{aligned}
 \text{Interest Paid} &= 4.438\% \times \frac{183}{365} \times \$1,000 \\
 &= \$22.25
 \end{aligned}$$

The numbers in the foregoing example were provided by the Calculation Agent and are given for illustration and information purposes only and are in no way a prediction of the CPI-U or interest rates on the Muni-CPI Bonds offered hereby. The constant rate used in the foregoing example is not the Constant Rate applicable to the Muni-CPI Bonds.

### **Description of CPI-U**

The CPI-U is a measure of the average change in consumer prices over time in a fixed market basket of goods and services, including food, clothing, shelter, fuels, transportation, charges for doctors' and dentists' services, and drugs. In calculating the CPI-U, price changes for the various items are averaged together with weights that represent their importance in the spending of urban households in the United States. The contents of the market basket of goods and services and the weights assigned to the various items are updated periodically to take into account changes in consumer expenditure patterns.

The CPI-U is expressed in relative terms in relation to a time base reference period for which the level is set at 100. For example, if the CPI-U for the 1982-1984 reference period is 100.0, an increase of 16.5 percent from that period would be shown as 116.5. The CPI-U for a particular month is generally released and published in the following month. From time to time, the CPI-U is rebased to a more recent base reference period. The base reference period for the Muni-CPI Bonds will be the 1982-1984 period with an average of 100.0. This is the same base reference period used by the U.S. Treasury for purposes of calculating the inflation adjustment for the Treasury Inflation-Protection Securities first auctioned on April 15, 1999 (CUSIP # 912810FH6).

**If a previously reported CPI-U index rate is revised, the Muni-CPI Bonds will continue to use the previously reported CPI-U in calculating interest payments. If CPI-U is rebased to a different year, the Muni-CPI Bonds will continue to use the CPI-U based on the base reference year in effect when the Muni-CPI Bonds were issued.**

While a Treasury Inflation-Protection Security is outstanding, if the CPI-U is (1) discontinued, (2) in the judgment of the Secretary of the U.S. Treasury, fundamentally altered in a manner materially adverse to the interests of an investor in Treasury Inflation-Protection Securities, or (3) in the judgment of the Secretary of the U.S. Treasury, altered by legislation or executive order in a manner materially adverse to the interest of an investor in Treasury Inflation-Protection Securities (each, a "Material Alteration"),

the U.S. Treasury has announced that it will consult with the Bureau of Labor Statistics, or any successor agency, to determine an appropriate substitute index and methodology for linking the two series. The U.S. Treasury has indicated that it will notify the public of the substitute index and methodology (the “Substitute Index and Methodology”). Determinations of the Secretary of the U.S. Treasury in this regard will be final. If the U.S. Treasury announces a Substitute Index and Methodology for determining the CPI-U while a Treasury Inflation-Protection Security is outstanding, the Muni-CPI Rate will be calculated based on such Substitute Index and Methodology. Determination of the Calculation Agent of the Muni-CPI Rate utilizing the Substitute Index and Methodology will be final absent manifest error.

For any Reference Date, if (i) while a Treasury Inflation-Protection Security that requires a determination of the CPI-U for such Reference Date (the “Reference TIP”) is outstanding, a Material Alteration has occurred, and the U.S. Treasury has not notified the public of a Substitute Index and Methodology or (ii) while a Reference TIP is not outstanding, and in the judgment of the Calculation Agent the CPI-U is discontinued or fundamentally altered in a manner materially adverse to the interests of an investor in the Muni-CPI Bonds or altered by legislation or Executive Order in a manner materially adverse to the interests of an investor in the Muni-CPI Bonds, then the Calculation Agent will determine an appropriate substitute index and methodology for determining the CPI-U for such Reference Date, which, in the judgment of the Calculation Agent, will result in interest payments on the Muni-CPI Bonds which are substantially the same as those which would have been calculated utilizing the methodology for determining CPI-U applicable on the date of issuance of the Muni-CPI Bonds. Determinations of the Calculation Agent in this regard will be final.

If the CPI-U for a particular month is not reported by the last day of the following month, the U.S. Treasury has indicated that it will announce an index number based on the last twelve-month change in the CPI-U available (the “Substitute Index Number”). Any calculations of the Authority’s payment obligations on the Muni-CPI Bonds that rely on that month’s CPI-U will be based on the Substitute Index Number. The formula for calculating the Substitute Index Number to be used is:

$$\text{Reference CPI-U}_M = \text{CPI - U}_{M-1} \times \left[ \frac{\text{CPI - U}_{M-1}}{\text{CPI - U}_{M-13}} \right]^{1/12}$$

This Substitute Index Number will be used for all subsequent calculations that rely on that month’s index number and will not be replaced by the actual CPI-U when it is reported. Generalizing for the last reported CPI-U issued N months prior to month M:

$$\text{Reference CPI-U}_M = \text{CPI - U}_{M-N} \times \left[ \frac{\text{CPI - U}_{M-N}}{\text{CPI - U}_{M-N-12}} \right]^{N/12}$$

\_\_\_\_\_   
 M = current month

In the event that the Secretary of the U.S. Treasury has not announced a Substitute Index Number pursuant to the immediately preceding paragraph, then the Calculation Agent will determine the Substitute Index Number based on the formula set forth above.

**BONDHOLDER’S CONSIDERATIONS**

Holders of the Muni-CPI Bonds should note that the Muni-CPI Rate will increase or decrease on each Interest Payment Date as the Floating Rate-CPI increases or decreases from the Reference Date with respect to the immediately preceding Interest Payment Date. Therefore, application of the Muni-CPI Rate to the par amount will result in lower interest if the Floating Rate-CPI decreases from the Reference Date with respect to the immediately preceding Interest Payment Date and higher interest if the Floating Rate-CPI increases from the Reference Date with respect to the immediately preceding Interest Payment Date. If for any Interest Payment Date the sum of the Floating Rate-CPI and the Constant Rate is zero or a negative number, the Muni-CPI Rate for such period will be zero.



An investor in securities (such as the Muni-CPI Bonds) with interest determined by reference to an inflation index should consider factors in addition to the creditworthiness of the Authority and factors which are not associated with an investment in securities with interest determined by reference to a fixed rate, floating rate or other index-linked rate. Such factors may include, without limitation, the volatility of the CPI-U, the amount of other securities linked to the CPI-U, the level, direction and volatility of the market interest rates generally, the possibility that the inflation index may be subject to significant changes, that changes in the inflation index may or may not correlate to changes in interest rates generally or with changes in other indices and that the resulting interest may be greater or less than that payable on other securities of similar maturities. **In addition, in the event of a reduction in the rate of increase in the inflation index or deflation, the amount of the semiannual interest payments may decrease or may be zero.**

The value of the inflation index depends on a number of factors over which the Authority has no control, including economic, financial and political events. The historical experience of the inflation index should not be taken as an indication of its performance during the term of the Muni-CPI Bonds. While the CPI-U measures changes for prices in goods and services, movements in the CPI-U that have occurred in the past are not necessarily indicative of changes that may occur in the future.

The Muni-CPI Rate or interest on the Muni-CPI Bonds is determined in arrears on the basis of the CPI-U released approximately three months prior to the applicable Interest Payment Date. The three-month lag period in the calculation of interest on the Muni-CPI Bonds may have an impact on the trading prices of the Muni-CPI Bonds, particularly during periods of significant, rapid changes in the CPI-U. There can be no assurance that accrued interest determined prior to the determination of the Reference CPI-U will accurately reflect the rate payable on the next succeeding Interest Payment Date.

Tax-exempt municipal securities bearing interest at a Muni-CPI Rate are new investment instruments. There can be no assurance that a secondary market for the Muni-CPI Bonds will develop or, if a secondary market does develop, that it will continue or that it will provide owners of the Muni-CPI Bonds with liquidity of investment. In addition, as a new product, the Muni-CPI Bonds may not be widely traded or as well understood as fixed rate, floating rate or other index-linked securities. Less liquidity and fewer market participants may result in larger spreads between bid and asked prices for the Muni-CPI Bonds than the bid-asked spreads for fixed rate, floating rate or other index-linked securities of the same maturity. Larger bid-asked spreads normally result in higher transaction costs and/or lower overall returns. The liquidity of the Muni-CPI Bonds may be enhanced over time as other issuers of tax-exempt bonds issue similar securities, or as more entities participate in the market for inflation-protection securities, generally.

### **INTEREST RATE SWAP AGREEMENT**

In connection with the issuance of the Muni-CPI Bonds, the Authority expects that, in compliance with its Derivatives Policy adopted June 20, 2002, it will enter into an interest rate exchange agreement (the "Swap Agreement") with Morgan Stanley Capital Services Inc. ("MSCS"), the obligations of which are guaranteed by Morgan Stanley Dean Witter & Co., each an affiliate of Morgan Stanley & Co. Incorporated, one of the Underwriters and the Calculation Agent for the Muni-CPI Bonds, pursuant to the terms of which the Authority is required to pay a fixed interest rate and is entitled to receive a floating interest rate equal to the Muni-CPI Rate, each based on a notional amount equal to the principal amount of the Muni-CPI Bonds.

As a result of entering into the Swap Agreement, the Authority expects to achieve reduced financing costs and to reduce the risk to the Authority associated with the fluctuation in inflation rates.

The agreement by MSCS to make payments to the Authority under the Swap Agreement does not affect the Authority's obligation to pay the principal of, interest on, and premium, if any, on any of the Muni-CPI Bonds. The Trustee and the Bondholders will have no recourse against MSCS or Morgan Stanley Dean Witter & Co.

Under certain circumstances, the Swap Agreement is subject to early termination prior to its scheduled termination date and prior to the maturity of the Muni-CPI Bonds, in which event, the Authority may be obligated to make a substantial payment to MSCS.



