NEW ISSUE

In the opinions of Nixon Peabody LLP and Hardwick Law Firm, LLC, Co-Bond Counsel, under existing law and assuming compliance with the tax covenants described herein, and the accuracy of certain representations and certifications of the Authority described herein, interest on the Fiscal 2019 BB 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"). Co-Bond Counsel are also of the opinion that such interest is not treated as a preference item in calculating the alternative minimum tax imposed under the Code. Co-Bond Counsel are further of the opinion that under existing law, interest on the Fiscal 2019 BB Bonds is exempt from personal income taxes imposed by the State of New York or any political subdivision thereof (including The City of New York). See "TAX MATTERS" herein.

$100,000,000
New York City
Municipal Water Finance Authority

Water and Sewer System Second General Resolution Revenue Bonds, Adjustable Rate Fiscal 2019 Series BB

Dated: Date of Delivery **Due: June 15, 2051**

The Fiscal 2019 BB 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 2019 BB Bonds. Purchases of beneficial interests in such Fiscal 2019 BB Bonds will be made in book-entry-only form. Purchasers will not receive certificates representing the ownership interest in the Fiscal 2019 BB Bonds purchased by them. See "APPENDIX G — BOOK-ENTRY-ONLY FORM."

Interest is payable on the Fiscal 2019 BB Bonds bearing interest at a Daily Rate, a Two-Day Rate or a Weekly Rate on the 15th day of each month, commencing October 15, 2018. The Fiscal 2019 BB Bonds bearing interest at the Daily Rate, a Two-Day Rate or a Weekly Rate may be tendered to the Tender Agent for purchase at the option of the Bondholder thereof under the circumstances described herein. The Fiscal 2019 BB Bonds are also subject to mandatory tender and to redemption prior to maturity, as described herein.

Liquidity support for the payment of the Purchase Price (as hereinafter defined) of tendered but unremarketed Fiscal 2019 BB Bonds is provided by Industrial and Commercial Bank of China Limited, New York Branch (the "Liquidity Provider").

The obligations of the Liquidity Provider are subject to immediate and automatic termination or suspension without notice upon the occurrence of certain events described herein. The Fiscal 2019 BB Bonds will not be subject to mandatory tender for purchase upon such termination or suspension. Any failure to pay the Purchase Price of Fiscal 2019 BB Bonds tendered for purchase is not an event of default under the Second Resolution. Upon any such failure the Fiscal 2019 BB Bonds will continue to be held by the tendering Bondholders and will bear interest from the Tender Date at the Maximum Rate. See "LIQUIDITY FACILITY FOR THE FISCAL 2019 BB BONDS."

The Fiscal 2019 BB Bonds are special obligations of the Authority, payable solely from and secured by a pledge of and subordinate lien on the gross revenues of the System. The Authority has no taxing power. The Fiscal 2019 BB Bonds are not a debt of the State of New York, The City of New York or the New York City Water Board and none of the State of New York, The City of New York or the New York City Water Board is liable on the Fiscal 2019 BB Bonds.

The Fiscal 2019 BB Bonds are offered when and if issued by the Authority and received by the Underwriter and subject to the approval of legality by Nixon Peabody LLP, New York, New York, and Hardwick Law Firm, LLC, New York, New York, Co-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 Orrick, Herrington & Sutcliffe LLP, New York, New York, and D. Seaton and Associates, P.A., P.C., New York, New York. It is anticipated that the Fiscal 2019 BB Bonds will be available for delivery to The Depository Trust Company in New York, New York, on or about September 13, 2018.

Jefferies

September 6, 2018

$100,000,000
New York City
Municipal Water Finance Authority

Water and Sewer System Second General Resolution Revenue Bonds, Adjustable Rate
Fiscal 2019 Series BB

Price: 100%
Maturity Date: June 15, 2051
Rate Mode at Delivery Date: Two-Day
First Interest Payment Date: October 15, 2018
Liquidity Provider: Industrial and Commercial Bank of China Limited, New York Branch
Scheduled Termination Date: September 10, 2021
CUSIP[1]: 64972GSC9

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New York City Municipal Water Finance Authority
255 Greenwich Street, 6th Floor
New York, New York 10007
212-788-5889

Board of Directors	
Melanie Hartzog, *ex officio*	*Member*
Basil Seggos, *ex officio*	*Member*
Jacques Jiha, *ex officio*	*Member*
Vincent Sapienza, P.E., *ex officio*	*Member*
Marc V. Shaw	*Member*
Max Von Hollweg	*Member*

Officers	
Alan L. Anders	*Chief Executive Officer*
Olga Chernat	*Executive Director*
Sanna Wong-Chen	*Deputy Executive Director*
Prescott D. Ulrey	*Secretary*
Jeffrey M. Werner	*Assistant Secretary*
Albert Rodriguez	*Assistant Secretary*
Robert L. Balducci	*Comptroller*
Nameca Sharma	*Assistant Comptroller*
Jason Rhee	*Assistant Treasurer*
Laura Tarbox	*Assistant Treasurer*

New York City Water Board
59-17 Junction Boulevard, 8th Floor
Flushing, New York 11373-5108
718-595-4032

Water Board	
Alfonso L. Carney, Jr.	*Chair*
Tawan Davis	*Member*
Evelyn Fernandez-Ketcham	*Member*
Adam Freed	*Member*
Jonathan E. Goldin	*Member*
Jukay Hsu	*Member*
Arlene M. Shaw	*Member*

Officers	
Joseph Murin	*Executive Director*
Omar A. Nazem	*Treasurer*
Albert Rodriguez	*Secretary*

Authority Consultants

Co-Bond Counsel	*Nixon Peabody LLP*
	Hardwick Law Firm, LLC
Consulting Engineer	*AECOM USA, Inc.*
Financial Advisors	*Lamont Financial Services Corporation*
	Drexel Hamilton, LLC
Rate Consultant	*Amawalk Consulting Group LLC*

This Official Statement does not constitute an offer to sell or the solicitation of an offer to buy any of the Fiscal 2019 BB Bonds in any jurisdiction to any person to whom it is unlawful to make such offer or solicitation 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 2019 BB Bonds and if given or made, such information or representation must not be relied upon. Neither the delivery of this Official Statement nor the sale of any of the Fiscal 2019 BB 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.

The factors affecting the Authority's financial condition are complex. This Official Statement should be considered in its entirety and no one factor considered less important than any other by reason of its location herein. Where agreements, reports or other documents are referred to herein, reference should be made to such agreements, reports or other documents for more complete information regarding the rights and obligations of parties thereto, facts and opinions contained therein and the subject matter thereof. Any electronic reproduction of this Official Statement may contain computer-generated errors or other deviations from the printed Official Statement. In any such case, the printed version controls.

This Official Statement contains forecasts, projections and estimates that are based on expectations and assumptions which existed at the time such forecasts, projections and estimates were prepared. The inclusion in this Official Statement of such forecasts, projections and estimates should not be regarded as a representation by the Authority, its independent auditors or the Underwriters that such forecasts, projections and estimates will occur. Such forecasts, projections and estimates are not intended as representations of fact or guarantees of results.

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.

The Underwriter has reviewed the information in this Official Statement pursuant to its responsibilities to investors under the federal securities laws, but the Underwriter does not guarantee the accuracy or completeness of such information.

The Liquidity Provider has no responsibility for the form and content of this Official Statement, other than solely with respect to the information describing itself set forth in Appendix I under the heading "CERTAIN INFORMATION CONCERNING INDUSTRIAL AND COMMERCIAL BANK OF CHINA LIMITED, NEW YORK BRANCH," and has not independently verified, makes no representation regarding, and does not accept any responsibility for the accuracy or completeness of this Official Statement or any information or disclosure contained herein or omitted herefrom, other than solely with respect to the information describing itself set forth in Appendix I under the heading "CERTAIN INFORMATION CONCERNING INDUSTRIAL AND COMMERCIAL BANK OF CHINA LIMITED, NEW YORK BRANCH".

Marks Paneth LLP, the Authority's independent auditor has not reviewed, commented on or approved, and is not associated with, this Official Statement. The report of Marks Paneth LLP relating to the Authority's financial statements for the fiscal years ended June 30, 2017 and 2016, which is a matter of public record, is included in this Official Statement. However, Marks Paneth LLP has not performed any procedures on any financial statements or other financial information of the Authority, including without limitation any of the information contained in this Official Statement, since the date of such report and has not been asked to consent to the inclusion of its report in this Official Statement.

References to website addresses presented herein are for informational purposes only and may be in the form of a hyperlink solely for the reader's convenience. Unless specified otherwise, such websites and the information or links contained therein are not incorporated into, and are not part of, this Official Statement for the purposes of Rule 15c2-12 adopted by the United States Securities and Exchange Commission under the Securities Exchange Act of 1934.

IN CONNECTION WITH THIS OFFERING, THE UNDERWRITER MAY OVERALLOT OR EFFECT TRANSACTIONS WHICH STABILIZE OR MAINTAIN THE MARKET PRICE OF THE FISCAL 2019 BB BONDS AT A LEVEL ABOVE THAT WHICH MIGHT OTHERWISE PREVAIL IN THE OPEN MARKET. SUCH STABILIZING, IF COMMENCED, MAY BE DISCONTINUED AT ANY TIME.

THESE SECURITIES HAVE NOT BEEN RECOMMENDED BY ANY FEDERAL OR STATE SECURITIES COMMISSION OR REGULATORY AUTHORITY. FURTHERMORE, THE FOREGOING AUTHORITIES HAVE NOT CONFIRMED THE ACCURACY OR DETERMINED THE ADEQUACY OF THIS DOCUMENT. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE. IN MAKING AN INVESTMENT DECISION, INVESTORS MUST RELY ON THEIR OWN EXAMINATION OF THIS OFFICIAL STATEMENT AND THE TERMS OF THE OFFERING, INCLUDING THE MERITS AND RISKS INVOLVED.

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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.

Use of Proceeds:	The proceeds of the Authority's Water and Sewer System Second General Resolution Revenue Bonds, Fiscal 2019 Series BB (the "Fiscal 2019 BB Bonds") are expected to be applied to (i) pay costs of improvements to the System and (ii) pay certain costs of issuance.
Description of the Bonds:	The Fiscal 2019 BB Bonds are being issued by the Authority in the principal amount of $100,000,000 pursuant to its Water and Sewer System Second General Revenue Bond Resolution, adopted on March 30, 1994, as amended (the "Second Resolution"), and its Supplemental Resolution No. 138 expected to be adopted on September 7, 2018. The Fiscal 2019 BB Bonds are issued in book-entry-only form and in authorized denominations of $100,000 and integral multiples of $5,000 in excess thereof.

Ratings:

Rating Agency	*Long-Term Rating*	*Short-Term Rating*
S&P:	AA+	A-1
Fitch:	AA+	F1
Moody's:	Aa1	VMIG 1

Redemption Provisions:	The Fiscal 2019 BB Bonds are subject to redemption and optional and mandatory purchase prior to maturity as described herein.
The System:	The Water System provides approximately 1,000 million gallons per day ("mgd") of water to approximately 834,000 accounts in the City. It supplies water to approximately 9.6 million residents, of which approximately 8.6 million are in the City and the balance are in Westchester, Putnam, Orange and Ulster Counties. The Sewer System is comprised of an extensive network of sewage collection and treatment facilities that treat approximately 1,250 mgd of wastewater. 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.

Revenue Bond Coverage (Cash Basis):

	Historical (1) (in millions)			Projected (1) (2)	
	FY 2015	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**
Revenues Available for First Resolution Debt Service	$3,911.5	$3,960.7	$3,981.4	$3,800.1	$3,866.1
Authority Expenses	45.3	47.0	50.9	53.3	56.2
Revenues Available for First and Second Resolution Debt Service	3,866.2	3,913.7	3,930.5	3,746.8	3,809.9
Board Expenses	33.4	35.7	43.9	50.0	51.2
Net Operating Expenses (3)	1,331.8	1,259.7	1,225.5	1,421.2	1,485.1
Cash Financed Capital Construction (4)	25.6	—	—	75.0	550.0
Cash Defeasance of Debt	802.7	948.6	974.1	825.0	—
Base Rental Payment to the City of New York	204.0	137.0	—	—	—
Deposits to O&M Reserve Fund	3.5	21.9	(13.5)	—	2.3
Total Expenses (5)	2,446.3	2,449.9	2,280.9	2,424.5	2,144.8
Total First Resolution Debt Service	198.4	120.7	107.7	76.5	136.9
Net Debt Service on FGR Subordinated Indebtedness (6)	257.1	404.1	388.7	279.5	608.4
Non-Recurring Cash Receipts / Escrow Release	(1.8)	(35.2)	(8.3)	(16.6)	(16.6)
Net Year-end Balance	$1,012.0	$1,021.2	$1,212.3	$1,036.2	$ 992.7
First Resolution Debt Service Coverage	19.72x	32.81x	36.97x	49.67x	28.24x
First and Second Resolution Debt Service Coverage (6) (7)	8.49x	7.46x	7.92x	10.53x	5.11x
Rate Increase	3.35%	2.97%	0.00%	0.00%(8)	2.36%(8)

Totals may not add due to rounding. Figures are calculated on a cash basis.

(1) Historical figures, which are derived from the accounting records used to prepare the statements of cash flows contained in the annual financial statements, and projected figures are shown on a cash basis.

(2) Projections are as of June 1, 2018.

(3) Includes credits or charges for prior year O&M payment reconciliation. Excludes Authority and Board expenses.

(4) Funds may also be used for the defeasance of Authority debt.

(5) Includes Authority and Board Expenses.

(6) Includes interest on Commercial Paper Notes and reflects offset of carryforward revenues and subsidies provided by the New York State Environmental Facilities Corporation.

(7) Revenues for coverage purposes are net of Authority expenses.

(8) Actual rate increase.

Total Authority Debt Outstanding: As of the date of this Official Statement, the Authority has approximately $1.6 billion of First Resolution Bonds (defined below) and $28.1 billion of Second Resolution Bonds (defined below) Outstanding, not including $407.2 million in draws on bond anticipation notes issued to the New York State Environmental Facilities Corporation (the "Corporation"). See "CAPITAL IMPROVEMENT AND FINANCING PROGRAM—Debt Service Requirements." In addition, the Authority has a $600 million commercial paper program, none of which is currently Outstanding.

Capital Program: The City's Ten Year Capital Strategy, which is updated every two years, was released on April 26, 2017 (the "Ten Year Capital Strategy"). The Ten Year Capital Strategy includes the projected contractual commitments for capital improvements to the System for Fiscal Years 2018 through 2027. The City's Current Capital Plan (the "Current Capital Plan"), which covers Fiscal Years 2018 through 2022, was published on April 26, 2018, is typically updated three times each Fiscal Year, and supersedes the Ten Year Capital

	Strategy for Fiscal Years 2018 through 2022. Projected contractual commitments for capital improvement costs to the System for Fiscal Years 2018 through 2027 are reflected in the Capital Improvement Program (the "CIP"), which consists of the Current Capital Plan and the last five years of the Ten Year Capital Strategy. The CIP is designed to maintain a satisfactory level of service, to improve operation of the System and to address future System requirements.
Bond Financing Program:	The following table shows, as of June 1, 2018, total Bonds expected to be issued, excluding refunding bonds, from Fiscal Year 2019 to Fiscal Year 2022.

FY 2019	FY 2020	FY 2021	FY 2022	Period Total
		(Millions of Dollars)		
$1,893	$1,721	$1,778	$2,086	$7,478

As of the date of this Official Statement, during Fiscal Year 2019 the Authority has not issued any Second Resolution Bonds, not including refunding bonds and draws on bond anticipation notes.

Security for the Second Resolution Bonds:	
Revenue Pledge:	The Second Resolution Bonds are special obligations of the Authority, payable solely from and secured by a pledge of amounts on deposit in the FGR Subordinated Indebtedness Fund established under the First Resolution and all moneys and securities in any of the funds and accounts established under the Second Resolution, except the Arbitrage Rebate Fund and the Debt Service Reserve Fund.
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 First Resolution Bonds Outstanding and on any Projected Series of First Resolution 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 FGR Subordinate Indebtedness) to the extent required to be paid from Revenues for such Fiscal Year.
Additional Bonds Test:	Additional Second Resolution Bonds may be issued for capital purposes under the Second Resolution only if the Revenues for either of the last two Fiscal Years preceding the Fiscal Year in which the Second Resolution 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 FGR Subordinated Indebtedness issued on parity with Second Resolution Bonds (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 (excluding Required

	Deposits for the payment of Outstanding Second Resolution Bonds and certain other FGR Subordinated Indebtedness issued on parity with Second Resolution Bonds). Second Resolution Refunding Bonds may be issued under the Second Resolution either upon satisfaction of such conditions or other conditions.
No Debt Service Reserve Fund:	The Fiscal 2019 BB Bonds will not be secured by the Debt Service Reserve Fund.
Summary of Certain Legal Opinions:	Co-Bond Counsel have 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. Co-Bond Counsel have also opined that under current law neither the Board nor the Authority qualifies as a debtor under the United States Bankruptcy Code.
Rates:	Rates, fees and charges are imposed by the Board and are not subject to regulatory approval except for those rates charged to a limited class of upstate users representing approximately 2.2% 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 First Resolution Bonds, Second Resolution Bonds or other indebtedness of the Authority.

OFFICIAL STATEMENT

$100,000,000
NEW YORK CITY MUNICIPAL WATER FINANCE AUTHORITY
WATER AND SEWER SYSTEM SECOND GENERAL RESOLUTION REVENUE BONDS, ADJUSTABLE RATE FISCAL 2019 SERIES BB

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 Water and Sewer System Second General Resolution Revenue Bonds, Adjustable Rate Fiscal 2019 Series BB (the "Fiscal 2019 BB 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 "First Resolution" and, bonds issued thereunder the "First Resolution 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 2019 BB Bonds will be issued by the Authority pursuant to its Water and Sewer Second General Revenue Bond Resolution adopted on March 30, 1994, as amended (the "Second Resolution"), and its Supplemental Resolution No. 138 expected to be adopted on September 7, 2018 (the "Fiscal 2019 BB Supplemental Resolution"). All bonds issued under the Second Resolution are referred to herein as "Second Resolution Bonds." The Second Resolution and the Fiscal 2019 BB Supplemental Resolution are collectively referred to herein as the "Resolutions." U.S. Bank, National Association 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 Second Resolution.

The Second Resolution Bonds are special obligations of the Authority, payable solely from and secured by a pledge of amounts on deposit in the FGR Subordinated Indebtedness Fund established by the First Resolution and all moneys or securities in any of the funds and accounts established under the Second Resolution, subject only to provisions of the Second 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 all First Resolution Bonds to become due in such Fiscal Year on all First Resolution 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 SECOND RESOLUTION 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 SECOND RESOLUTION 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 2.2% of Revenues. See "RATES AND BILLINGS."

The federal administration has discussed changes in existing federal spending programs, as well as regulations which could affect the System and the Authority. It is not possible at this time to predict what form these changes may ultimately take and, when taken as a whole, the effect they will have on the System and the Authority.

The Authority has relied upon AECOM USA, Inc. ("AECOM"), its Consulting Engineer, for certain engineering feasibility information and upon Amawalk Consulting Group LLC ("Amawalk Consulting"), 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 bond financings, operating and maintenance expenses, debt service, revenues, sources and uses of funds, and forecasted cash flows and rate increases, were prepared as of June 1, 2018, and are expected to be updated annually. Actual financial results will differ from these projections.

PLAN OF FINANCE

The proceeds of the Fiscal 2019 BB Bonds are expected to be applied to pay cost of improvements to the System and pay certain costs of issuance.

USE OF PROCEEDS

The proceeds of the Fiscal 2019 BB Bonds are anticipated to be applied in the following manner:

Deposit to Construction Fund	$ 99,526,060
Underwriter Discount	112,390
Costs of Issuance	361,550
Par Amount of the Fiscal 2019 BB Bonds	$100,000,000

AMENDMENTS OF THE SECOND RESOLUTION

In October 2015, the Authority adopted its One-Hundred and Fifteenth Supplemental Resolution providing for the amendment of the Second Resolution. As more fully described in Appendix C, such amendment will become effective immediately with respect to the Fiscal 2019 BB Bonds, but only to the extent moneys are separately segregated or allocated to the Fiscal 2019 BB Bonds, and with respect to all Second Resolution Bonds upon consent thereto of the holders of at least a majority of the principal amount of Outstanding Second Resolution Bonds. The amendment to the Second Resolution would amend the following definitions of the Second Resolution: (i) "Defeasance Obligations," (ii) "Investment Securities," and (iii) "Ratings Agencies". The amendment to the Second Resolution amends the definitions of (i) "Defeasance Obligations" to clarify the use of certain securities issued or guaranteed by federal instrumentalities or government sponsored enterprises provided, at the time acquired, it is rated in the highest category by at least two Rating Agencies, one of which maintains a rating on the Outstanding Second Resolution Bonds; (ii) "Investment Securities" to include obligations of any state, agency, political subdivision or public authority within the United States, provided, at the time acquired, it is rated in the highest category by at least two Rating Agencies, one of which maintains a rating on the Outstanding Second Resolution Bonds; to provide that substantially all of the Investment Securities must be rated in one of the two highest rating categories by at least two Rating Agencies; to include repurchase agreements collateralized by certain obligations of any state, agency, political subdivision or public authority within the United States and require collateral valuation no less than weekly and (iii) "Ratings Agencies" mean nationally recognized statistical rating organizations ("NRSROs") registered with the Securities and Exchange Commission. The proposed amended definitions are set forth in Appendix C under the caption "Glossary — Definition of Certain Terms Used in the Second Resolution."

The Authority may seek the consent of the holders of currently Outstanding Second Resolution Bonds and will seek the consent of the holders of Second Resolution Bonds to be issued in the future in order to obtain the consent of at least a majority of the holders of Outstanding Bonds. As of September 5, 2018, the Authority had received consents from the holders of $11.4 billion of the $28.1 billion (or approximately 40.7%) of currently Outstanding Second Resolution Bonds.

By acceptance of a confirmation of purchase of the Fiscal 2019 BB Bonds, each Beneficial Owner (*i.e.,* the actual purchasers of the Fiscal 2019 BB Bonds) will be deemed to have approved and agreed to the amendment of the Second Resolution described herein.

THE FISCAL 2019 BB BONDS

General

This Official Statement describes the Fiscal 2019 BB Bonds only while they are in a Daily Rate Mode, a Two-Day Rate Mode or a Weekly Rate Mode. The Liquidity Facility does not support the payment of Fiscal 2019 BB Bonds in the Daily Rate Mode. It is a condition for conversion to a Daily Rate Mode, Two-Day Rate Mode or Weekly Rate Mode that a Credit Facility covering such Mode be in place.

The Fiscal 2019 BB Bonds will be issued in the aggregate principal amount, and maturing on the date, as set forth on the inside cover. The Fiscal 2019 BB Bonds will initially bear interest at the Two-Day Rate. Interest is payable on the Fiscal 2019 BB Bonds bearing interest at a Daily Rate, a Two-Day Rate or a Weekly Rate on the 15th day of each month (or, if such day is not a Business Day, on the next succeeding Business Day), commencing October 15, 2018. The Fiscal 2019 BB Bonds are subject to redemption prior to maturity as described under "Redemption" and to optional and mandatory tender for purchase as described under "Optional Tender for Purchase" and "Mandatory Tender for Purchase." The Fiscal 2019 BB Bonds will continue in a Two-Day Rate Period from the date of their issuance until converted to another Rate Period and will bear interest at a rate determined in accordance with the procedures for determining the interest rate during such Rate Period. See "Conversion to an Alternate Rate Period" and "Interest Rates and Reset Dates" below.

Principal and Purchase Price of, and redemption premium, if any, and interest on, the Fiscal 2019 BB Bonds will be payable in lawful moneys of the United States of America. The Fiscal 2019 BB Bonds will be issued only as fully registered bonds without coupons in minimum denominations of $100,000 and integral multiples of $5,000 in excess thereof when the Rate Period is the Daily Rate Period, the Two-Day Rate Period or the Weekly Rate Period. During the Daily Rate Period, the Two-Day Rate Period or the Weekly Rate Period, interest will be computed on the basis of a 365-day or 366-day year for the actual number of days elapsed.

U.S. Bank National Association has been appointed as Tender Agent for the Fiscal 2019 BB Bonds. Jefferies LLC has been appointed as the Remarketing Agent for the Fiscal 2019 BB Bonds (the "Remarketing Agent").

Record Dates and Interest Payment Dates

Record Dates. Interest on the Fiscal 2019 BB Bonds will be payable to the registered owner thereof as shown on the registration books kept by the Trustee at the close of business on the Record Date which will be the immediately preceding Business Day prior to a Bond Payment Date for Fiscal 2019 BB Bonds in a Daily Rate Period, Two-Day Rate Period or Weekly Rate Period.

Bond Payment Dates. Interest on the Fiscal 2019 BB Bonds will be payable on the 15th day of each calendar month when such Fiscal 2019 BB Bonds bear interest at a Daily Rate, a Two-Day Rate or a Weekly Rate (or, if such day is not a Business Day, on the next succeeding Business Day). Interest payable on each Bond Payment Date for Fiscal 2019 BB Bonds bearing interest in the Daily Rate Mode, the Two-Day Rate Mode or the Weekly Rate Mode will be the interest accruing and unpaid through and including the day preceding such Bond Payment Date. Each Mandatory Tender Date (defined below) will be a Bond Payment Date.

Conversion to an Alternate Rate Period

At the election of the Authority, the Fiscal 2019 BB Bonds may be converted to a different Rate Period by delivering a notice (the "Conversion Notice") to the Remarketing Agent, the provider of any Credit Facility (as defined in Appendix C) (the "Facility Provider"), DTC and the Tender Agent specifying, among other things, the new Rate Mode or Modes to which such Fiscal 2019 BB Bonds are then subject and the conversion date (which shall be a Reset Date or a Bond Payment Date) (a "Conversion Date"). The Authority must deliver such Conversion Notice at least fifteen (15) days prior to the Conversion Date (or if the Fiscal 2019 BB Bonds to be converted are Book-Entry Bonds, such shorter period as DTC will permit). The Tender Agent is to give written notice to the registered owner of each Fiscal 2019 BB Bond of the Authority's election to convert to another Rate Period and the Conversion Date. Such notice is to be given, by first class mail, not later than three calendar days after receipt by the Tender Agent of the Conversion Notice. See "Mandatory Tender for Purchase — *Notices of Mandatory Tender*."

No Fiscal 2019 BB Bonds may be converted from a Rate Mode to a new Rate Mode unless the Trustee and Tender Agent have received an Opinion of Bond Counsel by 10:00 a.m., New York City time, on the Conversion Date.

If the election to convert is withdrawn by the Authority, or if the Remarketing Agent notifies the Tender Agent that it is unable to remarket the Fiscal 2019 BB Bonds on the Conversion Date, the Fiscal 2019 BB Bonds will bear interest in the existing Rate Mode or, at the option of the Authority and in compliance with the provisions of the Resolutions regarding conversion of Rate Modes, any other Rate Period, which Rate Period will be in effect from and after the date on which the Rate Period was to be converted. However, if an Opinion of Bond Counsel is not delivered on or prior to the Conversion Date, the Rate Mode for the Fiscal 2019 BB Bonds not converted will be the existing Rate Mode.

Interest Rates and Reset Dates

General. The rate at which the Fiscal 2019 BB Bonds will bear interest during any Rate Period will be the rate of interest that, if borne by such Fiscal 2019 BB Bonds for such Rate Period, in the judgment of the Remarketing Agent, having due regard for the prevailing financial market conditions for revenue bonds or other securities the interest on which is excludable from gross income for federal income tax purposes of the same general nature as Fiscal 2019 BB Bonds and which are comparable as to credit and maturity or tender dates with the credit and maturity or tender dates of the Fiscal 2019 BB Bonds, would be the lowest interest rate that would enable such Fiscal 2019 BB Bonds to be sold at a price equal to the principal amount thereof, plus accrued interest thereon, if any.

"Maximum Rate" means, in the case of the Fiscal 2019 BB Bonds which are not Purchased Bonds, 9% per annum.

Daily Rate Period. The Daily Rate for any Business Day is to be determined by the Remarketing Agent and announced by 10:00 a.m., New York City time, on such Business Day. For any day which is not a Business Day, the Daily Rate will be the Daily Rate for the immediately preceding Business Day.

If for any reason (i) the Daily Rate for a Daily Period is not established, (ii) there is no Remarketing Agent for the Fiscal 2019 BB Bonds, (iii) the Daily Rate is held to be invalid or unenforceable or (iv) pursuant to the Remarketing Agreement the Remarketing Agent is not then required to establish a Daily Rate, then the Daily Rate in effect during the preceding Daily Rate Period will continue in effect on such Fiscal 2019 BB Bonds until a new Daily Rate is determined, but in no event for more than two weeks, and thereafter such Fiscal 2019 BB Bonds will bear interest at the Maximum Rate until a Rate has been duly established by the Remarketing Agent.

Two-Day Rate Period. The Two-Day Rate for any Business Day is to be determined by the Remarketing Agent and announced by 10:00 a.m., New York City time, on the first day of a period during which such Fiscal 2019 BB Bonds bear interest at a Two-Day Rate and on each Monday, Wednesday and Friday thereafter so long as interest on such Fiscal 2019 BB Bonds is to be payable at a Two-Day Rate or, if any Monday, Wednesday or Friday is not a Business Day, on the next Monday, Wednesday or Friday that is a Business Day. The Two-Day Rate set on any Business Day will be effective as of such Business Day and will remain in effect until the next day on which a Two-Day Rate is to be set in accordance with the preceding sentence.

If for any reason (i) the Two-Day Rate for a Rate Period is not established, (ii) there is no Remarketing Agent serving under the Resolutions, (iii) the Two-Day Rate is held to be invalid or unenforceable or (iv) pursuant to the Remarketing Agreement the Remarketing Agent is not then required to establish a Two-Day Rate, then the Two-Day Rate in effect during the preceding Two-Day Rate Period will continue in effect on such Fiscal 2019 BB Bonds until a new Two-Day Rate is determined, but in no event for more than two weeks, and thereafter such Fiscal 2019 BB Bonds will bear interest at the Maximum Rate until a Rate has been duly established by the Remarketing Agent.

Weekly Rate Period. Except as described below, the Weekly Rate is to be determined by the Remarketing Agent and announced by 4 p.m., New York City time, on the Business Day immediately preceding the first day of each Weekly Rate Period. Each Weekly Rate will be in effect for a seven-day period commencing on Thursday and continuing through the next succeeding Wednesday. However, if the Conversion Date upon which a Rate Period has been converted to a Weekly Rate Period is not a Thursday, the initial Weekly Rate will commence on the Conversion Date and will continue through the next succeeding Wednesday which may be less than seven days. The Weekly Rate for such Weekly Rate Period will be determined by the Remarketing Agent and announced by 4:00 p.m., New York City time, on the Business Day before the Conversion Date.

If for any reason (i) the Weekly Rate for a Weekly Rate Period is not established, (ii) no Remarketing Agent is then serving under the Resolutions, (iii) the Weekly Rate is held to be invalid or unenforceable or (iv) pursuant to the Remarketing Agreement, the Remarketing Agent is not then required to establish a Weekly Rate, then, the Weekly Rate for such Weekly Rate Period will be equal to the prior Weekly Rate until a new Weekly Rate is determined, but in no event for more than two weeks, and, afterwards, the Weekly Rate will be equal to the Maximum Rate until the Remarketing Agent determines a Weekly Rate.

Certain Considerations Affecting Adjustable Rate Bonds

The information in this caption "*Certain Considerations Affecting Adjustable Rate Bonds*" was provided by the Remarketing Agent and is not the responsibility of the Authority.

The Remarketing Agent is Paid by the Authority. The Remarketing Agent's responsibilities include determining the interest rate from time to time and remarketing the Fiscal 2019 BB Bonds that are optionally or mandatorily tendered by the Beneficial Owners thereof (subject, in each case, to the terms of the Remarketing Agreement). The Remarketing Agent is appointed by the Authority and is paid by the Authority for its services. As a result, the interests of the Remarketing Agent may differ from those of Beneficial Owners and potential purchasers of Fiscal 2019 BB Bonds.

The Remarketing Agent May Purchase Fiscal 2019 BB Bonds for Its Own Account. The Remarketing Agent acts as remarketing agent for a variety of adjustable rate demand obligations issued by many issuers and, in its sole discretion, may purchase such obligations for its own account. The Remarketing Agent is permitted, but not obligated, to purchase tendered Fiscal 2019 BB Bonds for its own account and, in its sole discretion, may acquire such tendered Fiscal 2019 BB Bonds in order to achieve a successful remarketing of the Fiscal 2019 BB Bonds (*i.e.*, because there otherwise are not enough buyers to purchase the Fiscal 2019 BB Bonds) or for other reasons. However, the Remarketing Agent is not obligated to purchase Fiscal 2019 BB Bonds, and may cease doing so at any time without notice. If the Remarketing Agent ceases to purchase Fiscal 2019 BB Bonds, it may be necessary for the Trustee to draw on the Liquidity Facility to pay tendering Bondholders.

The Remarketing Agent may also sell any Fiscal 2019 BB Bonds it has purchased to one or more affiliated investment vehicles for collective ownership or enter into derivative arrangements with affiliates or others in order to reduce its exposure to the Fiscal 2019 BB Bonds. The purchase of Fiscal 2019 BB Bonds by the Remarketing Agent may create the appearance that there is greater third party demand for the Fiscal 2019 BB Bonds in the market than is actually the case. The practices described above also may result in fewer Fiscal 2019 BB Bonds being tendered.

Fiscal 2019 BB Bonds may be Offered at Prices Other Than Par. Pursuant to the Remarketing Agreement, on each rate determination date, the Remarketing Agent is required to determine the interest rate that will be effective with respect to the Fiscal 2019 BB Bonds on the effective date. That rate is required by the Resolutions to be the lowest rate necessary in the judgment of the Remarketing Agent to remarket the Fiscal 2019 BB Bonds at par, plus accrued interest, if any, on the effective date. At the time the new rate becomes effective, the Remarketing Agent is required to use its best efforts to remarket the Fiscal 2019 BB Bonds at par. The interest rate will reflect, among other factors, the level of market demand for the Fiscal 2019 BB Bonds (including whether the Remarketing Agent is willing to purchase Fiscal 2019 BB Bonds for its own account). There may or may not be Fiscal 2019 BB Bonds tendered and remarketed on an effective date, and the Remarketing Agent may or may not be able to remarket any Fiscal 2019 BB Bonds tendered to it for purchase on such date at par. The Remarketing Agent is not obligated to advise purchasers in a remarketing if it does not have third-party buyers for all of the Fiscal 2019 BB Bonds at the remarketing price.

The Ability to Sell the Fiscal 2019 BB Bonds Other Than Through the Tender Process May Be Limited. The Remarketing Agent may make a secondary market in the Fiscal 2019 BB Bonds by routinely purchasing and selling Fiscal 2019 BB Bonds other than in connection with an optional or mandatory tender and remarketing. However, the Remarketing Agent is not required to make a secondary market in the Fiscal 2019 BB Bonds. Thus, investors who purchase Fiscal 2019 BB Bonds, whether in a remarketing or otherwise, should not assume that they will be able to sell their Fiscal 2019 BB Bonds other than by tendering the Fiscal 2019 BB Bonds in accordance with the tender process. The Liquidity Facility is not available to purchase Fiscal 2019 BB Bonds other than those tendered in accordance with a sale of Fiscal 2019 BB Bonds by the Bondholder to the Remarketing Agent. The Liquidity Facility will only be drawn when the Fiscal 2019 BB Bonds have been properly tendered in accordance with the terms of the transaction.

Under Certain Circumstances, the Remarketing Agent May Cease Remarketing the Fiscal 2019 BB Bonds. Under certain circumstances the Remarketing Agent may cease its remarketing efforts, subject to the terms of the Remarketing Agreement. The Remarketing Agreement provides that, unless the Authority has failed to pay remarketing fees to the Remarketing Agent, the Remarketing Agent may not resign until a successor has been appointed.

Optional Tender for Purchase

A Fiscal 2019 BB Bond or any portion thereof equal to an Authorized Denomination may be tendered for purchase, at the Purchase Price, at the option of its registered owner on any Business Day during a Daily Rate Period, a Two-Day Rate Period or a Weekly Rate Period upon giving notice of the registered owner's election to tender in the manner and at the times described below. Notice of an election to tender a Fiscal 2019 BB Bond registered in the name of Cede & Co., as nominee of DTC, is to be given by the DTC Participant on behalf of the Beneficial Owner of the Fiscal 2019 BB Bonds and will not be given by DTC.

Notice of the election to tender for purchase a Fiscal 2019 BB Bond registered in any other name is to be given by the registered owner of such Fiscal 2019 BB Bond or its attorney-in-fact.

The notice must state the name of the registered owner or the Beneficial Owner and the principal amount of the Fiscal 2019 BB Bond, the principal amount of such Fiscal 2019 BB Bond to be tendered for purchase and the Business Day on which such Fiscal 2019 BB Bond or portion thereof to be tendered for purchase is to be purchased.

A DTC Participant or the registered owner of a Fiscal 2019 BB Bond must give written notice of its irrevocable election to tender such Fiscal 2019 BB Bond or a portion thereof for purchase at its option to the Tender Agent, at its Delivery Office, and to the Remarketing Agent, (i) in the case of Fiscal 2019 BB Bonds bearing interest in a Daily Rate Mode, no later than 11:00 a.m. on any Business Day, (ii) in the case of Fiscal 2019 BB Bonds bearing interest in the Two-Day Rate Mode, no later than 3:00 p.m. on a Business Day at least two (2) Business Days prior to the Business Day on which such Fiscal 2019 BB Bond or portion thereof is to be purchased, and (iii) in the case of Fiscal 2019 BB Bonds bearing interest in a Weekly Rate Mode, by no later than 5:00 p.m., New York City time, on any Business Day which is at least seven (7) days prior to the Business Day on which such Fiscal 2019 BB Bond or portion thereof is to be purchased.

Mandatory Tender for Purchase

The Fiscal 2019 BB Bonds are subject to mandatory tender and purchase at the Purchase Price on the following dates (each a "Mandatory Tender Date"):

(a) on each Conversion Date for Fiscal 2019 BB Bonds being converted to a different Rate Mode other than a conversion between the Daily Rate Mode, the Two-Day Rate Mode and the Weekly Rate Mode;

(b) on the last Business Day of the Daily Rate Period, Two-Day Rate Period or Weekly Rate Period, as the case may be, next preceding the effective date of any expiration or earlier termination of the Credit Facility then in effect if at least fifteen (15) days prior to such expiration or termination date such Credit Facility has not been extended or a substitute Credit Facility has not been obtained;

(c) on the substitution date of a Credit Facility for an existing Credit Facility if, solely as a result of such substitution, any Rating Agency would reduce or withdraw any rating assigned to such Fiscal 2019 BB Bonds;

(d) on the Business Day immediately preceding the date of termination specified in the Notice of Default delivered by a Facility Provider in accordance with the provisions of the Credit Facility; and

(e) on any Business Day determined in the Authority's discretion, upon 10 days' notice to the Holders, subject to the Authority identifying a source of payment therefor in accordance with the

Second Resolution including, but not limited to, the proceeds of refunding bonds to be issued on or before the tender date.

Notices of Mandatory Tenders. Whenever Fiscal 2019 BB Bonds are to be tendered for purchase in accordance with the Resolutions, the Tender Agent will, not less than 15 days prior to the effective date of the expiration or substitution or ten days prior to the effective date of the earlier termination of a Credit Facility then in effect, give notice by first-class mail to the holders of the Fiscal 2019 BB Bonds that the Fiscal 2019 BB Bonds are subject to mandatory tender for purchase on the date specified in such notice, which will be the Business Day preceding the last Business Day of the applicable Rate Mode next preceding the effective date of such expiration or earlier termination.

Fiscal 2019 BB Bonds Deemed Purchased

The Fiscal 2019 BB Bonds or portions thereof required to be purchased upon a tender at the option of the registered owner thereof or upon a mandatory tender will be deemed to have been tendered and purchased for all purposes of the Resolutions, irrespective of whether such Fiscal 2019 BB Bonds have been presented and surrendered to the Tender Agent, if on the Tender Date moneys sufficient to pay the Purchase Price thereof are held by the Tender Agent. The former registered owner of a Tendered Bond or a Fiscal 2019 BB Bond deemed to have been tendered and purchased will have no claim thereunder or under the Resolutions or otherwise for payment of any amount other than the Purchase Price, and such Fiscal 2019 BB Bond or portion thereof will no longer be Outstanding for purposes of the Resolutions. However, the Authority has no obligation to furnish moneys for payment of the Purchase Price of Fiscal 2019 BB Bonds that have been tendered but not remarketed and for which moneys have not been provided for their purchase by a Facility Provider pursuant to a Credit Facility. Such Fiscal 2019 BB Bonds will continue to be held by the tendering Bondholders and will bear interest from the Tender Date at the Maximum Rate.

Purchase Price and Payment

The Purchase Price of a Fiscal 2019 BB Bond will be the principal amount of the Fiscal 2019 BB Bond to be tendered, plus accrued and unpaid interest from the immediately preceding Bond Payment Date.

The Purchase Price of a Fiscal 2019 BB Bond held in a book-entry-only system will be paid, in same-day funds, to DTC in accordance with DTC's standard procedures for effecting same-day payments, as described in "APPENDIX G — BOOK-ENTRY-ONLY FORM." Payment will be made without presentation and surrender of the Fiscal 2019 BB Bonds to the Tender Agent, and DTC will be responsible for effecting payment of the Purchase Price to the DTC Participants.

The Purchase Price of any other Fiscal 2019 BB Bonds will be paid, in same-day funds, only after presentation and surrender of the Fiscal 2019 BB Bond to the Tender Agent at its Delivery Office. Payment will be made by 3:00 p.m., New York City time, on the later of the Tender Date or the Business Day on which a Fiscal 2019 BB Bond is presented and surrendered to the Tender Agent.

The Purchase Price is payable solely from, and in the following order of priority, (i) the proceeds of the remarketing of Fiscal 2019 BB Bonds tendered for purchase, (ii) moneys made available by the Facility Provider under the Credit Facility, (iii) other moneys which have been on deposit with the Trustee or the Tender Agent, as applicable, for at least 124 days prior to and during which no petition by or against the Authority, under the United States Bankruptcy Code of 1978, as amended, 11 U.S.C. Sec. 101 et seq. (the "Bankruptcy Code") has been filed or any bankruptcy or similar proceeding has been commenced, unless such petition or proceeding has been dismissed and such dismissal is final and not subject to appeal, and (iv) any other moneys the application of which to the payment of the Purchase Price of the Fiscal 2019 BB Bonds would not, in the opinion of Bond Counsel, constitute a voidable preference in the case of a filing for protection of the Authority under the Bankruptcy Code (collectively, "Available Moneys"). The Authority has no obligation to furnish moneys under (iii) or (iv) of the preceding sentence.

Remarketing of Fiscal 2019 BB Bonds Upon Tender

Pursuant to the Remarketing Agreement, the Remarketing Agent is required to use its best efforts to remarket Fiscal 2019 BB Bonds tendered or deemed tendered for purchase. The Remarketing Agreement sets forth, among other things, certain conditions to the Remarketing Agent's obligations to remarket Fiscal 2019 BB Bonds. If any of the conditions is not satisfied, or if the Remarketing Agent is otherwise unable to remarket any Fiscal 2019 BB Bonds, the Purchase Price of such Fiscal 2019 BB Bonds will be paid from amounts obtained under the Credit Facility, as described below, or may be paid from any other Available Moneys furnished by or on behalf of the Authority.

On each Tender Date, the Remarketing Agent is to give notice to the Tender Agent specifying the principal amount of Fiscal 2019 BB Bonds which have been tendered for purchase and remarketed. The Tender Agent is, on such Tender Date, to obtain funds under the Credit Facility in accordance with its terms in an amount equal to the difference between the Purchase Price of the Fiscal 2019 BB Bonds subject to purchase and the remarketing proceeds available to the Tender Agent.

The Authority has no obligation to furnish moneys for payment of the Purchase Price and failure to pay the Purchase Price is not an Event of Default under the Resolutions. In the event that Fiscal 2019 BB Bonds tendered for purchase cannot be remarketed and sufficient moneys to pay the Purchase Price are not available from the Facility Provider, the Fiscal 2019 BB Bonds will continue to be held by the tendering Bondholder and will bear interest from the Tender Date at the Maximum Rate.

Redemption

Optional Redemption. The Fiscal 2019 BB Bonds, while they bear interest at a Daily Rate, Two-Day Rate or Weekly Rate, are subject to redemption prior to maturity at the election or direction of the Authority, on any Business Day, in whole or in part, at the redemption price of 100% of the principal amount of the Fiscal 2019 BB Bonds to be redeemed, plus accrued interest, if any, to the redemption date.

Selection of Bonds to be Redeemed

In the event less than all of the Outstanding Fiscal 2019 BB Bonds of like maturity are to be redeemed prior to maturity, the Trustee is to select for redemption, using such method of selection as it deems proper in its discretion, the Purchased Bonds (hereinafter defined) of such maturity, pro rata if less than all of the Purchased Bonds are to be redeemed, before selecting any other Fiscal 2019 BB Bonds of such maturity for redemption. Fiscal 2019 BB Bonds of such maturity which are not Purchased Bonds will be selected by the Trustee in accordance with instructions from the Authority in such manner as the Trustee deems fair and appropriate.

Notice of Redemption

Notice of redemption is to be given by first class mail, postage prepaid, at least 20 days prior to the date fixed for redemption, to the registered owners of Fiscal 2019 BB 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 2019 BB Bonds, notice of redemption is to be sent to DTC at least 20 days prior to the date fixed for redemption or such shorter period as may be provided by DTC. No assurance can be given by the Authority that DTC and DTC participants will promptly transmit notices of redemption to Beneficial Owners.

If, on any redemption date, moneys for the redemption of the Fiscal 2019 BB 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 2019 BB Bonds to be redeemed will cease to accrue from and after the redemption date and such Fiscal 2019 BB Bonds will no longer be considered to be Outstanding under the Second Resolution.

The notice of redemption may provide that the Fiscal 2019 BB 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.

LIQUIDITY FACILITY FOR THE FISCAL 2019 BB BONDS

Liquidity Facility

The Authority will, on the date the Fiscal 2019 BB Bonds are issued, enter into a Standby Bond Purchase Agreement with respect to the Fiscal 2019 BB Bonds (the "Liquidity Facility") with Industrial and Commercial Bank of China Limited, New York Branch (the "Liquidity Provider").

The Liquidity Facility supports only the payment of the purchase price of the Fiscal 2019 BB Bonds bearing interest at a Two-Day Rate or Weekly Rate and does not support the payment of the Fiscal 2019 BB Bonds bearing interest at a Daily Rate.

The obligation of the Authority to repay amounts advanced by the Liquidity Provider under the Liquidity Facility to purchase Fiscal 2019 BB Bonds will be evidenced by the Fiscal 2019 BB Bonds purchased by the Liquidity Provider (the "Purchased Bonds").

A description of the Liquidity Provider and a summary of certain provisions of the Liquidity Facility is set forth in APPENDIX I.

A redacted version of the Liquidity Facility will be available on the Municipal Securities Rulemaking Board's Electronic Municipal Market Access System (www.emma.msrb.org) or may be obtained from the Remarketing Agent.

Substitution of a Credit Facility

The Authority may replace the Liquidity Facility with a substitute Credit Facility; *provided, however*, that the Fiscal 2019 BB Bonds will be subject to mandatory tender on the substitution date if, solely as a result of such substitution, any Rating Agency would reduce or withdraw any rating assigned to the Fiscal 2019 BB Bonds.

No later than five (5) Business Days prior to the effective date of a substitute Credit Facility the Tender Agent shall give notice to the Holders of the Outstanding Fiscal 2019 BB Bonds, which notice is to contain, among other things: (i) a description of such substitute Credit Facility (including the date of expiration of such Credit Facility); (ii) the name of the Liquidity Provider of such substitute Credit Facility; (iii) a statement as to the ratings on the Fiscal 2019 BB Bonds as a result of the substitution of such substitute Credit Facility for the then existing Credit Facility; and (iv) a statement that the Opinion of Bond Counsel and the opinion of counsel to the Liquidity Provider necessary for such substitute Credit Facility to become effective have been obtained. The failure of any Holder of a Fiscal 2019 BB Bond to receive such notice will not affect the validity of the proceedings in connection with the effectiveness of such substitute Credit Facility.

SECURITY FOR THE SECOND RESOLUTION 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 and contractual 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 First Resolution the Revenues in the Local Water Fund, for deposit in the Revenue Fund established under the First 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 (including both periodic and termination payments under Interest Rate Exchange Agreements (see "APPENDIX D — FINANCIAL STATEMENTS — Note 5")), the Debt Service Reserve Fund and the FGR 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."

After the Board makes the deposits described above to the First Resolution Revenue Fund in such month from the balance remaining in the Local Water Fund, the Board is required, after paying monthly Board Expenses, to pay the City 1/12 of the Operating Expenses for such Fiscal Year. 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 First Resolution Revenue Fund until the total of all amounts deposited in the First Resolution 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. Pursuant to the Second Resolution, amounts deposited into the First Resolution Revenue Fund in any Fiscal Year in excess of the amounts required to be deposited into the First Resolution's Debt Service Fund, Authority Expense Fund, Debt Service Reserve Fund, and Arbitrage Rebate Fund are to be deposited into the FGR Subordinated Indebtedness Fund established under the First Resolution until the amount on deposit therein, together with the amounts on deposit in the Revenue Fund and Debt Service Fund established under the Second Resolution, equals the Aggregate Debt Service for such Fiscal Year on Second Resolution Bonds, Parity Bond Anticipation Notes and Parity Reimbursement Obligations. 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 First Resolution" and "Summary of the Agreement."

Amounts on deposit in the FGR Subordinated Indebtedness Fund will be available to pay debt service on Second Resolution Bonds to the extent not utilized under the terms of the First Resolution to pay debt service on First Resolution Bonds. As soon as practicable in each calendar month a portion of the amounts on deposit in the FGR Subordinated Indebtedness Fund will be transferred free and clear of the lien of the First Resolution to the Revenue Fund under the Second Resolution in an amount sufficient, together with the amount on deposit in the Revenue Fund and Debt Service Fund established under the Second Resolution, to make the amount on deposit therein equal the Monthly Balance (as defined in the Second Resolution). The Monthly Balance is the amount required to provide for timely payment of all Debt Service on Outstanding Second Resolution Bonds, Parity Bond Anticipation Notes and Parity Reimbursement Obligations. See "APPENDIX C — GLOSSARY AND SUMMARY OF CERTAIN DOCUMENTS — GLOSSARY — Definition of Certain Terms Used in Second Resolution — Monthly Balance."

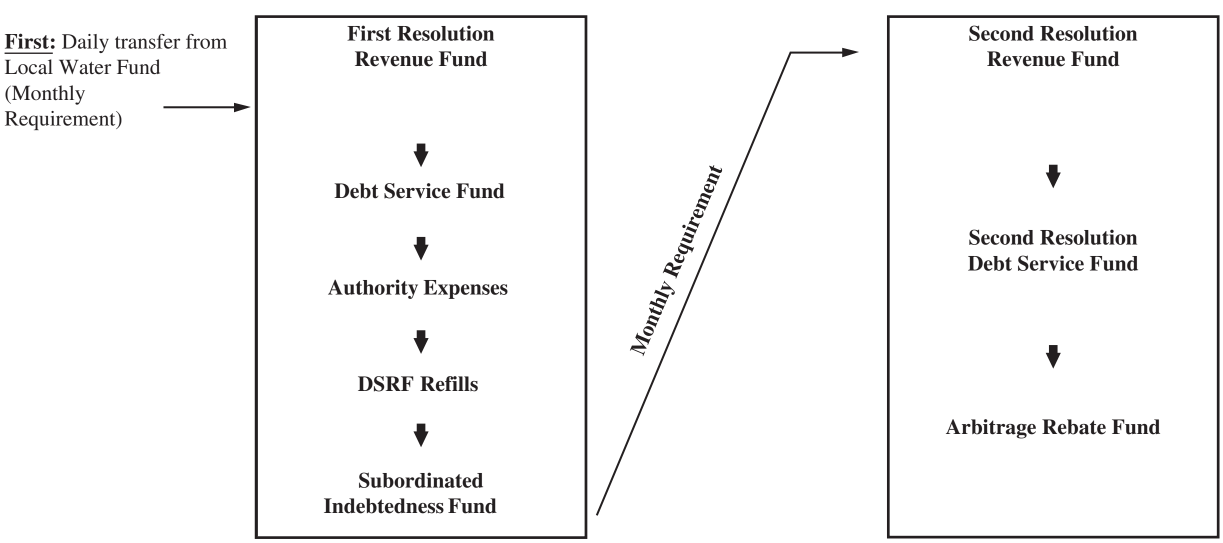
In addition, beginning on the day when no First Resolution Bonds are Outstanding, Revenues are to be deposited from the Local Water Fund into the Revenue Fund established under the Second Resolution. As described below, such Revenues will be used to make payments to the Authority Expense Fund, the Arbitrage Rebate Fund and the SGR Subordinated Indebtedness Fund established under the Second Resolution.

Amounts on deposit in the Revenue Fund established under the Second Resolution are to be paid to the following funds established under the Second Resolution in the following order of priority: first, to the Debt Service Fund; second, if no First Resolution Bonds are then Outstanding, to the Authority Expense Fund; third, to the Debt Service Reserve Fund to replenish any deficiency therein; fourth, to the Arbitrage Rebate Fund; and fifth, if no First Resolution Bonds are then Outstanding, to the SGR Subordinated Indebtedness Fund established under the Second Resolution, the amount required to be deposited in such Fund for such month in accordance with the Authority Budget. See "APPENDIX C — GLOSSARY AND SUMMARY OF CERTAIN DOCUMENTS — Summary of the Second Resolution — Payments into Certain Funds."

The Fiscal 2019 BB Bonds will be on a parity with all other outstanding Second Resolution Bonds heretofore and hereafter issued. The Fiscal 2019 BB Bonds are payable from and secured by a pledge of (a) amounts on deposit in the FGR Subordinated Indebtedness Fund, subject, however, to the first lien on such amounts in favor of First Resolution Bonds and (b) except as described below under the heading "Debt Service Reserve Fund," all moneys or securities in any of the funds and accounts established under the Second Resolution, except the Arbitrage Rebate Fund. See "APPENDIX C — GLOSSARY AND SUMMARY OF CERTAIN DOCUMENTS — Summary of the Second Resolution" and "Summary of the Agreement."

Pursuant to the Agreement, the First 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 First Resolution and the Second Resolution.

Consolidated Flow of Funds



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

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

Fourth: Daily transfer from Local Water Fund (Up to Annual Requirement) → Pro rata to:
- First Resolution Revenue Fund: for annual Debt Service, Authority expenses, DSRF, Subordinate Indebtedness (Second Resolution)
- System Operations and Maintenance

Fifth - Seventh: Daily transfer from Local Water Fund (After Debt Service is set aside) → • City lease payment, operating and maintenance reserve replenishment, pay as you go capital, year-end balance

Debt Service Reserve Fund

No deposit will be made to the Debt Service Reserve Fund established under the Second Resolution upon the issuance of the Fiscal 2019 BB Bonds, and the Fiscal 2019 BB Bonds will not be secured by any amounts on deposit in such Debt Service Reserve Fund in the future. For a discussion of the Debt Service Reserve Fund established under the Second Resolution, see "APPENDIX C — GLOSSARY AND SUMMARY OF CERTAIN DOCUMENTS — Summary of the Second Resolution — Debt Service Reserve Fund."

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 First Resolution 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 First Resolution 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 (including debt service on Second Resolution Bonds and other subordinate debt) required to be paid from Revenues for such Fiscal Year (the "Rate Covenant"). For information about the treatment under the Rate Covenant of Refundable Principal Installments designated under the Second Resolution, see "— Refundable Principal Installments" below.

Under the First 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 Second Resolution Bonds

The Authority may issue additional Second Resolution Bonds to pay for capital improvements to the System, to pay or provide for the payment of First Resolution Bonds, Second Resolution Bonds, 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 Second Resolution such additional Second Resolution Bonds may be issued on a parity with all Outstanding Second Resolution

Bonds only upon satisfaction of certain requirements including receipt by the Trustee of 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 Second Resolution Bonds are to be issued were at least equal to the sum of 110% of the Aggregate Debt Service on Outstanding First Resolution Bonds, Second Resolution Bonds, Parity Bond Anticipation Notes and Parity Reimbursement Obligations during such Fiscal Year (excluding from Aggregate Debt Service the amount 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 (excluding Required Deposits for the payment of Outstanding Second Resolution Bonds, Parity Bond Anticipation Notes and Parity Reimbursement Obligations).

The Authority may issue additional Second Resolution 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 Second Resolution Bonds does not exceed the average annual debt service on the Second Resolution Bonds to be refunded, and

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

See "APPENDIX C — GLOSSARY AND SUMMARY OF CERTAIN DOCUMENTS — Summary of the Second Resolution."

Authority Debt

At the date of this Official Statement, the Authority has approximately $1.6 billion aggregate principal amount of Outstanding First Resolution Bonds (Capital Appreciation Bonds are included at their full accreted value at maturity). In addition, at the date of this Official Statement, the Authority has approximately $28.1 billion aggregate principal amount of Outstanding Second Resolution Bonds, not including $407.2 million in draws on bond anticipation notes issued to the New York State Environmental Facilities Corporation. Of such First Resolution Bonds and Second Resolution Bonds, approximately $4.5 billion are adjustable rate demand bonds and $200 million are index rate bonds, none of which is insured. The Authority has no auction rate bonds outstanding. Interest Rate Exchange Agreements are used to hedge $401 million of the Authority's adjustable rate demand bonds (see "APPENDIX D — FINANCIAL STATEMENTS — Note 5").

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

The Authority's adjustable rate demand bonds are all supported by liquidity facilities with various financial institutions in the form of standby bond purchase agreements or letters of credit. None of the standby bond purchase agreements supporting adjustable rate demand bonds provides for acceleration or a mandatory term out of bonds purchased thereunder, but all have provisions for the rates to be adjusted upward (up to 25% in the case of bonds held by a liquidity provider) in the event of the inability to remarket such bonds. The Authority's index rate bonds consist of bonds that were purchased by a financial institution through direct placement and were not offered to the public. Such bonds pay interest based on a specified index and provide for an increased rate of interest of 9% commencing on an identified step up date if such bonds are not converted or refunded. For a list of index rate bonds and information relating to agreements supporting the Authority's adjustable rate demand bonds see Appendix F hereto.

The Authority is currently authorized to have outstanding up to $600 million of commercial paper notes, including up to $400 million of the Extendable Municipal Commercial Paper Notes described below (collectively, the "Commercial Paper Notes"). The Commercial Paper Notes are special obligations of the Authority, the proceeds of which are used to pay the costs of capital improvements to the System. The Commercial Paper Notes, Series One are required to be secured by a standby line of credit agreement to provide liquidity for such Commercial Paper Notes. The Authority has authorized its Extendable Municipal Commercial Paper Notes, Series Seven and Extendable Municipal Commercial

Paper Notes, Series Eight (collectively, the "EMCP Notes"). Principal of and interest on the EMCP Notes are not secured by any liquidity or credit facility and are payable from remarketing proceeds and the proceeds of additional EMCP Notes, First Resolution Bonds or Second Resolution Bonds. If payment of an EMCP Note is not made on its stated maturity date, which may not be more than 90 days after its date of issuance, the maturity date will be automatically extended to a date that is 270 days after the EMCP Note's issuance. Payment of the interest accrued through the stated maturity date will be deferred until the extended maturity date. Upon extension, the EMCP Note will bear interest on the principal and deferred interest at a rate determined by a formula that is based upon a percentage of the SIFMA Municipal Index, which changes weekly, plus an upward adjustment that ranges from an additional 100 basis points to 400 basis points depending upon the ratings on the EMCP Notes. At the current ratings, the adjustment would be 100 basis points. Interest on the extended EMCP Notes is payable monthly. The principal, deferred interest and accrued and unpaid interest on the extended EMCP Notes is payable on the extended maturity date.

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 FGR Subordinated Indebtedness Fund and the funds and accounts established under the respective commercial paper resolutions authorizing their issuance. However, the pledge of the Revenues and the moneys and investments from time to time on deposit in the FGR Subordinated Indebtedness Fund is subject and subordinate to the pledge thereof made by the First Resolution for the benefit of the holders of First Resolution Bonds and on parity with the pledge securing the Second Resolution Bonds. Principal of the Commercial Paper Notes is secured solely by the proceeds of bonds issued to repay the Commercial Paper Notes.

The Authority's obligations to the financial institution providing a standby line of credit in connection with outstanding Commercial Paper Notes, including the Authority's obligation to pay principal of and interest on indebtedness incurred under such line of credit, are secured by a pledge of the moneys and investments on deposit in the FGR Subordinated Indebtedness Fund on a parity with the pledge to secure the Second Resolution Bonds. Indebtedness incurred by the Authority under such line of credit, if not repaid within 90 days, becomes payable over a period ending on the earlier of (i) three years after the expiration of the line of credit agreement or (ii) five years after the date of incurrence of such indebtedness. Interest on such advances is also secured by a pledge of Revenues which is subordinate to the pledge securing the First Resolution Bonds and on parity with the pledge securing the Second Resolution Bonds.

Refundable Principal Installments

As permitted by the Second Resolution, the Authority has designated the maturities of certain Second Resolution Bonds as "Refundable Principal Installments." A "Refundable Principal Installment" is an installment of principal of such Second Resolution Bonds which the Authority intends to pay with moneys that are not Revenues. In calculating Adjusted Debt Service for purposes of the additional bonds test and Debt Service Reserve Fund Requirement under the Second Resolution, the stated principal amount of a Refundable Principal Installment is treated as if it were payable over a period extending from the maturity date of such Refundable Principal Installment through the last date on which it could have been authorized to be paid under the Act. 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. 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. The table included before the debt service requirements schedule under "CAPITAL IMPROVEMENT AND FINANCING PROGRAM — Debt Service Requirements" sets forth, by applicable Series, the outstanding Refundable Principal

Installments, the stated maturity dates thereof, the actual interest costs at which the assumed amortizations are calculated and the last dates on which such Series could have been authorized to be paid under the Act.

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."

Derivatives

In an effort to reduce its borrowing costs over the life of its bonds, the Authority has entered into interest rate exchange agreements. For more information on the Authority's interest rate exchange agreements, see "APPENDIX D — FINANCIAL STATEMENTS — Note 5."

Covenant of the State

Section 1045-t of the Act constitutes a pledge of the State to the holders of First Resolution Bonds and Second Resolution 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 First Resolution Bonds and Second Resolution Bonds until such obligations together with the interest thereon are fully met and discharged.

THE AUTHORITY

Purpose and Powers

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

Pursuant to the Act, there is a statutory first lien on the Revenues in favor of the payment of all amounts due to the Authority under the Agreement. The Revenues remain subject to this lien until provision for payment of all indebtedness issued by the Authority has been made.

Membership

The Act authorizes a seven-member board to administer the Authority (there is currently one vacancy). 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:

Member	Occupation
Melanie Hartzog (1)	Director of Management and Budget of the City
Basil Seggos (1)	Commissioner of Environmental Conservation of the State
Jacques Jiha (1)	Commissioner of Finance of the City
Vincent Sapienza, P.E. (1)	Commissioner of Environmental Protection of the City
Marc V. Shaw (2)	Senior Vice Chancellor, City University of New York
Max Von Hollweg (2)	Retired Partner, Sidley Austin LLP

(1) *Ex officio.*
(2) Appointed by the Mayor.

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

Alan L. Anders, Chief Executive Officer

Mr. Anders was appointed Chief Executive Officer in March 2007 after serving as Executive Director from June 2002 and Treasurer from October 1990 to June 2002. Mr. Anders also serves as Deputy Director for Finance of the Office of Management and Budget of the City ("OMB"). 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.

Olga Chernat, Executive Director

Ms. Chernat was appointed Executive Director in June 2017. Prior to her appointment, Ms. Chernat most recently served as Deputy Director of Finance at the Metropolitan Transportation Authority (the "MTA"), where she had been employed since 2009. Prior to joining the MTA, Ms. Chernat worked at the Authority for over two years where she served in several capacities, including most recently as Treasurer. Ms. Chernat began her public finance career as an Assistant Vice President at Roosevelt & Cross, Inc. Ms. Chernat earned a Bachelor of Business Administration degree in finance and investments from the City University of New York in 2002 and achieved a Chartered Financial Analyst designation in 2008.

Sanna Wong-Chen, Deputy Executive Director

Ms. Wong-Chen was appointed Deputy Executive Director in June 2017. Ms. Wong-Chen also serves as Assistant Director of Financing Policy and Coordination for OMB. Prior to joining OMB in September 2016, Ms. Wong-Chen most recently served as Director of Finance at the Long Island Power Authority and prior to that as a Senior Vice President at Siebert Cisneros Shank & Co., L.L.C., a public finance investment bank. Ms. Wong-Chen previously worked at OMB for approximately six years, ending in 2008, where she served in several capacities. Ms. Wong-Chen received her Bachelor of Science Degree from Cornell University in 2000.

Prescott D. Ulrey, Secretary

Mr. Ulrey was appointed Secretary in October 2013, after serving as Assistant Secretary since February 1998. Mr. Ulrey also serves as General Counsel to OMB. He is a graduate of the University of California at Berkeley, the Fletcher School of Law and Diplomacy of Tufts University and Columbia Law School.

Jeffrey M. Werner, Assistant Secretary

Mr. Werner was appointed Assistant Secretary in March 2004. Mr. Werner also serves as Deputy General Counsel to OMB. He is a graduate of Bowdoin College and Columbia Law School.

Albert Rodriguez, Assistant Secretary

Mr. Rodriguez was appointed Assistant Secretary in October 2013. He is a graduate of the University of New Mexico and Columbia Law School. He also serves as Chief of the Municipal Finance Division of the New York City Law Department and as Secretary of the Water Board.

Robert L. Balducci, Comptroller

Mr. Balducci was appointed Comptroller in May 2014, after having served as Deputy Comptroller since March 2011 and as Assistant Comptroller from December 2008 to March 2011. He is a graduate of Baruch College of the City University of New York.

Nameca Sharma, Assistant Comptroller

Ms. Sharma was appointed Assistant Comptroller in February 2015. Ms. Sharma has been employed in the Accounting Department of the Authority since November 2007. She is a graduate of York College of the City University of New York and is a Certified Public Accountant currently licensed to practice in the State of New York.

Jason Rhee, Assistant Treasurer

Mr. Rhee was appointed Assistant Treasurer in June 2017. Mr. Rhee has worked for the Authority since January 2014. Mr. Rhee received a Bachelor of Arts degree in Economics in 2011 and a Masters of Public Administration degree in 2012, both from New York University.

Laura Tarbox, Assistant Treasurer

Ms. Tarbox was appointed Assistant Treasurer in June 2017. Ms. Tarbox also works for OMB, in the Financing Policy and Coordinate Unit, where she has worked since 2008. Prior to her work at OMB, she worked as a municipal credit analyst for CIFG Services, Inc. Ms. Tarbox received a Bachelor of Science degree from Cornell 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 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:

Member	Occupation
Alfonso L. Carney, Jr., Chair	Principal, Rockwood Partners LLC
Tawan Davis	Chief Executive Officer, Steinbridge Group
Evelyn Fernandez-Ketcham	Executive Director, Workforce Development, Hostos Community College
Adam Freed	Principal, Sustainability Practice, Bloomberg Associates
Jonathan E. Goldin	General Counsel, Goldin Associates
Jukay Hsu	Founder, Coalition for Queens
Arlene M. Shaw	Director, Brightwood Capital Advisors LLC

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

Joseph Murin, Executive Director

Mr. Murin was appointed Executive Director of the Board in February 2017. Mr. Murin was appointed Chief Financial Officer of DEP in February 2017, after serving as Acting Chief Financial Officer since July 2016. Mr. Murin joined DEP in 2000 and prior to being appointed Chief Financial Officer served as Assistant Commissioner of Budget for DEP since 2007. Since beginning his City service in 1989, Mr. Murin has held budget and financial management positions with the Department of Transportation, the Office of Management and Budget, and the Board of Education's Division of School Facilities. Mr. Murin began his career as an auditor with Arthur Andersen & Co. Mr. Murin received a Bachelor of Science in Accounting from New York University.

Omar A. Nazem, Treasurer

Mr. Nazem was appointed Treasurer in March 2016. Prior to joining DEP, Mr. Nazem worked in investment management, most recently at Exium Partners, Coller Capital, and J.P. Morgan Asset Management. Mr. Nazem is a graduate of Harvard University and is a CFA charterholder.

Albert Rodriguez, Secretary

Mr. Rodriguez was appointed Secretary in October 2013. He is a graduate of the University of New Mexico and Columbia Law School. He also serves as Chief of the Municipal Finance Division of the New York City Law Department and as an Assistant Secretary to the Authority.

THE DEPARTMENT OF ENVIRONMENTAL PROTECTION

Organization

Over 5,500 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 CIP, as hereinafter defined, and approximately 400 provide administrative and support services to both System and non-System staff. There are approximately 200 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 functional areas: (1) Utility Operations, (2) Capital Program Delivery, (3) Sustainability and Regulatory Compliance, (4) Financial Management, Administration and Customer Service, (5) Legal Affairs, (6) Police and Security, and (7) Executive.

Utility Operations consists of three operating Bureaus: the Bureau of Wastewater Treatment; the Bureau of Water Supply; and the Bureau of Water and Sewer Operations.

Capital Program Delivery is managed by the Bureau of Engineering, Design and Construction, which manages the design and construction of major capital projects, including major water transmission facilities, water treatment facilities, wastewater treatment and disposal facilities, wastewater pumping stations and stormwater/Combined Sewer Overflow facilities.

The Bureau of Sustainability is managed by the Sustainability group, which is responsible for the development and implementation of environmental policy and strategy, including water and air quality, the noise code, and other quality of life issues. Sustainability includes the Office of Green Infrastructure, the Bureau of Environmental Planning and Analysis and the Bureau of Environmental Compliance.

The Chief Financial Officer oversees the Budget Office, the Bureau of Customer Services, the Office of the Agency Chief Contracting Officer, the Office of the Agency Chief Engineer, Information Technology, Engineering Audit, Fleet Management and other administrative divisions. The Chief Administrative Officer oversees Labor Relations, Discipline, Organizational Development and Human Resources, and Environmental Health and Safety.

Legal Affairs is responsible for handling DEP's legal matters. The Bureau of Police and Security is responsible for protecting the City water supply and the associated critical infrastructure from terrorism, pollution and crime. Executive includes the Commissioner and Chief of Staff, as well as the Bureau of Public Affairs.

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

Vincent Sapienza, P.E., Commissioner

Mr. Sapienza was appointed Commissioner on October 3, 2017, after serving as Acting Commissioner since June 30, 2016. Mr. Sapienza previously served as the Deputy Commissioner of the Bureau of Engineering Design and Construction from November 2014 to June 2016 and the Deputy Commissioner of the Bureau of Wastewater Treatment from September 2009 to November 2014. Since joining DEP in 1983, Mr. Sapienza has held numerous positions in the Bureau of Wastewater Treatment as Assistant Commissioner of Wastewater Treatment, Director of Regulatory Compliance, Chief of North Operations, Chief of Operations Support and Chief of Program Development. Mr. Sapienza is a graduate of Columbia University's School of Engineering and Applied Science and received a Master of Business Administration from Hofstra University. He is a Professional Engineer.

Joseph Murin, Chief Financial Officer

Mr. Murin was appointed Chief Financial Officer in February 2017, after serving as Acting Chief Financial Officer since July 2016. Mr. Murin joined the DEP in 2000 and prior to being appointed Chief Financial Officer served as Assistant Commissioner of Budget for DEP since 2007. Since beginning his City service in 1989, Mr. Murin has held budget and financial management positions with the Department of Transportation, the Office of Management and Budget, and the Board of Education's Division of School Facilities. Mr. Murin began his career as an auditor with Arthur Andersen & Co. Mr. Murin received a Bachelor of Science in Accounting from New York University.

Ana Barrio, Deputy Commissioner

Ms. Barrio was appointed Deputy Commissioner of the Bureau of Engineering Design and Construction in July 2018. Prior to joining DEP in 2018, Ms. Barrio had worked for the New York City Department of Design and Construction since 1996, most recently serving as Acting Commissioner. Ms. Barrio received a Bachelor of Science in Industrial Engineering from the New York Institute of Technology and is a graduate of Brooklyn Technical High School.

Zoe Ann Campbell, Deputy Commissioner of Organizational Development and Human Resources

Ms. Campbell was appointed Deputy Commissioner, Organizational Development and Human Resources in November 2017. She has spent her entire career in DEP, first joining the Agency in November 1978. Prior to being appointed Deputy Commissioner, Organizational Development and Human Resources, she served in various capacities including Deputy Commissioner, Human Resources from February 2008 to November 2017; Assistant Commissioner, Human Resources from November 2003 to February 2008; and Director of Human Resources from April 2002 to November 2003. Ms. Campbell received her Bachelor of Arts in American Literature from Queens College.

David M. Cohen, Esq., Chief Administrative Officer

Mr. Cohen was appointed Chief Administrative Officer in July 2016, having previously served as Deputy Commissioner for Labor Relations and Discipline since May 2014. He previously had served as Deputy Commissioner – Labor Counsel of the New York City Police Department since January 2007. Mr. Cohen was Assistant Vice President for Employee and Labor Relations at Columbia University from 1996 to 2006, was a human resources consultant from 1989 to 1996, and served as Labor Counsel of the Metropolitan Transportation Authority and Director of Labor Relations for the Long Island Rail Road from 1984 to 1989. He was an attorney with the U.S. Government prior to 1984. Mr. Cohen received a Bachelor of Science in Industrial and Labor Relations from Cornell University and a Juris Doctor from George Washington University.

Nancy Cianflone, Deputy Commissioner

Ms. Cianflone was appointed Deputy Commissioner, Bureau of Customer Services in January 2015. Prior to joining DEP, Ms. Cianflone was the Director of Program Development and Governance at National Grid where she was responsible for Consumer Advocacy and Low Income Programs, Escalated Complaints, and regulatory relationships for all National Grid jurisdictions. During her 33-year tenure at National Grid (formerly Brooklyn Union and KeySpan Energy Corp), Ms. Cianflone held positions in Rates and Regulatory Affairs, Government Relations, Internal Auditing, Credit and Collections, Consumer Analysis, Call Center training, quality assurance and communications. Ms. Cianflone is a graduate of St. Francis College (Brooklyn) and received her MBA from Pace University.

Elissa Stein Cushman, General Counsel

Ms. Cushman was appointed General Counsel in January 2016. Ms. Cushman previously served as Deputy General Counsel of DEP's Bureau of Legal Affairs, with a focus on business and employment issues, from 2010 to 2012. From 2012 to 2015 she served as Deputy Commissioner at the New York City Department of Information Technology and Telecommunications and General Counsel of the New York City Technology Development Corporation. From 2002 to 2010, she served as Chief of the Legal Counsel Bureau of the Nassau County Attorney's Office. She started her legal career in 1988 as an Assistant Corporation Counsel in the Legal Counsel Division of the New York City Law Department. Ms. Cushman received a Master's degree in Public Administration from the Kennedy School of Government at Harvard University and a J.D. from Harvard Law School.

Pam Elardo, P.E., Deputy Commissioner

Ms. Elardo was appointed Deputy Commissioner for the Bureau of Wastewater Treatment in June 2016. Prior to joining DEP, Ms. Elardo was the Director of the Wastewater Treatment Division in the King County Department of Natural Resources and Parks where she led the largest waste utility service provider in the Pacific Northwest collecting and treating wastewater for over 1.5 million customers throughout the Seattle Metropolitan area. Prior to working for King County, Ms. Elardo worked for 15 years as an environmental engineer for the State of Washington Department of Ecology performing engineering, regulatory analysis, and enforcement under the Clean Water Act and other programs. Previous to that work, Ms. Elardo worked as a Peace Corps volunteer designing and constructing community drinking water systems and sanitation projects in Eastern Nepal. Ms. Elardo is a Professional Engineer in the State of Washington and holds a Group IV Wastewater Treatment Plant Operator Certificate. She received a Master of Science in Environmental Engineering from the University of Washington and a Bachelor of Science in Chemical Engineering from Northwestern University.

Anastasios Georgelis, P.E., Deputy Commissioner

Mr. Georgelis was appointed Deputy Commissioner of the Bureau of Water and Sewer Operations in July 2018, after having served as Acting Deputy Commissioner of the Bureau since October 2016. Mr. Georgelis has been with DEP since June 1992, serving in numerous capacities. Since November 2009, Mr. Georgelis has served as Director of Field Operations with overall responsibility for maintenance and repair of infrastructure and appurtenances throughout the City's five boroughs. Prior to that, from 2001 to 2009, Mr. Georgelis served as Deputy Chief of Construction where he managed a staff of Engineers engaged in construction, inspections and capital projects citywide. Mr. Georgelis is a Registered Professional Engineer and a graduate of the Cooper Union for the Advancement of Science and Art, New York, where he earned his Bachelor's Degree in Civil Engineering. In 2001, DEP named Mr. Georgelis the Thomas D. O'Connell P.E., Water Supply Engineer of the Year in recognition of his outstanding contribution in the area of potable water supply to the City.

Angela Licata, Deputy Commissioner

Ms. Licata was appointed Deputy Commissioner for Sustainability in December 2011. She has been with DEP since 1988 and has served in numerous positions, most recently as Deputy Commissioner of the Bureau of Environmental Planning and Analysis. In her current position overseeing the Bureau of Environmental Planning and Analysis, Bureau of Environmental Compliance, and the Office of Green Infrastructure, she is responsible for implementing critical initiatives for stormwater management, regulatory reform, ecological restoration, Superfund cleanups, air quality, and noise reduction. Ms. Licata has helped launch many innovative projects and developed an impressive list of studies, including rate studies, consumption tracking, and demand projections. Ms. Licata is a graduate of Harpur College, Binghamton University.

Kevin McBride, Deputy Commissioner

Mr. McBride was appointed Deputy Commissioner of the Bureau of Police and Security in May 2009. Mr. McBride joined DEP from the New York City Police Department where he has served for over 30 years and holds the rank of Deputy Chief. While with the NYPD he served in several command capacities with extensive experience in operational, investigatory and managerial assignments. Mr. McBride holds a Bachelor of Science in Business from the University of the State of New York and a Master of Public Administration from Marist College.

Paul Rush, P.E., Deputy Commissioner

Mr. Rush was appointed Deputy Commissioner of the Bureau of Water Supply in December 2006. He has been with the DEP since 1992. Most recently, Mr. Rush served as the Director, West of Hudson Operations Division of the Bureau of Water Supply and prior to that he held positions as District Engineer and Chief of Operations for the City's Delaware Water Supply System. Prior to joining DEP, Mr. Rush served on active duty with the United States Army as an Engineer Officer. Mr. Rush holds a Master of Science degree in Civil Engineering from Michigan Technological University and Bachelor of Science degree in Civil Engineering from the United States Military Academy. He is a Registered Professional Engineer in the State of New York.

Cyber-Security

To protect the System from cyber-attack, DEP, through its Office of Information and Technology, works with a range of City, State, and federal law enforcement agencies, including the City's Department of Information Technology and Telecommunication, the New York City Cyber Command and the Federal Bureau of Investigation's Joint Terrorism Task Force. The New York City Cyber Command was created pursuant to executive order of the Mayor in July 2017 and is charged with setting information security policies and standards for the City for directing the City's citywide cyber defense and incident response, deploying defensive technical and administrative controls and providing guidance to the Mayor and City agencies, including DEP, on cyber defense.

Labor Relations

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"). Those DEP employees who are not members of labor unions have generally received salary and benefit increases consistent with DC 37. Projected operation and maintenance expenses in this Official Statement include an annual 1% increase for Fiscal Years 2018 through 2022 to reflect allowances for changes in staffing, salary and wage adjustments covering all DEP employees, including collective bargaining increases for such Fiscal Years and other factors. An agreement with DC 37, covering the period from September 26, 2017 through May 25, 2021, was ratified on August 14, 2018. The agreement provides for a retroactive increase of 2% effective September 26, 2017, followed by increases of 2.25% effective September 26, 2018 and 3% effective October 26, 2019 and would result in expenditures beyond the 1% per year assumed in the projected operation and maintenance expenses for personal services costs of $1.3 million, $4.7 million, $10.0 million, $12.8 million, and $12.8 million in Fiscal Years 2018 through 2022, respectively. The application of the DC 37 pattern to all DEP employees would result in expenditures beyond those assumed in the projected operation and maintenance expenses of approximately $3.3 million, $12.3 million, $25.9 million, $33.1 million and $33.1 million in Fiscal Years 2018 through 2022, respectively.

For information on other assumptions related to personal services costs, see "FINANCIAL OPERATIONS— Projected Operating and Maintenance Expenses."

CAPITAL IMPROVEMENT AND FINANCING PROGRAM

Ten Year Capital Strategy, Current Capital Plan and the Capital Improvement Program

The City's Ten Year Capital Strategy, which is updated every two years, was released on April 26, 2017 (the "Ten Year Capital Strategy"). The Ten Year Capital Strategy includes the projected contractual commitments for capital improvements to the System for Fiscal Years 2019 through 2028. The City's Current Capital Plan (the "Current Capital Plan"), which covers Fiscal Years 2018 through 2022, was published on April 26, 2018, is typically updated three times each Fiscal Year and supersedes the Ten Year Capital Strategy for Fiscal Years 2018 through 2022.

Projected capital commitments to the System for Fiscal Years 2018 through 2027 are reflected in the Capital Improvement Program (the "CIP"), which consists of the Current Capital Plan and the last five years of the Ten Year Capital Strategy. The dollar amounts in the CIP are a projection of contractual obligations to be entered into during each Fiscal Year and not a projection of capital expenditures. See "Capital Improvements and Financing Program — Sources and Uses of Capital Funds" for projected capital expenditures.

The CIP establishes long range programmatic goals for the System and reflects a review of the present condition and long-term needs of the plant and equipment constituting the System. The CIP incorporates the replacement cycle for System facilities, extensions to the present service area, and programs to enhance and optimize the operation of the System. Allowances are included in the CIP for emergency repair and replacement. The value of the actual work done in any given year will differ from that outlined in the CIP.

The CIP was evaluated independently by AECOM. AECOM concluded that the CIP is responsive to the long-term operating requirements of the area served by the System. See "Appendix A—Letter of Aecom USA, Inc., Consulting Engineers."

Amawalk Consulting, the Authority's rate consultant, has compared the anticipated capital commitments as reflected in the CIP with the capital improvement programs of other large U.S. cities and has concluded that the CIP commitments per capita are reasonable compared to other cities.

The CIP is presented in the following table:

CAPITAL IMPROVEMENT PROGRAM
(Thousands of Dollars)

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	Total
CITY FUNDS											
WATER SUPPLY AND TRANSMISSION											
Conveyance/Water For The Future	$ 31,451	$ 202,484	$ 5,000	$ 17,048	$ —	$ —	$ —	$ —	$ —	$ —	$ 255,983
Hillview Reservoir Improvements	—	—	18,500	—	128,000	30,000	143,000	20,000	—	—	339,500
City Tunnel No. 3, Stage 2	70,406	67,403	253,000	23,000	305,000	—	—	—	—	—	718,809
Kensico-Eastview Tunnel	—	46,357	2,000	97,000	676,000	52,000	265,000	90,000	—	—	1,228,357
Miscellaneous Programs	—	1,000	—	—	—	—	—	—	—	—	1,000
Subtotal	**101,857**	**317,244**	**278,500**	**137,048**	**1,109,000**	**82,000**	**408,000**	**110,000**	**—**	**—**	**2,543,649**
WATER DISTRIBUTION											
Croton Filtration Project	$ 41,143	$ 74,176	$ —	$ 23,386	$ —	$ —	$ —	$ —	$ —	$ —	$ 138,705
Dam Safety Program	70,108	49,872	28,221	117,000	68,000	90,000	—	10,000	68,000	394,000	895,201
Trunk Distribution and Main Extension	19,537	17,142	12,090	36	2,383	4,000	14,197	—	—	40,585	109,970
Trunk Distribution and Main Replacement	293,144	177,822	232,324	173,042	216,809	93,367	143,824	78,841	94,751	75,358	1,579,282
Water Quality Preservation	114,728	228,154	317,037	392,461	278,912	27,853	35,537	26,000	4,299	—	1,424,981
Extensions	43,757	4,429	8,714	19,410	28,441	—	—	—	—	—	104,751
Other System Improvements	68,139	34,683	52,620	12,981	78,798	11,508	—	—	—	—	258,729
Subtotal	**650,556**	**586,278**	**651,006**	**738,316**	**673,343**	**226,728**	**193,558**	**114,841**	**167,050**	**509,943**	**4,511,619**
WATER POLLUTION CONTROL											
Consent Decree Upgrading & Construction	$ 25,000	$ 9,818	$ 33,570	$ 13,200	$ 58,137	$ 77,000	$ —	$ 1,076	$ —	$ —	$ 217,801
Plant Upgrading & Reconstruction	282,993	478,249	754,299	666,523	554,254	345,956	61,833	140,000	155,300	70,000	3,509,407
Sludge Disposal	(966)	—	—	—	—	—	—	—	—	—	(966)
Plant Component Stabilization	105,296	45,158	—	2,700	—	—	—	—	—	—	153,154
Green Infrastructure Program	173,506	320,423	264,096	41,619	22,290	22,750	20,750	2,250	68,482	15,750	951,916
Water Quality Mandates	48,349	176,180	165,876	337,100	274,684	164,416	253,250	178,750	255,000	103,000	1,956,605
Subtotal	**634,178**	**1,029,828**	**1,217,841**	**1,061,142**	**909,365**	**610,122**	**335,833**	**322,076**	**478,782**	**188,750**	**6,787,917**
SEWERS											
Replacement or Augmentation	$ 391,497	$ 330,059	$ 347,796	$ 482,135	$ 390,566	$ 73,146	$ 61,872	$ 59,243	$ 39,053	$ 24,150	$ 2,199,517
Extensions to Accommodate New Development	71,174	86,341	103,128	64,869	92,225	8,000	20,760	12,426	90,000	35,915	584,838
Programmatic Replacement and Reconstruction	19,767	—	—	2,471	37,280	98,820	77,950	292,870	—	—	529,158
Replacement of Chronically Failing Components	122,349	142,961	159,147	93,593	115,420	63,663	81,786	61,271	50,000	55,000	945,190
Bluebelt Program	58,888	24,872	133,003	968	54,851	10,000	10,000	10,000	10,000	—	312,582
Trunks	26,114	8,427	7,574	2,828	86	—	—	—	—	—	45,029
Subtotal	**689,789**	**592,660**	**750,648**	**646,864**	**690,428**	**253,629**	**252,368**	**435,810**	**189,053**	**115,065**	**4,616,314**
EQUIPMENT											
Conservation	$ 7,170	$ 7,144	$ 18,234	$ 9,072	$ 9,541	$ 8,156	$ 10,000	$ —	$ —	$ 10,000	$ 79,317
Management Information Systems	405	43,383	30,517	44,520	45,125	12,025	125	—	10,000	10,000	196,100
Facility Purchases & Reconstruction	8,574	17,612	23,750	9,800	68,750	3,900	8,000	1,500	1,200	—	143,086
Utility Relocation	34,544	20,870	20,368	28,247	17,496	10,000	10,000	10,000	10,000	10,000	171,525
Water Meter	1,086	4,043	—	—	—	—	—	—	—	—	5,129
Vehicles and Equipment	13,692	9,395	22,586	5,706	7,058	628	1,000	4,344	2,000	2,000	68,409
Subtotal	**65,471**	**102,447**	**115,455**	**97,345**	**147,970**	**34,709**	**29,125**	**15,844**	**23,200**	**32,000**	**663,566**
TOTAL CITY FUNDS	**2,141,851**	**2,628,457**	**3,013,450**	**2,680,715**	**3,530,106**	**1,207,188**	**1,218,884**	**998,571**	**858,085**	**845,758**	**19,123,065**
STATE, FEDERAL, AND PRIVATE FUNDS											
Plant Upgrading & Reconstruction	$ —	$ 199,345	$ 30,130	$ —	$ 4,500	$ —	$ —	$ —	$ —	$ —	$ 233,975
Plant Component Stabilization	—	3,600	—	3,600	—	—	—	—	—	—	7,200
Trunk Distribution and Main Replacement	743	7,137	3,222	—	23	—	—	—	—	—	11,125
Other System Improvements	6,832	6,888	5,498	—	—	—	—	—	—	—	19,218
Bluebelt Program	815	—	25,390	—	—	—	—	—	—	—	26,205
TOTAL NON-CITY FUNDS	**8,390**	**216,970**	**64,240**	**3,600**	**4,523**	**—**	**—**	**—**	**—**	**—**	**297,723**
TOTAL FUNDS	**$2,150,241**	**$2,845,427**	**$3,077,690**	**$2,684,315**	**$3,534,629**	**$1,207,188**	**$1,218,884**	**$998,571**	**$858,085**	**$845,758**	**$19,420,788**

Following is an explanation of the major capital program elements within the CIP. For additional information about this infrastructure and the associated projects and regulatory requirements, see "THE SYSTEM."

Water Supply and Transmission

Conveyance and Water Supply/Water for the Future. DEP has completed an evaluation of alternatives to mitigate leaks in the Rondout-West Branch Tunnel and has elected to construct an approximately three mile long bypass tunnel which will allow DEP to repair the leaks. For additional information, see "THE SYSTEM — The Water System — Water Collection and Distribution — *The Rondout-West Branch Tunnel.*"

Hillview Reservoir Improvements. The improvements include new chemical addition facilities and flow control improvements. For additional information regarding Hillview Reservoir, see "THE SYSTEM — The Water System — Governmental Regulation — Hillview Reservoir."

Tunnel 3. Stage II includes completion of the Brooklyn/Queens segment. Stage I became operational in July 1998. The Manhattan segment of Stage II was completed in October 2013. Completion of the Brooklyn/Queens segment of Stage II will improve services to Staten Island, Brooklyn and Queens. See "THE SYSTEM — The Water System — Water Collection and Distribution."

Kensico-Eastview Connection. The Kensico-Eastview Connection will provide a second connection between the Kensico Reservoir and the Catskill/Delaware ultraviolet facility, which is necessary to provide redundancy in the water supply system.

Water Distribution

Croton Filtration Project. The City operates a water treatment facility to filter Croton System water. See "THE SYSTEM — The Water System — Governmental Regulation."

Dam Safety Program. DEP has a dam safety program for dams within the City, including the dams at Hillview, Jerome Park, Central Park, and Silver Lake reservoirs, as well as for dams in the watershed.

Trunk Distribution and Main Extension and Replacement. This program includes the improvement and extension of the water distribution network for both trunk and distribution water mains. The program facilitates the replacement of undersized or failing system elements and enhances network reliability.

Water Quality Preservation. The City provides for improvements to the upstate watersheds including projects undertaken pursuant to the FADs (as hereinafter defined) for the Catskill and Delaware watersheds such as the acquisition of environmentally sensitive property, the creation of community wastewater management systems in areas where because of historic development patterns, individual septic systems do not provide adequate treatment, and retrofits to capture and treat stormwater from developed areas. See "THE SYSTEM — The Water System — Governmental Regulation," "THE SYSTEM — Overview," and "THE SYSTEM — The Water System — Water Collection and Distribution."

Water Pollution Control

Consent Decree Upgrading and Construction. The Clean Water Act (as hereinafter defined) and several consent decrees and orders between DEP and the New York State Department of Environmental Conservation ("NYSDEC") require improvements to the City's wastewater treatment infrastructure. The plant upgrades, including the retrofitting of six plants to achieve additional nitrogen treatment and upgrades at the Newtown Creek plant to improve plant operations, have been completed. Two additional plants have not yet been retrofitted. DEP is also required to implement measures to address discharges through the City's combined sewer overflow ("CSO") outfalls which, during periods of heavy rainfall, release a combination of stormwater and sewage that bypasses treatment into the City's waterways. See "THE SYSTEM — The Sewer System — Governmental Regulation."

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 reliability and the retrofit of two additional water pollution control plants to decrease the amount of nitrogen discharged into the surrounding water.

Green Infrastructure. The Green Infrastructure Program is an approach to managing stormwater and improving water quality by reducing the frequency of Combined Sewer Overflow ("CSO") events through the construction of rainwater capture facilities such as bioswales and green roofs.

Water Quality Mandates. USEPA and NYSDEC have imposed various water quality requirements on DEP, including mandates to mitigate CSOs, mandates to reduce chlorine discharge at wastewater treatment plants and mandates to reduce pollutants in stormwater runoff in areas of the City served by separate sewers designed to carry only stormwater. DEP is working with USEPA and NYSDEC to address these mandates.

Sewers

Replacement or Augmentation. This program provides for projects that expand the capacity of the Sewer System.

Extensions. The City constructs sewers to replace septic systems in populated areas to avoid health problems associated with viruses, bacteria and other sewage-related pollutants and to minimize stormwater flooding.

Programmatic Replacement and Reconstruction. This program provides for replacement and reconstruction of storm sewers for the alleviation of flooding.

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 addressed through maintenance or experience chronic malfunction due to inadequate capacity.

Bluebelt Program. The Bluebelt System is a cost effective stormwater management system that connects natural drainage corridors, such as streams and wetlands, to conventional storm sewers to reduce local flooding.

Equipment

Conservation. This program includes toilet replacement, leak detection and the installation and replacement of water meters in residential and commercial properties.

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

Historical Capital Program

The following table presents capital commitments and capital expenditures of the System for Fiscal Years 2013 through 2017. Capital commitments are contractual obligations entered into during the Fiscal Year while capital expenditures represent cash payments made during the Fiscal Year.

System Capital Commitments and Expenditures
(Millions of Dollars)

	FY 2013		FY 2014		FY 2015		FY 2016		FY 2017	
Commitments	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 and Transmission (3)	$ 316	$ 316	$ 21	$ 21	$ 737	$ 737	$ 17	$ 17	$ 162	$ 162
Water Distribution	402	402	343	345	553	553	418	419	867	883
Water Pollution Control	454	456	412	408(4)	367	367	709	708(4)	667	675(7)
Sewers	279	288	300	302	344	355	352	353	670	685
Equipment	65	58(4)	84	84	91	91	93	93	86	86
Total	$1,516	$1,521	$1,160	$1,160	$2,092	$2,103	$1,589	$1,590	$2,452	$2,491

	FY 2013		FY 2014		FY 2015		FY 2016		FY 2017	
Expenditures (5)(6)	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 and Transmission (3)	$ 90	$ 102	$ 158	$ 153(7)	$ 124	$ 117(7)	$ 120	$ 122	$ 111	$ 111
Water Distribution	718	696(7)	600	555(7)	489	488(7)	443	433(7)	459	460
Water Pollution Control	718	699(7)	548	516(7)	449	400(7)	460	456(7)	464	466
Sewers	247	254	274	287	275	287	305	311	357	360
Equipment	91	92	71	67(7)	86	81(7)	55	56	55	55
Total	$1,864	$1,843	$1,651	$1,578	$1,423	$1,373	$1,383	$1,378	$1,446	$1,452

Totals may not add due to rounding.

(1) System Funds include the proceeds of Authority bonds sold directly to the public and those privately placed with the Corporation under the revolving fund program and System revenues.

(2) All Funds include federal and state capital grants.

(3) Includes capital costs for improvements to upstate water pollution control plants which were paid for with the proceeds of Authority bonds but which are reported as operating expenses in the System's financial statements because such plants are owned by municipalities outside the City.

(4) Cancellation of non-City contracts caused the All Funds commitment level to fall below the System Funds level.

(5) System Funds are shown on a modified cash basis and reflect cash expended for System capital commitments, excluding federal and State grant-funded expenditures. All Funds, which include federal and State grant-funded expenditures, are shown on an accrual basis.

(6) All Funds exclude expenditures for pollution remediation costs of $8 million in Fiscal Year 2013, $23 million in Fiscal Year 2014, $15 million in Fiscal Year 2015, $10 million in Fiscal Year 2016, and $10 million in Fiscal Year 2017, which are reported in the System's financial statements as operating costs.

(7) Accounting adjustments, including payment refunds, caused the All Funds expenditure level to fall below the System Funds level.

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 (i) proceeds of bonds sold directly to the public and privately placed with New York State Environmental Facilities Corporation (the "Corporation") in connection with the revolving loan fund program described below, (ii) federal and State capital grants, and (iii) cash-financed capital construction paid from System revenues. See "Debt Service Requirements" below.

Future Financing. The Authority estimates that 98.5% of the System's capital costs will be paid from: (i) proceeds of bonds and other forms of indebtedness sold to the public and privately placed with, or supported by, the Corporation and (ii) System revenues. Implementation of the CIP is dependent upon the Authority's ability to market its securities successfully in the public credit markets. For purposes of forecasting revenue requirements for the System, the principal amount of bonds estimated to be issued for capital purposes as of June 1, 2018, excluding refunding bonds, in each of the Fiscal Years 2019 through 2022 averages approximately $1.9 billion per year. Projected Authority capital spending reflects commitments from both current and prior years. See the table entitled "Sources and Uses of Capital Funds" below.

Historically, federal grant funds were provided pursuant to the Federal Water Pollution Control Act, as amended by the Clean Water Act of 1977 and by the Water Quality Act of 1987 (the "Clean Water Act"), in a program administered by the states, for construction and reconstruction of water pollution control facilities. The City has used these grant funds for five water pollution control plants: Oakwood Beach, Coney Island, Owls Head, Red Hook and North River. The Clean Water Act currently requires states to use federal funds in revolving loan programs in lieu of a federal grant program for water pollution control facilities. To this end, a revolving loan program has been established by the State and administered by the Corporation 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 the Corporation, to provide loans for drinking water projects. The Authority has participated in loans under both of the revolving loan programs and anticipates receiving additional financial assistance under the programs. These revolving loan programs have routinely featured the public sale of bonds by the Corporation to finance the purchase by the Corporation of Second Resolution Bonds.

The Corporation has entered into an agreement to provide the Authority with $30 million in funds made available for certain projects through the Clean Water State Revolving Fund. To date, the Authority has received approximately $27.6 million. The Authority expects to receive the remaining funds in the current fiscal year. The projected issuance of Authority debt in Fiscal Years 2019 through 2022 does not assume the receipt of such funds. Once fully drawn and the financed projects are completed, the loan principal will be forgiven.

The Corporation has entered into agreements to provide the Authority with $445 million in funds for certain projects through the Clean Water State Revolving Fund and $205 million in funds for certain projects through the Drinking Water State Revolving Fund. To date, the Authority has received approximately $379.6 million and issued bond anticipation notes totaling such amount to the Corporation. The Authority expects to refinance the notes with loans from the revolving loan program.

Sources and Uses of Capital Funds

The following table presents the projected sources and uses of the funds for the System as of June 1, 2018. See "INTRODUCTORY STATEMENT — Financial Projection Assumptions."

Sources and Uses of Capital Funds
(Millions of Dollars)

Line No.	Description	2018	2019	2020	2021	2022	Period Total
	Sources of Funds						
1	Proceeds from Sale of Bonds	$ 2,899.8	$ 1,893.0	$ 1,721.0	$ 1,778.0	$ 2,086.0	$ 10,377.8
2	Proceeds from Commercial Paper Notes & BANs	673.9	1,454.0	1,641.0	1,695.0	1,989.0	7,452.9
3	Total Sources of Funds	3,573.7	3,347.0	3,362.0	3,473.0	4,075.0	17,830.7
	Uses of Funds						
4	Refunding of Prior Bonds	1,241.7	—	—	—	—	1,241.7
5	Deposit to Construction Fund	1,599.2	1,454.0	1,641.0	1,695.0	1,989.0	8,378.2
6	Retirement of Commercial Paper Notes & BANs	715.0	1,831.0	1,641.0	1,695.0	1,989.0	7,871.4
7	Other (1)	17.3	63.0	80.0	83.0	97.0	340.3
8	Total Uses of Funds	3,574.0	3,348.0	3,362.0	3,473.0	4,075.0	17,831.7
	Construction Fund						
9	Beginning Balance	467.9	300.1	300.1	300.1	300.1	467.9
10	Transfer from Proceeds from Commercial Paper Notes & BANs	673.9	1,454.0	1,641.0	1,695.0	1,989.0	7,452.9
11	Transfer from Proceeds from Bonds	925.3	—	—	—	—	925.3
12	Cash Financed Capital Construction (2)	75.0	550.0	400.0	400.0	400.0	1,825.0
13	Total Available Construction Funds	2,142.1	2,304.1	2,341.1	2,395.1	2,689.1	10,671.1
14	Less: Total Capital Spending (3)	(1,842.0)	(2,004.0)	(2,041.0)	(2,095.0)	(2,389.0)	(10,371.0)
15	Ending Balance	$ 300.1	$ 300.1	$ 300.1	$ 300.1	$ 300.1	$ 300.1

(1) Includes deposits to the Debt Service Reserve Fund and costs of issuance; Fiscal Year 2018 only includes costs of issuance.
(2) Funds projected for Cash Financed Capital Construction may also be used for the defeasance of Bonds. In Fiscal Year 2018, in addition to $75 million of funds expected to be used for Cash Financed Capital Construction, $825 million of funds was used for the defeasance of Bonds.
(3) Capital spending reflects commitments from current and prior years.

The following table shows projected debt service requirements, including payments on outstanding bonds and on future bonds projected to be issued as of June 1, 2018. For additional information, see "— Debt Service Requirements."

Forecasted Debt Service Requirements
(Millions of Dollars)

Line No.	Description	Bond Issues	2018	2019	2020	2021	2022
	First Resolution Debt Service						
1	Outstanding Bonds		$ 76.5	$ 124.0	$ 157.6	$ 125.4	$ 159.5
	Anticipated Future Bonds						
2	Fiscal Year 2019 Bonds	$ 431.0	—	12.9	25.9	25.9	25.9
3	Fiscal Year 2020 Bonds	378.0	—	—	11.3	22.7	22.7
4	Fiscal Year 2021 Bonds	393.0	—	—	—	11.8	23.6
5	Fiscal Year 2022 Bonds	475.0	—	—	—	—	14.3
6	Total First Resolution Debt Service		76.5	136.9	194.8	185.7	245.9
	Subordinated Obligations						
	Second Resolution Authority Debt Service (1)						
7	Outstanding Authority Bonds issued to the Public		1,048.9	1,140.0	1,158.6	1,210.0	1,193.0
	Anticipated Future Second Resolution Bonds to be issued to the Public						
8	Fiscal Year 2019 Bonds	1,162.4	—	33.5	70.3	70.3	70.3
9	Fiscal Year 2020 Bonds	1,043.0	—	—	30.1	63.0	63.0
10	Fiscal Year 2021 Bonds	1,085.0	—	—	—	31.3	65.5
11	Fiscal Year 2022 Bonds	1,311.0	—	—	—	—	37.8
12	Interest Payments on Commercial Paper Notes		—	17.0	17.0	17.0	17.0
13	Outstanding Second Resolution Bonds issued to EFC		546.6	552.1	539.8	519.4	511.8
	Anticipated Future Second Resolution Bonds to be issued to EFC						
14	Fiscal Year 2019 Bonds	300.0	—	8.9	21.7	21.7	21.7
15	Fiscal Year 2020 Bonds	300.0	—	—	8.9	21.7	21.7
16	Fiscal Year 2021 Bonds	300.0	—	—	—	8.9	21.7
17	Fiscal Year 2022 Bonds	300.0	—	—	—	—	8.9
18	Less: Current EFC Subsidy (2)		(103.9)	(104.0)	(99.7)	(95.5)	(91.0)
19	Less: Future EFC Subsidy (3)		—	(3.0)	(9.0)	(15.0)	(20.0)
20	Total Debt Service on FGR Subordinated Indebtedness		1,491.5	1,644.6	1,737.7	1,852.8	1,921.5
21	Less: Carryforward Net Year-end Balance		(1,212.0)	(1,036.2)	(992.7)	(948.9)	(997.3)
22	Net Debt Service on FGR Subordinated Indebtedness		279.5	608.4	745.0	903.8	924.2
23	Total Debt Service Payable from Current Revenues		$ 356.0	$ 745.3	$ 939.8	$1,089.5	$1,170.1

(1) Debt service does not reflect federal interest subsidy payments on Build America Bonds. Federal subsidy payments on outstanding Build America Bonds are included as Revenues. See "FINANCIAL OPERATIONS — Projected Revenues."

(2) Includes the estimated Corporation subsidy on outstanding Second Resolution Bonds.

(3) Includes the estimated Corporation subsidy on anticipated future Second Resolution Bonds.

For purposes of these projections, the Authority has assumed that interest rates on future First Resolution Bonds and Second Resolution Bonds issued to the public will be 6.0% for Fiscal Year 2019 through Fiscal Year 2022. Interest rates on future Second Resolution Bonds issued to the Corporation are assumed to be 5.95% for Fiscal Year 2019 through Fiscal Year 2022, prior to expected interest rate subsidies. The Authority has further assumed that existing adjustable rate bonds bear interest at 1.47% for Fiscal Year 2018. For Fiscal Year 2019 through Fiscal Year 2022, existing and future adjustable rate bonds and Commercial Paper Notes are assumed to bear interest at 4.25%.

Debt Service Requirements

The debt service requirements schedule on the following page sets forth as of the date of this Official Statement 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 First Resolution Bonds and Second Resolution Bonds assuming that all adjustable rate bonds bear interest at an average rate of 4.25% for each Fiscal Year with interest computed on the basis of a 30-day month and a 360-day year. The debt service requirements schedule does not include debt service on any outstanding Commercial Paper Notes or payments under interest rate exchange agreements.

Refundable Principal Installments in the aggregate principal amount of $184,715,000 are assumed to be amortized as described herein under "SECURITY FOR THE SECOND RESOLUTION BONDS—Refundable Principal Installments" at the following actual interest rates from the Series maturity dates through the following assumed amortization dates (*i.e.,* the last date on which the Series could have been authorized to be paid under the Act):

Outstanding Refundable Principal Installments

Series	Maturity Date (June 15)	Principal Amount	Series Actual Rate	Assumed Amortization Through (June 15th)
2016 Subseries BB-2	2021	$21,815,000	4.12%	2052
2017 Subseries CC-2	2023	88,340,000	4.24	2053
2018 Subseries CC-2	2024	21,270,000	2.30	2052
2018 Subseries CC-2	2024	5,390,000	2.30	2053
2018 Subseries CC-2	2025	32,900,000	2.30	2053
2012 Series DD	2027	15,000,000	2.59	2051

For additional information regarding Refundable Principal Installments, see "SECURITY FOR THE SECOND RESOLUTION BONDS—Refundable Principal Installments."

Debt Service Requirements

FY Ending June 30	Debt Service on Outstanding Authority Bonds: First Resolution Bonds	Debt Service on Outstanding Authority Bonds: Second Resolution Bonds(1)(2)(3)	Fiscal 2019 BB: Principal	Fiscal 2019 BB: Interest	Debt Service on Second Resolution Bonds, including Fiscal 2019 BB(1)(2)(3)	Debt Service on First and Second Resolution Bonds(1)(2)(3)
2019*	$ 101,685,927	$ 1,569,064,578	—	$ 3,211,111	$ 1,572,275,689	$ 1,673,961,616
2020	144,173,362	1,608,439,753	—	4,250,000	1,612,689,753	1,756,863,115
2021	111,968,363	1,641,881,630	—	4,250,000	1,646,131,630	1,758,099,992
2022	146,123,363	1,623,704,087	—	4,250,000	1,627,954,088	1,774,077,450
2023	95,010,863	1,664,520,227	—	4,250,000	1,668,770,227	1,763,781,089
2024	118,417,113	1,696,801,566	—	4,250,000	1,701,051,566	1,819,468,679
2025	103,260,863	1,697,369,961	—	4,250,000	1,701,619,961	1,804,880,823
2026	73,835,863	1,759,398,958	—	4,250,000	1,763,648,958	1,837,484,820
2027	50,171,113	1,771,213,207	—	4,250,000	1,775,463,207	1,825,634,319
2028	56,446,113	1,774,514,959	—	4,250,000	1,778,764,959	1,835,211,072
2029	49,857,363	1,782,872,965	—	4,250,000	1,787,122,965	1,836,980,327
2030	49,857,363	1,599,354,797	—	4,250,000	1,603,604,798	1,653,462,160
2031	60,397,363	1,794,915,772	—	4,250,000	1,799,165,772	1,859,563,134
2032	181,269,413	1,665,128,641	—	4,250,000	1,669,378,641	1,850,648,053
2033	292,409,413	1,528,740,618	—	4,250,000	1,532,990,618	1,825,400,031
2034	32,920,738	1,746,895,141	—	4,250,000	1,751,145,141	1,784,065,879
2035	234,575,738	1,651,418,055	—	4,250,000	1,655,668,055	1,890,243,793
2036	92,280,400	1,795,554,248	—	4,250,000	1,799,804,248	1,892,084,648
2037	22,312,500	1,690,813,497	—	4,250,000	1,695,063,497	1,717,375,997
2038	22,312,500	1,781,396,403	—	4,250,000	1,785,646,403	1,807,958,903
2039	22,312,500	1,760,912,255	—	4,250,000	1,765,162,255	1,787,474,755
2040	22,312,500	1,952,786,507	—	4,250,000	1,957,036,507	1,979,349,007
2041	22,312,500	2,073,701,292	—	4,250,000	2,077,951,292	2,100,263,792
2042	22,312,500	1,986,123,919	—	4,250,000	1,990,373,919	2,012,686,419
2043	22,312,500	1,928,495,804	—	4,250,000	1,932,745,804	1,955,058,304
2044	222,312,500	1,630,404,218	—	4,250,000	1,634,654,218	1,856,966,718
2045	338,812,500	1,648,819,792	—	4,250,000	1,653,069,792	1,991,882,292
2046	—	1,984,484,581	—	4,250,000	1,988,734,581	1,988,734,581
2047	—	1,805,034,586	—	4,250,000	1,809,284,586	1,809,284,586
2048	—	1,071,158,399	—	4,250,000	1,075,408,399	1,075,408,399
2049	—	748,261,275	—	4,250,000	752,511,275	752,511,275
2050	—	479,457,524	—	4,250,000	483,707,524	483,707,524
2051	—	10,332,525	$100,000,000	4,250,000	114,582,525	114,582,525
2052	—	7,578,150	—	—	7,578,150	7,578,150
2053	—	5,280,976	—	—	5,280,976	5,280,976
Total	**$2,711,973,227**	**$52,936,830,867**	**$100,000,000**	**$139,211,112**	**$53,176,041,979**	**$55,888,015,206**

Totals may not add up due to rounding.

* Amounts remaining to be paid by the Authority as of the date of this Official Statement.

(1) Net of projected subsidy from the Corporation.

(2) Does not reflect the interest subsidy provided by the federal government on Build America Bonds pursuant to the Recovery Act.

(3) Assumes that the outstanding Fiscal 2012 Series DD Bonds, Fiscal 2016 Subseries BB-2 Bonds, Fiscal 2017 Subseries CC-2 Bonds and Fiscal 2018 Subseries CC-2 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. See "SECURITY FOR THE SECOND RESOLUTION BONDS — Refundable Principal Installments" for additional information.

FINANCIAL OPERATIONS

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

Revenues

The following table presents, on a cash basis, the System revenues received during Fiscal Years 2013 through 2017, as derived from the accounting records utilized in preparation of the statement of cash flows, which is contained in the annual financial statements for Fiscal Years 2013 through 2017.

System Revenues
(Millions of Dollars)

Line No.	Description	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
	Operating Revenues					
1	User Payments (1)	$3,276.5	$3,500.0	$3,661.2	$3,723.7	$3,739.2
2	Upstate Revenues	69.6	73.5	76.9	84.6	85.4
3	Subtotal Service Revenue	3,346.1	3,573.5	3,738.1	3,808.3	3,824.6
4	Miscellaneous Revenues (2)	51.1	39.0	71.1	44.6	52.4
5	Subtotal Operating Revenue	3,397.2	3,612.5	3,809.2	3,852.9	3,877.0
	Nonoperating Revenues					
6	Interest Income on System Funds (3)	43.2	46.2	32.3	37.4	34.1
7	Federal Subsidy on Build America Bonds	72.2	70.1	70.0	70.4	70.3
8	Subtotal Nonoperating Revenues	115.4	116.3	102.3	107.8	104.4
9	Total Revenues	$3,512.6	$3,728.8	$3,911.5	$3,960.7	$3,981.4

Totals may not add due to rounding. Figures are calculated on a cash basis.

(1) Includes both current payments and payments relating to accounts in arrears.
(2) Miscellaneous Revenues exclude subsidy payments from the Corporation on First Resolution Bonds or Second Resolution Bonds. Miscellaneous Revenues include fees paid for a variety of services such as new connections to the System and fees paid for the review of developers' plans.
(3) Includes interest income on the Construction Fund, the Debt Service Fund, the Debt Service Reserve Fund, the Subordinated Debt Service Fund, the Revenue Fund and interest earned in escrow accounts for economically defeased debt.

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.

Expenses

The following table presents System expenses for Fiscal Years 2013 through 2017 on a cash basis, and are derived from budget records. The System reimburses the City based on budgeted expense amounts certified by the City's Director of Management and Budget pursuant to the Lease Agreement. Credits or payments between the City and the System are made in the subsequent Fiscal Year based on a reconciliation between the actual expenses incurred and the amounts reimbursed to the City by the System.

System Expenses
(Millions of Dollars)

Description	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
Authority Expenses	$ 43.4	$ 43.2	$ 45.3	$ 47.0	$ 50.9
Board Expenses	8.3	24.4	33.4	35.7	43.9
Water Operations (1)					
Personal Services (2)	192.2	199.3	206.2	214.5	225.5
Other Than Personal Services (3)	315.8	352.2	376.1	375.5	370.0
Total Water Operations	508.0	551.5	582.3	590.0	595.5
Wastewater Operations (1)					
Personal Services (2)	355.5	348.9	361.5	370.1	401.3
Other Than Personal Services (3)	343.0	295.5	307.3	317.5	346.6
Total Wastewater Operations	698.5	644.4	668.8	687.6	747.9
City Agency Support Costs	43.0	49.7	49.7	49.0	49.1
Indirect Expenses	19.4	19.4	19.4	19.4	19.4
Judgments and Claims	8.0	8.0	8.0	8.0	8.0
Net Operating Expenses	1,276.9	1,273.0	1,328.2	1,354.0	1,419.9
Less: Credit or Payment for Prior Year City Expenses	(53.4)	(123.7)	3.6	(94.3)	(194.4)
Net Operating Expense Payments (4)	1,223.6	1,149.3	1,331.8	1,259.7	1,225.3
Cash Defeasance of Debt	300.0	399.1	802.7	948.6	974.1
Cash Financed Capital Construction	—	225.0	25.6	—	—
Base Rental Payment to the City of New York	228.0	211.8	204.0	137.0	—
Deposits to O&M Reserve Fund	(0.9)	8.9	3.5	21.9	(13.5)
Total Expenses	$1,802.3	$2,061.7	$2,446.3	$2,449.9	$2,280.9

Totals may not add due to rounding. Figures are calculated on a cash basis.

(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) Includes salaries, fringe benefits and pension costs.
(3) Includes real estate taxes paid to upstate communities for watershed properties, sludge disposal costs and for electricity, chemicals and supply costs.
(4) Not including Authority and Board expenses.

Projected Revenues

As indicated in the table below, "Subtotal Service Revenue" is projected as of June 1, 2018 to increase from approximately $3.7 billion in Fiscal Year 2018 to approximately $4.0 billion in Fiscal Year 2022 due to projected rate increases in those Fiscal Years. Upstate revenues are projected to increase from approximately $82 million in Fiscal Year 2018 to approximately $95 million in Fiscal Year 2022. This projected revenue growth assumed increases in the cost of water supply services in each of Fiscal Years 2019 through 2022. As of the date hereof, the Board has taken no action to increase Upstate Water Rates for Fiscal Year 2019. For more information, see "Rates and Billings – Rates – Upstate Water Rates."

City-wide water consumption by metered customers in Fiscal Year 2018 was about 0.36% higher than such consumption in Fiscal Year 2017. City-wide consumption by metered customers in the first two months of Fiscal Year 2019 is about 1.20% higher than such consumption during the same period in Fiscal Year 2018. The projected revenues assume that water consumption will decline at the rate of 1.0% per year in Fiscal Years 2019 through 2022.

For the first two months of Fiscal Year 2019, water and sewer payments, not including payments received from the City, were $600,000 or 0.05% lower than projected in June 2018 for this period.

Projected Revenues
(Millions of Dollars)

Line No.	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
	Operating Revenues					
1	User Payments (1)	$3,599.5	$3,673.1	$3,731.3	$3,825.2	$3,940.2
2	Upstate Revenues	81.5	84.2	87.5	91.1	95.4
3	Subtotal Service Revenue	3,681.0	3,757.3	3,818.8	3,916.3	4,035.6
4	Miscellaneous Revenues (2)	17.1	18.0	18.9	19.8	20.8
5	Subtotal Operating Revenue	3,698.2	3,775.3	3,837.7	3,936.1	4,056.5
	Nonoperating Revenues					
6	Interest Income on System Funds (3)	32.0	21.0	19.0	22.0	24.0
7	Federal Subsidy on Build America Bonds (4)	69.9	69.9	69.8	69.7	69.6
8	Subtotal Nonoperating Revenue	101.9	90.9	88.8	91.7	93.6
9	Total Revenues	$3,800.1	$3,866.1	$3,926.5	$4,027.8	$4,150.0

Totals may not add due to rounding. Figures are calculated on a cash basis.
Source: Amawalk Consulting.

(1) Includes late payment charges.
(2) Miscellaneous Revenues do not include subsidy payments from the Corporation on Second Resolution Bonds. Miscellaneous Revenues include fees paid for a variety of services provided by DEP such as new connections to the System and the review of developers' plans.
(3) Includes interest income on the Construction Fund, the Debt Service Fund, the Debt Service Reserve Fund and the Subordinated Indebtedness Fund.
(4) Reflects a reduction of the federal subsidy due to federal sequestration, assumed to be 7.2% for each year through Fiscal Year 2022.

Projected Operating and Maintenance Expenses

The table set forth below shows, for Fiscal Years 2018 through 2022, the System's projected operation and maintenance expenses as of June 1, 2018. See "INTRODUCTORY STATEMENT — Financial Projection Assumptions."

Projected Operation and Maintenance Expenses
(Millions of Dollars)

Line No.	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
1	Authority Operations	$ 53.3	$ 56.2	$ 59.0	$ 61.9	$ 65.0
2	Board Operations	50.0	51.2	53.8	56.5	59.3
3	Net Authority Expense for the Defeasance of Debt	825.0	—	—	—	—
	Water Operations					
4	Personal Services	251.1	257.7	266.3	268.8	276.8
5	Other Than Personal Services	345.3	381.6	384.3	389.3	401.0
6	Total Water Operations	596.5	639.3	650.6	658.1	677.9
	Wastewater Operations					
7	Personal Services	435.3	462.2	479.6	486.2	500.8
8	Other Than Personal Services	371.6	365.7	386.4	371.3	382.5
9	Total Wastewater Operations	806.9	827.9	865.9	857.6	883.3
10	Indirect Expenses	9.9	9.9	9.9	9.9	9.9
11	Judgments and Claims	8.0	8.0	8.0	8.0	8.0
12	Net Operating Expenses	2,349.5	1,592.5	1,647.2	1,652.0	1,703.4
13	Deposits to O&M Reserve Fund	—	2.3	7.2	7.4	10.1
14	Cash Defeasance/Cash Financed Capital Construction	75.0	550.0	400.0	400.0	400.0
15	Total Expenses	$2,424.5	$2,144.8	$2,054.4	$2,059.4	$2,113.5

Totals may not add due to rounding. Figures are calculated on a cash basis.
Source: Amawalk Consulting.

Operating 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.

Authority Operations. Administrative expenses of the Authority shown on Line 1 of the table above, include annual fees required by the Corporation in connection with the Authority's participation in the State Revolving Fund Program. These fees are projected to be $12.9 million in Fiscal Year 2018 and are expected to increase in future years as the outstanding principal of bonds issued to the Corporation increases. Other expenses of the Authority include but are not limited to payments under interest rate exchange agreements (net of receipts), fees related to adjustable rate bonds, Commercial Paper Notes and the management of investments and arbitrage rebate payments.

Board Operations. The expenses of the Board include payments for the Service Line Protection Program ("SLPP") which is managed by a third party, American Water Resources. In Fiscal Year 2018, SLPP payments are expected to exceed $44 million. Corresponding revenues for the SLPP are included in user payments and are based on monthly charges for water service lines and/or sewer service lines. Enrollment in the SLPP is optional for customers. Other expenses of the Board include lock box services and professional services firms retained by the Board.

Personal Services Cost. Personal services costs for both water operations and wastewater operations include direct salary costs plus fringe benefit and pension costs. The projected personal services costs for Fiscal Years 2018 through 2022 reflect an allowance for fringe benefit and pension costs which are expected to be 50.11% of salaries and wages. For information on assumptions with respect to labor settlements and a recent tentative settlement agreement with DC37, see "THE DEPARTMENT OF ENVIRONMENTAL PROTECTION — Labor Relations."

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.

Other than personal services costs include property taxes paid to upstate communities for watershed properties as well as chemicals, electricity, and other expenses. All but a small percentage of the Water System functions by gravity so that electricity costs necessary to maintain normal water transmission and distribution are relatively small.

Property tax payments for City-owned watershed lands are expected to be approximately $165.0 million in Fiscal Year 2018. Property taxes on all watershed properties are assumed to increase at the rate of 3% annually through Fiscal Year 2022.

DEP adds chemicals, including fluoride and chlorine, to drinking water and uses other chemicals in the treatment of wastewater. In Fiscal Year 2018, the anticipated cost of chemicals for the System is approximately $53.7 million.

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. The projected other than personnel expenses for Fiscal Year 2018 include $48.3 million for programs related to filtration avoidance including the operation and maintenance of wastewater treatment facilities in the watershed. The budgeted amounts will increase in subsequent years. Such programs also include certain capital investments which are contained within the CIP. The forecasted operation and maintenance expenses for the Water System reflect operation and maintenance costs due to the Watershed Agreement.

In Fiscal Year 2018, operation and maintenance expenses for the Croton Filtration Plant and the UV Facility are projected to be a total of $37.8 million. This amount includes allowances for police and security but excludes property taxes for the UV Facility. Operating expenses for these plants are assumed to increase in Fiscal Year 2019 through Fiscal Year 2022 at the rate of 3% annually.

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.

Other than personal services costs are assumed to increase at an estimated rate of 3% per year for the forecast period. Other than personal service 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 budgeted costs for heat, light and power for the Water System and the Sewer System in Fiscal Year 2018 are approximately $92.8 million. The vast majority of such expenses are for electricity for the Sewer System. The projected allowance for fuel oil and gasoline in Fiscal Year 2018 is $11.9 million. Another major component of other than personal services costs for the Sewer System is biosolids management, which is projected to be $51.3 million in expenses in Fiscal Year 2018.

Projected operating expenses for the System do not include provisions for the payment of any additional potential fines or penalties. See "THE SYSTEM." In the event that fines or penalties are required to be paid, operating expenses will increase in the year in which such payments are made.

Other Expenses. Other expenses of the System include indirect expenses and judgments and claims. Indirect expenses, shown on Line 10 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.

In Fiscal Year 2017, the City did not request the base rental payment, described in Section 8.2 of the Lease. See "APPENDIX C — Summary of the Lease — *Base Rental Payments*." Projections assume the continued waiver of the base rental payment through the forecast period.

Projected Financial Operations

The following table shows a summary of the forecasted cash flows for the Authority as of June 1, 2018 for Fiscal Year 2018 through Fiscal Year 2022. See "CAPITAL IMPROVEMENT AND FINANCING PROGRAM — Debt Service Requirements." See "RATES AND BILLINGS — Rates — Projected Rates." The projected rate increases described herein under "RATES AND BILLINGS — Rates" have been assumed in order to meet projected cash expenditures in compliance with the Rate Covenant. See "FINANCIAL OPERATIONS — Projected Revenues." As shown on Line 33 of the table, positive net year-end balances are projected to be maintained throughout the reporting period. Actual carryforward revenues applied to Fiscal Year 2018 were $1.212 billion. Line 34 illustrates the projected coverage of First Resolution debt service by current revenues available for debt service. Line 35 illustrates the projected coverage of First Resolution and Second Resolution debt service by current revenues available for debt service less Authority expenses.

On January 26, 2018, the Board rescinded the 2.1% increase in water and sewer rates that it had adopted effective July 1, 2016; this increase had been held in abeyance pending resolution of litigation which has now been decided in favor of the Board. The forecasted cash flows assumed no increase in rates effective July 1, 2017 so the projected revenues of the System are unaffected by the Board's action to rescind the rate increase.

The one-time bill credit of $183 for Tax Class 1 properties that was adopted by the Board for Fiscal Year 2017, which was also subject to litigation, was implemented in Fiscal Year 2018. The projected revenues reflect the effects of the one-time reduction in revenues of $121 million attributable to the credit, nearly all of which is expected to be recognized in Fiscal Year 2018.

The projected revenues in Fiscal Year 2019 reflect the anticipated effects of the 2.36% increase in water and sewer rates adopted by the Board, effective July 1, 2018. Projected revenues in Fiscal Year 2020 and subsequent years assume further rate increases in those years.

Forecasted Cash Flows
(Millions of Dollars)

Line No.	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
	Operating Revenues					
1	User Payments	3,599.5	3,673.1	3,731.3	3,825.2	3,940.2
2	Upstate Revenue	81.5	84.2	87.5	91.1	95.4
3	Miscellaneous Revenue	17.1	18.0	18.9	19.8	20.8
	Other Revenues					
4	Interest on Funds	32.0	21.0	19.0	22.0	24.0
5	Federal Subsidy on Outstanding Build America Bonds	69.9	69.9	69.8	69.7	69.6
6	Revenues Available for First Resolution Debt Service	3,800.1	3,866.1	3,926.5	4,027.8	4,150.0
	First Resolution Debt Service					
7	Outstanding Bonds	76.5	124.0	157.6	125.4	159.5
8	Anticipated Future Bonds	—	12.9	37.2	60.3	86.4
9	Total First Resolution Debt Service	76.5	136.9	194.8	185.7	245.9
	Debt Service on Subordinated Indebtedness(1)					
10	Outstanding Second Resolution Bonds issued to the public	1,048.9	1,140.0	1,158.6	1,210.0	1,193.0
11	Anticipated Future Second Resolution Bonds to be issued to the public	—	33.5	100.4	164.6	236.7
12	Interest Payments on Commercial Paper Notes	—	17.0	17.0	17.0	17.0
13	Outstanding Second Resolution Bonds issued to EFC	546.6	552.1	539.8	519.4	511.8
14	Anticipated Future Second Resolution Bonds to be issued to EFC	—	8.9	30.6	52.3	74.0
15	Less: EFC Subsidy and Capitalized Interest on FGR Subordinated Bonds	(103.9)	(107.0)	(108.7)	(110.5)	(111.0)
16	Actual Debt Service on FGR Subordinated Indebtedness	1,491.5	1,644.6	1,737.7	1,852.8	1,921.5
17	Less: Carryforward Revenues	(1,212.0)	(1,036.2)	(992.7)	(948.9)	(997.3)
18	Net Debt Service on FGR Subordinated Indebtedness	279.5	608.4	745.0	903.8	924.2
19	Total Debt Service Payable from Current Revenues	356.0	745.3	939.8	1,089.5	1,170.1
	Operating Expenses					
20	Authority Operations	53.3	56.2	59.0	61.9	65.0
21	Board Operations	50.0	51.2	53.8	56.5	59.3
22	Net Authority Expense for the Defeasance of Debt	825.0	—	—	—	—
23	Water System	596.5	639.3	650.6	658.1	677.9
24	Wastewater System	806.9	827.9	865.9	857.6	883.3
25	Indirect Expense	9.9	9.9	9.9	9.9	9.9
26	Judgments and Claims	8.0	8.0	8.0	8.0	8.0
27	Net Operating Expenses	2,349.5	1,592.5	1,647.2	1,652.0	1,703.4
28	Deposits to O&M Reserve Fund	—	2.3	7.2	7.4	10.1
29	Base Rental Payment to the City of New York	—	—	—	—	—
30	Cash Defeasance/Cash Financed Capital Construction(2)	75.0	550.0	400.0	400.0	400.0
31	Total Expenses	2,424.5	2,144.8	2,054.4	2,059.4	2,113.5
32	Cash Released from Escrow(3)	(16.6)	(16.6)	(16.6)	(118.4)	(115.3)
33	Net Year-end Balance (line 6-line 19-line 31-line 32)	1,036.2	992.7	948.9	997.3	981.7
34	First Resolution Debt Service Coverage (line 6/line 9)	49.67	28.24	20.16	21.69	16.88
35	First and Second Resolution Debt Service Coverage ((line 6-line 20)/line 19)	10.53	5.11	4.12	3.64	3.49

Source: Amawalk Consulting.

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

(1) Does not reflect interest subsidy on Build America Bonds provided by the federal government pursuant to the Recovery Act.

(2) Funds projected for Cash Financed Capital Construction may be used for the defeasance of bonds in addition to funds otherwise provided for the defeasance of bonds and may be increased or decreased by the Authority from the amounts projected in each year.

(3) Funds projected to be released from escrows set up to economically defease Outstanding Authority Bonds.

RATES AND BILLINGS

Rates

The Board is responsible for setting rates in compliance with the Rate Covenant. See "SECURITY FOR THE SECOND RESOLUTION BONDS — Rate Covenant." The Board retains the firm of Amawalk Consulting for the purpose of conducting a detailed review of the structure of water and sewer rates. The Board considers the results of Amawalk Consulting 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. Approximately, 2.2% of System Revenues are collected from such upstate users. Sewer charges are established by the Board as a percentage of water 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 2009:

History of Water and Sewer Rate Increases

Effective Date	Applicable Fiscal Year	Increase in Flat-Rate Water/Metered Water	Metered Water Rate (per ccf)(1)	Sewer Rate
July 1, 2009	2010	12.90%	$2.61	159% of water charge
July 1, 2010	2011	12.90	2.95	159% of water charge
July 1, 2011	2012	7.50	3.17	159% of water charge
July 1, 2012	2013	7.00	3.39	159% of water charge
July 1, 2013	2014	5.60	3.58	159% of water charge
July 1, 2014	2015	3.35	3.70	159% of water charge
July 1, 2015	2016	2.97	3.81	159% of water charge
July 1, 2016	2017	0.00	3.81	159% of water charge
July 1, 2017	2018	0.00	3.81	159% of water charge
July 1, 2018	2019	2.36	3.90	159% of water charge

(1) ccf: 100 cubic feet.

Projected Rates. As of June 1, 2018, forecasted debt service, operating and other costs for the System indicated the anticipated future increases in rates to be set by the Board for water and sewer services combined are 2.3% in Fiscal Year 2020, and 3.8% in each of Fiscal Years 2021 and 2022.

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.

Minimum Charge. Customers who use less than approximately 100 gallons of water per day receive a minimum bill for water and sewer use. Historically, the minimum per day charge has increased by the same percentage as the metered water rate. However, there has been no increase to the minimum charge in recent years, which remains at $1.27 per day, the level that became effective on July 1, 2013.

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. The current sewer charge applicable 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"), and the Public Authorities Law, § 1045-a et seq. The 1905 Act provides that rates shall be based on the System's actual cost of service for water supply. There are also individual agreements between various communities and the City and/or Board addressing the sale of water and rates and charges. The current upstate water rate per million gallons for daily per capita amounts not in excess of daily per capita consumption within the City (referred to as the "Entitlement Rate") is $1,728.99, which has remained unchanged since Fiscal Year 2016. In those instances where the community per capita consumption exceeds that in the City, the specified rate of charge for the excess (the "Excess Rate") is the rate charged for retail service in the City. Upstate communities have pending several challenges to the Excess Rate and the Entitlement Rate. For more information, see "LITIGATION."

Comparative Charges. The following table presents comparative annual water and sewer charges in 30 large cities based upon a survey conducted in February 2018 by Amawalk Consulting Group LLC. Using a ranking system where 1 represents the lowest rates, the City's ranking relative to these cities is: for Single-Family Residential —11, for Commercial — 17, and for Industrial — 20.

Prior summaries of Comparative Charges used 80,000 gallons of water use per year for typical single family residential customers. The most recent data for the City shows that typical annual water use for such customers is about 70,000 gallons of water per year. The table presented below illustrates the single family residential charges for each utility on the basis of 70,000 gallons per year. For informational purposes, if charges were instead computed on the basis of the previous figure of 80,000 gallons per year, New York's annual charge would be $1,055 versus a 30-city average of $1,205, ranking 13th.

Comparative Annual Water and Sewer User Charges(1)(2)(3)

	Single Family Residential			Commercial			Industrial	
	City	Annual Charge		City	Annual Charge		City	Annual Charge
1	Memphis	$ 446	1	Memphis	$ 6,645	1	Memphis	$ 445,947
2	Phoenix	$ 455	2	St. Louis	$ 8,370	2	Milwaukee	$ 631,745
3	Chicago	$ 633	3	Chicago	$ 9,045	3	Dallas	$ 696,547
4	Miami-Dade	$ 702	4	Dallas	$ 9,703	4	St. Louis	$ 721,643
5	Milwaukee	$ 739	5	Milwaukee	$ 9,776	5	Indianapolis	$ 727,981
6	Denver	$ 752	6	Phoenix	$ 9,806	6	Denver	$ 745,133
7	Dallas	$ 777	7	San Antonio	$10,037	7	San Antonio	$ 804,999
8	San Antonio	$ 797	8	Fort Worth	$10,870	8	Philadelphia	$ 899,043
9	Fort Worth	$ 877	9	Denver	$10,901	9	Jacksonville	$ 905,132
10	St. Louis	$ 911	10	Jacksonville	$11,821	10	Fort Worth	$ 914,718
11	**New York**	**$ 923**	11	Houston	$12,020	11	Columbus	$ 928,269
12	Columbus	$ 924	12	Columbus	$12,156	12	Louisville	$ 959,094
13	Houston	$ 935	13	San Jose	$12,424	13	Chicago	$ 990,865
14	Charlotte	$ 944	14	Charlotte	$12,462	14	Charlotte	$ 997,299
15	Jacksonville	$ 979	15	Indianapolis	$12,536	15	San Jose	$1,070,930
16	Detroit	$ 999	16	Louisville	$12,857	16	Detroit	$1,110,187
17	Los Angeles	$1,021	17	**New York**	**$13,192**	17	Houston	$1,112,206
18	Louisville	$1,051	18	San Diego	$13,583	18	Phoenix	$1,150,496
19	Philadelphia	$1,068	19	Los Angeles	$13,602	19	San Diego	$1,283,300
20	Boston	$1,176	20	Philadelphia	$15,865	20	**New York**	**$1,319,238**
21	Indianapolis	$1,224	21	Miami-Dade	$16,938	21	Los Angeles	$1,328,126
22	San Jose	$1,238	22	Baltimore	$17,450	22	Baltimore	$1,349,862
23	Baltimore	$1,296	23	Cleveland	$17,933	23	Austin	$1,644,879
24	San Diego	$1,302	24	Boston	$18,506	24	Washington, D.C.	$1,671,539
25	Austin	$1,327	25	Detroit	$19,030	25	Cleveland	$1,686,116
26	Cleveland	$1,441	26	San Francisco	$20,681	26	Miami-Dade	$1,856,815
27	Washington, D.C.	$1,445	27	Austin	$21,502	27	San Francisco	$2,025,256
28	Atlanta	$1,756	28	Atlanta	$28,922	28	Boston	$2,039,116
29	San Francisco	$1,903	29	Washington, D.C.	$29,990	29	Seattle	$2,617,754
30	Seattle	$2,314	30	Seattle	$31,710	30	Atlanta	$2,920,834
	Average	**$1,079**		**Average**	**$15,011**		**Average**	**$1,251,836**

(1) User charges are based upon information provided by the utilities serving the identified cities and standardized assumptions regarding water consumption, wastewater discharge, stormwater drainage area and other factors. Actual charges in each city will vary in accordance with local usage patterns. There may be significant differences in typical single family residential usage among cities which results in charges that are different than shown above. Some utilities 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. Sewer charges include stormwater charges in those cities where separate stormwater fees are assessed. Some utilities use property tax revenue or other revenues to pay for part of the cost of water, wastewater or stormwater services. In such situations, the user charges will not reflect the full cost of water, wastewater or stormwater services. Some cities impose charges that become part of the cost of water/sewer services. Water/sewer bills in some cities are subject to sales taxes, gross receipts taxes and/or other fees.

(2) Charges for single Family Residential are based on 70,000 gallons per year of consumption; Commercial is based on one million gallons per year and Industrial is based on 100 million gallons per year.

(3) Charges for all cities reflect rate schedules in effect on February 2018.

Accounts, Billing and Collection

The Bureau of Customer Services of DEP renders bills to customers of the System and collects payments of such bills. The 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 835,000 water and sewer accounts, nearly all of which are for water and sewer service. Approximately 91% of the System's water and sewer customers are residential. The remainder are commercial and industrial users, with industrial users accounting for only a small portion of water and sewer usage.

Since 1988, the basis for service charges for residential properties has been in a continuous process of transition from a flat-rate basis of annual billing to a meter-based billing system which relies on the actual measurement of usage. Part of this transition has included a Universal Metering Program for all properties to be metered to improve water conservation, water supply system management, and rate equity. Approximately 99% of all water and sewer accounts have meters installed. Since July 2000, unmetered properties which have not taken steps to install a meter have been required to pay a surcharge doubling their annual water and sewer charge. A surcharge was levied on 4,128 accounts in their most recent bills. Commercial accounts are required by the Board and the City to have meters installed for all water services, and substantially all of these accounts are in compliance with this requirement.

As of May 2018, approximately 800,900 accounts, representing 96% of total accounts and 75% of total revenues, are billed on a metered basis. Most meter-based charges are billed quarterly, except for larger accounts that are read and billed monthly. However, DEP has begun offering monthly billing as an option for all customers, and in Fiscal Year 2016, the Board introduced a program to provide a $10 credit to customers who enroll in monthly eBilling.

Approximately 34,000 accounts, representing 4% of total accounts and 25% of total revenues, are billed annually through a flat-rate system. These accounts are charged for water either on a per unit charge as part of the Multi-Family Conservation Program ("MCP") or through a frontage-based billing system, which is a computation that incorporates, among other factors, the width of the front of the building, 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. Flat-rate bills are normally sent annually to customers prior to the start of each Fiscal Year and are due at the end of the first month of the Fiscal Year. On May 4, 2012, the Board adopted a modified MCP, pursuant to which the majority of the accounts that had been billed on the frontage basis were converted to charges that are based on a fixed rate per dwelling unit per year. Currently, approximately 25,000 accounts are billed on MCP. All accounts enrolled in the MCP must have meters, automatic meter reading ("AMR") devices, and high efficiency plumbing fixtures installed, or have until December 31, 2018 to comply with MCP requirements. Accounts which fail to comply with the MCP requirements will be subject to an additional ten percent surcharge on their accounts.

Since 2009, DEP has also implemented an automated meter reading system that utilized New York City's wireless network. To date, DEP has installed over 825,000 automatic meter reading transmitters, representing 98% of DEP's installation target, and the automated meter reading system has been activated for those accounts that have had transmitters installed. All customers whose accounts have been upgraded for automated meter reading can now view their daily water consumption via DEP's website; this consumption information is automatically updated at least four times per day. With the installation of automatic meter readers, DEP has seen a large decrease in estimated bills, from 17.4% of bills in January 2009 to 2.5% of bills in May 2018.

Certain institutions may be exempt under State law from the payment of all or a portion of their water and sewer charges. These institutions include religious corporations and certain educational institutions, charitable institutions, homes for the aged, hospitals and other non-profit or charitable corporations.

DEP manages its account and billing information through its Customer Information System ("CIS"), which incorporates both frontage and metered accounts. DEP is in the process of preparing to replace CIS. The new system will replace CIS with more state-of-the-art technology. Expected enhancements are expected to include new features allowing customers to more closely monitor their bills and water usage, more dynamic business management reporting capabilities, including stronger customer data analytics and accounts receivable reporting, and overall improvements to the system's speed and flexibility. There is no current estimate of the costs of such replacement, though $32 million is included in the CIP.

The Board and DEP have undertaken initiatives to enhance the collection of water and sewer billings. In October 2007, the Board authorized and approved modifications to the regulations governing service terminations, including reducing the dollar amount and the delinquent period thresholds for determining an account's eligibility for service termination and narrowing the period of time during the year when water cannot be shut off. DEP has issued water shut-off notices to single-family residential customers pursuant to the Board's regulations governing service terminations. Although most customers receiving such notices pay their bills or enter into payment agreements, DEP has terminated service for a small number of single-family residential properties. The Board also adopted updated policies regarding the denial of access and new policies regarding theft of service, effective July 1, 2009.

In December 2007, the City Council and the Mayor reauthorized the City's lien sale program which had expired in 2006, and expanded it to allow the City, on behalf of the Board, to sell, with certain exceptions, liens from unpaid water and sewer charges on multi-family houses and commercial businesses, independent of the existence of property tax liens. Since 2007, the lien sale program authorization has expired and been reauthorized three times. The most current authorization expires on December 31, 2020.

Starting in July 2013, DEP has been working with a collection agency to assist in collecting delinquent accounts. The collection agency targets single family residential customers which are not covered by DEP's lien authorization. By aggressively pursuing collections rather than the termination of delinquent single-family residential accounts, DEP is able to reduce the number of service terminations each year.

The Board, at its annual meeting on May 21, 2010, authorized a pilot program to bill stand-alone parking lots, which historically had not received a water bill, for the stormwater runoff they produce. The pilot program for stand-alone parking lots requires lot owners with no water service to pay a charge for the stormwater runoff they produce or else demonstrate that they are addressing stormwater on site with green infrastructure or other measures. Under this pilot program, DEP is currently billing approximately 560 stand-alone parking lots on an annual basis at a rate of $0.0647 per square foot of property area for wastewater service, which will increase to $0.0662 in Fiscal Year 2019. A credit is available for parking lot owners who demonstrate the ability to capture stormwater and prevent it from entering the wastewater system.

The Board, at its annual meeting on May 8, 2015, incorporated the Home Water Assistance Program in its Water and Wastewater Rate Schedule starting in Fiscal Year 2016. As so adopted, this program provides an annual credit, which is currently $115.89 in Fiscal Year 2018, to approximately 53,000 low-income homeowners who (1) receive a Home Energy Assistance Program grant administered by the New York City Human Resources Administration or (2) receive one or both of the following exemptions administered by the New York City Department of Finance: (a) the Senior Citizen Homeowners' Exemption or (b) the Disabled Homeowners' Exemption.

The Board, at its meeting on June 16, 2017, authorized the implementation, effective July 1, 2017, of two previously announced affordability initiatives: (1) an expansion of the Home Water Assistance Program to include approximately 12,000 additional qualifying senior citizen homeowners, each of whom will receive the annual bill credit described above, and (2) the Multi-family Water Assistance Program. The Multi-family Water Assistance Program provides an annual $250 credit to as many as 40,000 units, provided that the property involved (1) is a multi-family affordable housing property identified by the Department of Housing Preservation & Development ("HPD") with at least four residential dwelling units; (2) charges average rent or maintenance that is affordable for an average household earning no more than 60% of area median income; (3) has 100% of its units at an affordable level, as provided for in an agreement with HPD or the New York City Housing Development Corporation ("HDC"); (4) has an executed agreement with HPD or HDC to preserve affordability for at least a 15-year period from July 1, 2017 or the date of contract execution; and (5) is in compliance with conservation requirements for metering and high-efficiency fixtures.

THE SYSTEM

Overview

DEP supplies water and sewer service to the Boroughs of the Bronx, Brooklyn, Manhattan, Queens, and Staten Island, an area of over 300 square miles, and serves approximately 8.6 million residents. The Water System provides an average of approximately 1,000 mgd of water in the City. Water consumption has decreased since 1980 when an average of approximately 1,500 mgd was provided by the Water System. 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 approximately 1 million additional people. 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 1,310 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 1,230 mgd of wastewater. Sewer service is provided to virtually the entire City, except for parts of the Borough of Staten Island and the Borough of Queens communities of Breezy Point and Douglas Manor. Sewer service is also provided to certain upstate communities.

According to AECOM, the System is in adequate condition (the highest rating category). See "APPENDIX A — LETTER OF AECOM USA, INC., CONSULTING ENGINEERS."

DEP protects the watershed, including water supply structures and facilities through a DEP police force of approximately 200 officers and secures facilities through locks, fences and other physical barriers to prevent access by unauthorized persons.

The Water System

Water Collection and Distribution

Water for the System can be drawn from three upstate reservoir systems (the Croton, Catskill and Delaware Systems) and a system of wells in Queens. The three upstate water collection systems include 19 storage reservoirs and three controlled lakes, with a total storage capacity of approximately 580 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. DEP is continuing to enhance its infrastructure to increase its operational flexibility.

The Water System furnishes water to users in portions of four of the eligible northern counties. The Water System provides water to nearly 90% of the residents in Westchester County and approximately 10% of the residents in Putnam, Orange and Ulster Counties.

Although all water delivered from the Croton System must be pumped, approximately 95% of the total water supply delivered from the Catskill/Delaware Systems is delivered to buildings by gravity.

See "New York City Water Supply System" map in Appendix H.

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

Name	Useable Capacity(1) (Billion Gallons)	Original In-Service Date
Croton		
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
Muscoot	4.9	1905
Bog Brook	4.4	1892
Middle Branch	4.0	1878
Boyds Corner	1.7	1873
Croton Falls Diverting	0.9	1911
Total	88.6	
Catskill		
Ashokan	125.4	1915
Schoharie	19.6	1926
Total	145.0	
Delaware		
Pepacton	148.7	1955
Cannonsville	96.0	1964
Rondout	51.8	1950
Neversink	36.7	1954
Total	333.1	
Total Useable Capacity	566.7(2)	

Totals may not add due to rounding.

(1) Volume above minimum operating level.

(2) Queens wells are currently not in use, but add an additional 2.6 billion gallons of storage capacity, when in use.

Balancing Reservoirs and Distribution Facilities

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

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

Water System Dependable Yield

System	Dependable Yield (mgd)
Croton	240
Catskill	470
Delaware	580
Queens wells	33
Total	1,323

The total volume of water used each year by the City and upstate customers includes water consumed by metered and unmetered customer accounts, water used in firefighting, leakage and other uses. The following table summarizes the total quantities of water delivered each year to the City and upstate customers for Fiscal Year 2013 through Fiscal Year 2017.

Historical Annual Water Use by the City and Upstate Customers (million gallons)

Fiscal Year	City Use	Upstate	Total
2013	369,863	40,143	410,006
2014	366,951	40,485	407,436
2015	366,070	40,745	406,815
2016	364,998	40,878	405,876
2017	364,541	41,342	405,883

Totals may not add due to rounding.

The Croton System is available to supplement the Catskill/Delaware Systems. Use of the Croton System is determined by DEP's operational needs. See "— Governmental Regulation — *Croton Filtration*." The Croton System consists of 12 reservoirs and three controlled lakes on the Croton River, its three branches and three other tributaries. The water in the Croton System flows from upstream reservoirs through natural streams to downstream reservoirs, terminating at the New Croton Reservoir. The watershed which supplies the Croton System has an area of 375 square miles. It lies primarily within the State, approximately 45 miles north of lower Manhattan, with a small portion in the State of Connecticut.

The Catskill and Delaware Systems together currently provide the vast majority of the City's daily water supply. The Catskill System watersheds occupy sparsely populated areas in the central and eastern portions of the Catskill Mountains. Water in the Catskill System comes from the Esopus and Schoharie Creek watersheds, located approximately 100 miles north of lower Manhattan and 35 miles west of the Hudson River. The Catskill System is comprised of the Schoharie Reservoir (formed by the Gilboa Dam across Schoharie Creek) and Ashokan Reservoir (formed by the Olivebridge Dam across Esopus Creek) and the Catskill Aqueduct. Schoharie Reservoir water is delivered to the Esopus Creek via the Shandaken Tunnel, from which it then travels to the Ashokan Reservoir.

Gilboa Dam is comprised of an earthen dam and a concrete gravity dam, with the concrete portion also acting as the spillway. DEP is currently upgrading the dam to meet safety guideline for new dams. The estimated cost to complete the rehabilitation of the dam is $27 million, all of which is funded in the CIP.

DEP will be making improvements to the structures and mechanical systems at the Ashokan Reservoir including upgrading and stabilizing the thirteen dikes and dams that impound the Reservoir to bring them up to modern standards. The estimated cost of the improvements at the Ashokan Reservoir to be performed in the years covered by the CIP is $742 million, all of which is included in the CIP.

The Delaware System is located approximately 125 miles north of lower Manhattan. 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 from these three reservoirs is diverted to Rondout Reservoir, formed by the Merriman Dam across Rondout Creek, a tributary to the Hudson River.

In addition, wells in Queens, which have been offline since 2007 due to the availability of higher quality water from the Catskill and Delaware Systems, are capable of providing approximately 1% of the City's daily water supply. The wells could be used to provide more of the daily supply if required to meet water supply needs. 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 System's water supply is transported through an extensive system of tunnels and aqueducts. See "New York City Water Tunnels" map in Appendix H. The City's water supply is then transported through over 6,800 miles of water mains. 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, the water is treated at the Croton Water Filtration Plant, located under Van Cortlandt Park, and then conveyed through finished water tunnels to the distribution service areas. The Catskill and Delaware Aqueducts convey water from Ashokan Reservoir and Rondout Reservoir to Kensico Reservoir and then to Hillview Reservoir in Yonkers. Hillview Reservoir serves as a balancing reservoir. Water from the Catskill and Delaware Systems is mixed in the Kensico Reservoir, and is conveyed via the Catskill/Delaware UV Facility to Hillview Reservoir where water enters Tunnels 1, 2 and 3. Trunk mains carry water from tunnel shafts and from the distribution facilities (Jerome Park and Hillview Reservoirs and Silver Lake Tanks) to the service area.

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 to meet normal demand. See "—Water for the Future" and "— Rondout-West Branch Tunnel."

Water for the Future. DEP's Water for the Future program consists of repair and replacement of portions of the Rondout-West Branch Tunnel, described below, as well as water supply augmentation projects required to ensure an adequate water supply to the City during the shutdown of the Rondout-West Branch Tunnel. Water supply augmentation includes rehabilitation of the Catskill Aqueduct, and demand management measures to encourage in-City water conservation, including retrofits on City owned facilities.

Rondout-West Branch Tunnel. The Rondout-West Branch Tunnel is a section of the Delaware Aqueduct which can convey up to 890 mgd, and typically delivers an annual average of 600 mgd, more than 50% of the City's daily water supply. The tunnel carries water 45 miles from the Delaware System under the Hudson River and into West Branch Reservoir. It has the highest pressures and the highest velocities in the Water System. 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. DEP regularly assesses the condition and integrity of the System's tunnels and aqueducts to determine the extent and effect of water loss and, 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, it has been determined that approximately 15 mgd to 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. The situation in the tunnel and amount of water loss is stable. In the opinion of the professional engineering firm retained by DEP in conjunction with that investigation, there is very little immediate risk of failure of the tunnel. To address the leak, DEP is undertaking its Water for the Future program, which includes construction of an approximately two and one-half mile long bypass tunnel. Connection of the bypass to the existing tunnel is expected to require that the tunnel be shut down for up to eight months or two or three shut downs of shorter duration, starting in 2022, during which periods supply augmentation and demand management practices are expected to be needed. The estimated remaining cost to complete the design and construction of the shafts and tunnel bypass and to implement updated water supply augmentation projects and water conservation measures is $304 million, all of which is funded in the CIP.

Tunnel 1. From Hillview Reservoir, water from the Catskill and Delaware Systems is delivered into the City by a circular, cement-lined, pressurized, bedrock tunnel that narrows in diameter from 15 to 11 feet. Tunnel 1 is 18 miles in length and extends south from Hillview Reservoir through the West Bronx to Manhattan and Brooklyn. Tunnel 1 is 200 to 750 feet underground and thus avoids interference with streets, buildings, subways, sewers, pipes and other underground infrastructure. These depths are necessary to ensure substantial rock covering to withstand the pressure of the water inside and to preclude leakage. Tunnel 1 has a capacity of approximately 1,000 mgd. Shafts placed along the tunnel connect with surface mains which deliver water to the distribution system.

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

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

Tunnel 3. Tunnel 3 is presently under construction and will increase capacity to meet a growing demand in the eastern and southern areas of the City. It will also 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, when completed, 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. Stage II consists of the Manhattan segment and the Brooklyn/Queens segment. The Manhattan segment of Stage II was completed in October 2013. The tunnel and most of the infrastructure work for the Brooklyn/Queens segment of Stage II are complete, with two final shafts to be designed and constructed. Construction of the shafts is expected to begin in 2020. The Brooklyn/Queens segment of Stage II is being maintained under pressure and is ready for rapid activation in the unlikely event of a major disruption in water delivery from Tunnel 2 as an emergency back-up water source for Tunnel 2. Designs are also underway to connect the Brooklyn/Queens segment to the Richmond Downtake Chamber, which will provide Tunnel 3 water to Staten Island. The estimated cost of work on Stage II is expected to be $660 million, all of which is funded in the CIP. The Stage III project is now referred to as the "Kensico-City Tunnel" and will extend from the Kensico Reservoir to Tunnel 3, south of Hillview Reservoir. All costs associated with the Kensico-City Tunnel are expected to be incurred in the years beyond the CIP. 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. Stage IV will enable the system to maintain full service even if Tunnel 1 or 2 were shut down.

Kensico-Eastview Connection. The Kensico-Eastview Connection will connect the Kensico Reservoir to the UV Facility (defined below under "*LT2*"), providing critical redundancy in the water supply system. The project is expected to begin in 2018 and is estimated to cost $1.2 billion, all of which is included in the CIP.

Drought Response Measures

From time to time the Water System experiences drought conditions caused by significantly below-normal precipitation in the watershed areas. The last drought was in 2002. As of September 4, 2018, the System's reservoirs were filled to 95.3% of capacity. Normal levels at this time of year are approximately 78.6% of capacity.

Throughout even the most extreme 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 maximizes 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. New York State Department of Health ("NYSDOH"), NYSDEC, and the DRBC are advised of the Water System's status, and discussions are held with City agencies concerning their prospective participation in the event of a declaration of a Drought Warning.

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

A Drought Emergency is declared when it becomes necessary to reduce consumption by imposing even more stringent measures. In addition to imposing 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.

Governmental Regulation

The System is subject to federal, State, interstate and municipal regulation. At the federal level regulatory jurisdiction is vested in USEPA; at the State level in NYSDEC and NYSDOH; at the interstate level in the DRBC and the Interstate Environmental Commission, and at the municipal level in DEP, the New York City Department of Health and Mental Hygiene ("NYCDOH"), DOB and the Department of Small Business Services, and to a limited degree, in municipalities and districts located in eight counties north of the City. Water quality protection regulations are enforced within the watershed areas north of the City through a network of overlapping governmental jurisdictions including NYSDEC, NYSDOH, DEP, and local municipal police, engineers and inspectors. The various jurisdictions maintain physical security, take water samples, monitor construction activities and wastewater treatment in the watershed, and generally oversee the physical condition of, activity on and 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 Watershed 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 and the City's Building and Building Construction Codes. These provisions are enforced by personnel from DEP, NYCDOH and DOB.

Drinking Water Regulations/Filtration and Watershed Protection. Pursuant to the SDWA, USEPA has promulgated nationwide drinking water regulations which specify the maximum levels of 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"), which prescribe guidelines concerning protection and treatment of surface water supplies. Enforcement of many of the related regulations promulgated under the SDWA, including the SWTR, has been delegated by USEPA to the NYSDOH. See "— Croton Filtration" and "— Catskill/Delaware Filtration Avoidance."

Croton Filtration. The City has constructed a full scale water treatment facility to filter Croton System water. While the facility is operational, it is anticipated that the total remaining cost to complete the Croton filtration plant will be $62 million, all of which is included in the CIP. Additionally, DEP is mandated to construct a permanent golf club house. The cost of such club house is estimated to be $62 million, all of which is included in the CIP for its construction.

Catskill/Delaware Filtration Avoidance. With respect to the Catskill and Delaware systems, the City believes that it will continue to be able to meet the criteria for non-filtered supplies under the SWTR.

Since 1993, DEP has operated the Catskill and Delaware Systems pursuant to a series of Filtration Avoidance Determinations ("FADs") under which the City is not required to filter water from such systems. Each FAD has required the City to take certain actions to protect the Catskill and Delaware Water supplies. Based on an analysis performed in 2007, DEP estimated that if the City were to have to filter water from the Catskill and Delaware Systems, construction costs would be $6 billion. An updated analysis is to be performed as part of the 2017 FAD, as defined below. DEP expects that any updated estimate will exceed $6 billion. To further the City's ability to comply with the FAD, on January 21, 1997, the City entered into the Watershed Memorandum of Agreement with the State, watershed communities, USEPA, and several environmental groups (the "Watershed Memorandum of Agreement").

In December 2017, NYSDOH issued a new FAD (the "2017 FAD"), which supersedes previous FADs. The 2017 FAD will remain in effect until a further determination is made, anticipated in 2027. The estimated capital cost of complying with the 2017 FAD is $479 million, of which $278 million is funded in the CIP. Additional funding will be added in the future.

The 2017 FAD continues many of the protective actions within the watershed included in previous FADs, including land acquisition; working with farmers to prevent farm runoff from reaching streams; upgrading wastewater infrastructure; and stabilizing streambanks to withstand flood events and reduce erosion. In addition, the 2017 FAD includes enhancements to existing programs, including a new focus on acquiring lands in stream buffers and flood prone areas; resizing municipal infrastructure like bridges and culverts to better accommodate high stream flows; and expanding eligibility to small businesses to access funds to repair failing septic systems. Further, the 2017 FAD requires the City to allocate an additional $69 million for its core land acquisition program, as well as an additional $11 million for agricultural conservation easements, and up to $11 million for the streamside acquisition program.

On June 29, 2015, NYSDEC issued a findings statement, completing its eight-year environmental review of natural gas drilling using high volume hydraulic fracturing ("HVHF") in New York State, including the Catskill/Delaware watershed, concluding that the public health risks of HVHF cannot adequately be avoided or mitigated. While HVHF is now effectively banned based on the environmental review, low volume hydraulic fracturing is currently allowed Statewide, including in the watershed. However, NYSDEC has stated its belief that it is not economically viable, and especially in light of the Statewide ban, it is unlikely that it will take place in the watershed in the foreseeable future.

LT2. In January 2006, USEPA issued the Long Term 2 Enhanced Surface Water Treatment Rule ("LT2"). The purpose of LT2 is to reduce the incidence of waterborne disease by mandating certain levels of inactivation and/or the removal of certain microorganisms from water supply systems, including the Catskill and Delaware Systems. DEP is complying with such levels through the operation of its ultraviolet treatment facility ("UV Facility"), which provides treatment for Catskill and Delaware water. LT2 also mandates that uncovered finished water storage facilities, which include the Hillview Reservoir, be covered or that water from such facilities be treated. Although in 2011, USEPA announced that as part of a periodic review of existing regulations, it would review LT2, in December 2016, USEPA notified the City that it did not plan to revise LT2 at that time. Therefore, DEP is required under LT2 to cover the Hillview Reservoir. See "—*Hillview Reservoir.*"

Hillview Reservoir. DEP's commitments to cover the Hillview Reservoir pre-date LT2. In March 1996, DEP entered into an administrative order with NYSDOH (the "State Hillview Administrative Order") which, as modified in 1997 and 1999, required, among other things, the City to cover the Hillview Reservoir by December 31, 2005 to reduce the possibility of *E. coli* bacteria entering the Water System. Pursuant to a 2010 administrative order with USEPA (the "Federal Hillview Administrative Order"), the City's deadline to begin constructing the cover was extended to January 31, 2017, with a construction completion date of May 31, 2028. The State Hillview Administrative Order was modified to mirror the Federal Hillview Administrative Order schedule. The State and Federal Hillview Administrative Orders allow the City to seek a schedule modification based on DEP's on-going assessment of water supply facility construction priorities, although there is no assurance that any such modification would be granted.

In March 2013, DEP requested that NYSDOH and USEPA extend the deadline to begin construction of the cover for an additional six years beyond the existing January 31, 2017 deadline, but negotiations were suspended while USEPA completed its review of LT2. DEP has not begun construction of the cover and is therefore not in compliance with the January 31, 2017 deadline to start construction. In light of USEPA's decision in December 2016 not to amend LT2, USEPA and USDOJ are negotiating a federal consent decree to cover the reservoir with DEP.

The most recent estimate of the cost of constructing a concrete cover over the Hillview Reservoir, as DEP originally proposed, is expected to be approximately $1.6 billion. DEP has initiated procurement of a facility planning contract to analyze alternatives for achieving LT2 compliance. The CIP does not include funding to construct a cover.

Tap Water Testing Program. Pursuant to USEPA and NYSDOH regulations that require water suppliers to monitor for lead and copper that may have leached from pipes into drinking water (the "Lead and Copper Rule"), DEP manages a sampling program whereby consumers who have lead service lines or copper pipes with lead solder, and have agreed to participate in the sampling program, submit samples of drinking water from their taps. To reduce the leaching of metals, DEP adds food grade orthophosphate and sodium hydroxide to the water before it enters the distribution system, which promotes the formation of a protective coating inside pipes and plumbing and minimizes corrosion. DEP is currently in compliance with the Lead and Copper Rule. In addition, DEP manages a free residential lead and copper testing program in which residents can have their tap water tested for lead and copper by DEP at no cost. While this program is not required by USEPA and NYSDOH regulations, it provides valuable information directly to residents regarding lead and copper within their homes and recommendations on reducing exposure to lead.

Delaware System Operations. 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 authorizes the System to divert 800 mgd of water from the Delaware River Basin for use by the Water System, subject to specified conditions. A series of agreements among the parties to the 1954 Decree required the System, under certain circumstances, based on the time of year, reservoir storage, anticipated inflow and water supply demand, to release water from the three reservoirs into the tributaries of the Delaware River, in support of enhanced habitat protection and flood mitigation. A new agreement among the Decree Parties was reached in October 2017, which establishes a new 10-year program. The agreement protects the available supply of drinking water for the City, and expands efforts to enhance flood attenuation and support recreational use of the upper Delaware River. The parties to the agreement have committed to pursue a number of scientific studies to refine management of the resources to advance the myriad interests connected to the Delaware River. Enforcement of the 1954 Decree is under the jurisdiction of a River Master appointed by the Supreme Court of the United States.

Shandaken Tunnel SPDES Permit. As a result of the federal court's determination in 2003 that a State Pollutant Discharge Elimination System ("SPDES") permit is required for the City's transfer of water through the Shandaken Tunnel, DEP applied for and obtained the Shandaken Tunnel SPDES permit in 2006. As a result of state court litigation challenging the terms of the SPDES permit, in 2008, DEP applied for variances with respect to the permit's temperature and turbidity limits. The State has not acted on DEP's variance application. Under USEPA's Water Transfers Rule, adopted in 2008 as the State Court litigation was concluding, the Clean Water Act permit program does not apply to transfers of untreated water (such as the Shandaken Tunnel). Several entities brought litigation challenging the Water Transfers Rule. On January 18, 2017, the Second Circuit Court of Appeals reversed the Southern District of New York's 2014 decision vacating the Water Transfers Rule, finding that the rule reflects a reasonable interpretation of the Clean Water Act and therefore reinstating it. On February 26, 2018, the U.S. Supreme Court denied two petitions seeking review of the Second Circuit decision. Accordingly, the Water Transfers Rule is in effect, and the City does not believe it is required to maintain a SPDES permit for this water transfer under federal law. However, the SPDES permit is still in place. Additional conditions on the Shandaken Tunnel could require DEP to undertake costly capital projects.

Catalum SPDES Permit. DEP adds alum to the Catskill aqueduct upstream of the Kensico Reservoir when necessary to control turbidity levels. The diversions of water containing alum into the Kensico Reservoir are authorized under a SPDES permit for the Catskill Influent Chamber ("Catalum SPDES Permit"). Among other things, the Catalum SPDES Permit requires DEP to take measures to reduce the use of alum. One such measure is DEP's use of the Ashokan Release Channel to release water from the Ashokan Reservoir through a release channel into the Lower Esopus Creek. This release of water from the west basin of Ashokan Reservoir helps prevent the transfer of turbid water to the east basin but can result in an increase in both flow and turbidity in the lower Esopus Creek, which some stakeholders have opposed. NYSDEC served the City with an administrative complaint in February 2011, alleging a number of violations of the Catalum SPDES Permit. DEP and NYSDEC executed an administrative consent order in October 2013, which requires, among other things, that DEP seek a modification of the Catalum SPDES Permit to incorporate a protocol for operating the Ashokan Release Channel.

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 wastewater treatment facilities. See "New York City Drainage Areas and Wastewater Treatment Plants" map in Appendix H.

Sewage Collection and Treatment

The Sewer System's plants treat approximately 1,230 mgd of wastewater. The Sewer System is divided into 14 drainage areas corresponding to the 14 wastewater treatment plants ("WWTPs") and includes over 7,500 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 60% of the City is served by combined sewers. In addition to the sewage pipes, the Sewer System includes catch basins and seepage basins to prevent flooding and sewer backups.

The facilities related to the treatment of sewage include wastewater treatment plants, four combined sewer overflow retention facilities, 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 either directly or after additional provisions such as composting or lime stabilization.

The Sewer System's water pollution control pump stations convey wastewater to the wastewater treatment 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.

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 and for design and construction of facilities to address this issue. DEP is under an NYSDEC Administrative Consent Order to reduce the volume of combined sewer overflows. See "— Governmental Regulation — Combined Sewer Overflows."

Most of the biosolids from DEP's WWTPs are dewatered at one of the six dewatering facilities located at DEP WWTPs; a small percentage of liquid sludge is sent for processing at a facility operated by the Passaic Valley Sewerage Commission under an intergovernmental agreement. The dewatered biosolids are trucked to landfill sites by private contractors.

Governmental Regulation

Under the Clean Water Act, USEPA oversees compliance with federal environmental laws, regulations and guidelines concerning sewage. Included in that regulatory framework are the National Pollutant Discharge Elimination System Permit Program and the issuance of wastewater treatment plant operating permits. As authorized by the Clean Water Act, administration of the permit program has been delegated to NYSDEC.

Wastewater Treatment Plants. The System includes six City-owned surface discharging WWTPs in the watershed, one City-owned subsurface discharging WWTP in the watershed, one additional City-owned upstate surface discharging water control plant in the City of Port Jervis, and 14 in-City WWTPs.

DEP's 14 in-City WWTPs are governed by plant-specific SPDES permits which require compliance with myriad conditions. The current permits were issued October 15, 2015.

For information on litigation relating to this matter, see "LITIGATION."

Harbor and Waterway Protection. According to the most recent Harbor Survey issued by DEP, the water quality in New York Harbor and surrounding rivers continues to show long-term overall improvement. The Harbor Survey is an ongoing monitoring effort of the City's waterways that has been done since 1909. The Survey monitors over a dozen water quality parameters at 70 sampling stations within New York Harbor and its tributaries. A key parameter of the overall health of aquatic systems is dissolved oxygen ("DO"). The Harbor Survey has found DO levels in most parts of the harbor at historic highs, although river-bottom DO levels are periodically below acceptable concentrations. Many local waterways, which were unfishable as recently as the 1980s, now meet the coliform bathing standards. These water quality improvements are primarily the result of continued wastewater treatment plant construction and upgrades, abatement and surveillance of illegal discharges, and increased capture of wet-weather flows.

In 2006, the City entered into a State Court Consent Judgment with NYSDEC (the "Nitrogen Consent Judgment") which required DEP to upgrade five wastewater treatment plants, in order to reduce nitrogen discharges at those plants. Pursuant to a series of amendments, including the "First Amended Nitrogen Consent Judgment," executed in 2011, DEP committed to construct nitrogen upgrades at a total of eight wastewater treatment plants, encompassing the four plants that discharge into Jamaica Bay and the four Upper East River plants. Construction at the Upper East River Plants was completed in 2017. Construction at the Jamaica Bay plants is required, under the First Amended Nitrogen Consent Judgment, to be completed by the end of 2020, but while construction is complete at two of the plants (26th Ward and Jamaica), construction at the other two Jamaica Bay plants (Coney Island and Rockaway) is delayed, for which DEP is subject to stipulated penalties under the Judgment. DEP expects construction to continue through late 2022. The remaining cost of complying with the Nitrogen Consent Judgment, as amended by the First Amended Nitrogen Consent Judgment, is approximately $86 million, all of which is included in the CIP.

Newtown Creek/Full Secondary Treatment Requirements. The Newtown Creek WWTP was upgraded to meet secondary treatment standards, pursuant to the terms of a State court consent judgment between NYSDEC and DEP. In July 2017, DEP certified completion of all the terms of the consent judgment. All of the System's 14 in-City WWTPs now meet secondary treatment requirements.

Combined Sewer Overflows. The System is required to develop programs to reduce the impacts to water quality of combined sewer overflows ("CSOs"). The City's CSO program has been subject to a series of consent orders since 1992.

In September 2010, DEP released a Green Infrastructure Plan (the "Plan"), that offered a new approach to reducing CSOs through a cost-effective mix of Grey Infrastructure and methods such as bioswales, rain gardens, and green roofs to either retain and/or detain flow during rain events ("Green Infrastructure"). In March 2012, DEP and NYSDEC entered into a further modification to the CSO Consent Order (the "2012 Modified CSO Consent Order") that incorporated the goals of the Plan. The 2012 Modified CSO Consent Order eliminates nine projects that were contemplated by the CSO Consent Order and deferred two additional projects pending completion of long term control plans. In lieu of these projects, DEP is required to construct 15 projects (a mix of Green Infrastructure and Grey Infrastructure).

Under the CSO Order, DEP is also required to submit eleven CSO long-term control plans ("LTCPs"), for each CSO water body, between 2013 and 2018. LTCPs include projects designed to ensure that the water bodies comply with Clean Water Act requirements. DEP has submitted nine LTCPs under the 2012 Modified CSO Consent Order, eight of which have been approved by NYSDEC. The selected projects in the approved LTCPs are now enforceable requirements under the CSO Consent Order. DEP estimates the cost of complying with the 2012 Modified CSO Consent Order through the end of the CIP to be $2.8 billion, all of which is currently included in the CIP. Certain of the milestones in the 2012 Modified CSO Consent Order extend beyond the end of the CIP.

Prior to approving the Alley Creek LTCP, in 2013 NYSDEC sought penalties under the CSO Consent Order for the period that there was a disapproved LTCP. That claim was discontinued but NYSDEC may seek to revive it in the future.

DEP is required to submit two additional LTCPs in 2018, and to respond to NYSDEC's comments and requests for information, for other water bodies in accordance with the 2012 Modified CSO Consent Order.

On June 29, 2017, a coalition of environmental groups sued USEPA challenging the State's 2015 water quality standards – which form the basis for the approved LTCPs and those DEP is continuing to develop – as inconsistent with the federal Clean Water Act. The lawsuit alleges that the State's use of fecal coliform bacteria to set the standard is outdated and inconsistent with recreational water quality criteria issued by USEPA in 2012, which are based on enterococcus bacteria rather than fecal coliform. The City and State intervened in the lawsuit. On March 7, 2018, USEPA disapproved the State standards because they are based on coliform bacteria and directed NYSDEC to adopt new water quality criteria to protect primary contact recreation. If the court finds that recreational water quality criteria apply and therefore that water quality standards for enterococcus must be developed and met, or if USEPA's disapproval otherwise results in the adoption of new standards, DEP could be compelled to revise its LTCPs to meet the new standards. This could impose potentially significant additional costs of complying with the 2012 Modified CSO Consent Order. Such potential additional costs are not reflected in the CIP or the projected operating costs of the System.

USEPA Request for Information/Sewer Backups. In January 2010 and again in July 2015, DEP received requests for information, pursuant to Section 308 of the Clean Water Act, from USEPA concerning the City's 14 wastewater treatment plants, focusing particularly on sewer backups into homes from the wastewater collection system and DEP's programs to address them. DEP provided the information requested. On August 31, 2016, USEPA served the City with an Administrative Order asserting that sewer backs ups constitute violations of the Clean Water Act. Under the Administrative Order, the City is required to submit an Operations and Maintenance Plan ("Plan") for USEPA approval to work toward the goal of eliminating sewer backups from the Sewer System. The Plan must include a number of elements including benchmarks for annual reduction of sewer backups and targeted reductions in areas most heavily impacted by backups. Under the Administrative Order, USEPA seeks to have oversight of the Plan for at least 7 years. The City does not believe that USEPA has jurisdiction to regulate sewer backups that do not reach navigable waters. DEP provided a Sewer Backup Prevention and Response Plan to USEPA on May 31, 2017, which includes a targeted pilot program for sewer inspections in select geographic area. In July 2017, DEP commenced the pilot program.

Superfund Designation. DEP is a potentially responsible party ("PRP") for three designated Superfund sites, discussed in detail below. Under the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA"), a responsible party may be held responsible for monies expended for response actions at a Superfund site, including investigative, planning, removal, remedial and USEPA enforcement actions. A responsible party may also be ordered by USEPA to take response actions itself. Responsible parties include, among others, past or current owners or operators of a facility from which there is a release of a hazardous substance that causes the incurrence of response costs. The nature, extent, and cost of response actions at these sites, and the contribution, if any, of discharges from the System, and the extent of DEP's liability, if any, for monies expended for such response actions, will likely not be determined for several years.

On March 2, 2010, USEPA listed the Gowanus Canal (the "Canal"), a waterway located in Brooklyn, New York, as a federal Superfund site under CERCLA. USEPA considers the City a PRP under CERCLA, based on contaminants from currently and formerly City-owned and operated properties, as well as from the City's CSOs. On September 30, 2013, USEPA issued the Record of Decision ("ROD") for the Canal, setting forth requirements for dredging contaminated sediment in the Canal and covering it with a cap as well as source control requirements. The ROD requires that two CSO retention tanks be constructed as part of the source control component of the remedy. USEPA estimates that the costs of the tanks will be approximately $85 million and the overall cleanup costs (to be allocated among potentially responsible parties) will be $506 million. The City estimates that the tanks will actually cost in excess of $750 million, which is included in the CIP. On May 28, 2014, USEPA issued a unilateral administrative order ("Unilateral Order") requiring the City to design major components of the remedy for the Canal, including the CSO retention tanks, remediation of the First Street basin (a currently filled-in portion of the Canal), and stormwater controls. As required by the Unilateral Order, DEP submitted its siting recommendations for the two CSO tanks to USEPA on June 30, 2015. As set forth in a consent order, which was fully executed on June 9, 2016, USEPA agrees with the City's preferred location for one of the tanks and, with respect to the other tank, USEPA has directed the City to site the tank at the City's preferred location subject to certain milestones. In addition, the City is participating in an ongoing arbitration process with approximately 20 other parties to determine each party's share of liability for the design of the in-canal (dredging and capping) portion of the remedy.

On September 27, 2010, USEPA listed Newtown Creek, the waterway on the border between Brooklyn and Queens, New York, as a Superfund site. On April 6, 2010, USEPA notified the City that it considers the City a PRP under CERCLA for hazardous substances in Newtown Creek. In its Newtown Creek PRP notice letter, USEPA identified historical City activities that filled former wetlands and low lying areas in and around the Newtown Creek and releases from formerly City-owned and operated facilities, including municipal incinerators, as well as discharges from sewers and CSO outfalls as potential sources of hazardous substances in the Newtown Creek. In July, 2011, the City entered into an Administrative Settlement Agreement and Order on Consent with USEPA and five other PRPs to conduct an investigation of conditions in the Creek and evaluate feasible remedies. The investigation and feasibility study is expected to take approximately eleven years. The City's share will be determined in a future allocation proceeding. The settlement does not cover any remedy that may ultimately be chosen by USEPA to address the contamination identified as a result of the investigation and evaluation.

On May 12, 2014, USEPA listed the former Wolff-Alport Chemical Company site ("Wolff-Alport Site") in Ridgewood, Queens as a Superfund site. The designation is based on radioactive contamination resulting from the operations of the Wolff-Alport Chemical Company during the 1920s to 1950s, which, among other things, disposed of radioactive material on-site and via the Sewer System. In 2013, USEPA, in cooperation with City and State agencies, completed a response action to implement certain interim remedial measures at the Wolff-Alport Site to address the Site's short-term public health risks. From 2015 to 2017, USEPA undertook a remedial investigation and feasibility study that assessed, among other things, impacts to the sewer system and City right-of-way from operations at the Wolff-Alport Site, and evaluated a range of remedial alternatives. In September 2017, USEPA issued its ROD identifying its selected remedy. The ROD requires jet washing and replacement of sewers, and excavation of contaminated portions of the right-of-way. USEPA estimated work for the entire Wolff-Alport Site to cost $39 million. The City anticipates that the costs for the portion of the work in the sewers and the right-of-way could significantly exceed that estimate. In December 2017, USEPA notified the City of its status as a PRP for the work on City property and sought to have the City perform some of the work. In February 2018, the City notified USEPA that, subject to certain conditions, it was willing to undertake such work and will be negotiating an agreement with USEPA to address that work.

Storm Sewer Infrastructure. Certain parts of the City do not have built-out storm sewer infrastructure, including areas of southeast Queens and Staten Island. Those areas of Staten Island are being addressed through DEP's Bluebelt Program. See "CAPITAL IMPROVEMENT AND FINANCING PROGRAM—Ten Year Capital Strategy, Current Capital Plan and the Capital Improvement Program—*Sewers*". For southeast Queens, the City is planning to construct storm sewer infrastructure, which is expected to take forty-five years. A complete cost estimate is not available, though $1.7 billion is included in the CIP.

Separate Sewers. In addition to the combined sewers, which are subject to the CSO control program, portions of the City are served by separate sewers designed to carry only stormwater. Such municipal separate storm sewer systems ("MS4s") are also subject to regulation under the Clean Water Act, and therefore require SPDES permits. Until August 2015, the SPDES requirements for the City's separate sewers were incorporated into the SPDES permits for the 14 wastewater treatment plants. On August 1, 2015, a new Citywide MS4 permit took effect. The costs of complying with the permit are expected to include both operating and capital expenses. Pursuant to the permit, the City is required to conduct a fiscal analysis of the resources necessary to fund the costs of complying with the permit. Responsibility for such costs is shared across a number of City agencies, including DEP. DEP does not yet have an estimate of the costs associated with these new requirements through the years covered by the CIP, which could be substantial. The CIP currently includes $20 million for DEP's share of capital costs associated with complying with the permit.

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

ENVIRONMENTAL MATTERS

Sandy

On Monday, October 29, 2012 Hurricane Sandy hit the Mid-Atlantic East Coast as a tropical storm ("Sandy"). The City continues to expend funds to address the impact of Sandy on the System, but anticipates that the costs to the System relating to the storm will largely be paid from non-City sources, primarily the federal government.

Climate Change

DEP has been engaged in an ongoing review of the effects of climate change on the System, including the impact of rising sea levels and changes to the intensity and frequency of precipitation events throughout the System, including the impact on the System's water supply assets and sewer and wastewater assets. In June 2013, the City released a report, updated in April 2015 with the release of One New York: the Plan for a Strong and Just City (the "Report"), which presents a long-term plan to address the City's, including DEP's, goals of resiliency, sustainability, equity and growth for the City. As stated in the section entitled "Vision 4" in the Report, the City's climate resiliency planning is based on the climate change impact projections from the New York City Panel on Climate Change ("NPCC"), a body of more than a dozen leading independent climate and social scientists. The NPCC has identified that the City is already experiencing the impacts of climate change and projects dramatic impacts from climate change on the City in the future. The NPCC has published three reports, most recently in 2015, and an updated report is expected in December 2018. Progress reports on One New York: the Plan for a Strong and Just City are issued on an annual basis, with the last progress report released on April 20, 2018.

In October 2013, DEP released two studies informed by the report issued in June 2013 summarizing certain climate-related impacts on the System's water and sewer assets. First, the NYC Wastewater Resiliency Plan summarized the results of a study of the System's principal wastewater assets and proposed measures to protect such assets from future storms and rising sea levels. Since the System's wastewater assets are located along waterbodies, they are particularly at risk from rising sea levels and major storms. Second, the Phase I Assessment of the Climate Change Integrated Modeling Project summarized the prospective effects of climate change on the quantity and quality of water on the System's water supply.

Building on the recommendations contained in the reports and plans discussed above, the System is in the process of implementing climate resiliency projects directed toward mitigating the risks identified in the NPCC report, as well as other risks identified by DEP. Such plans include both stand-alone resiliency projects and the integration of resiliency protection into DEP's ongoing investments. Such projects include structural upgrades and improvements to the Ashokan Reservoir, improvements to wastewater treatment assets to protect them from flooding, and resiliency projects along the East River. A portion of the cost of completing such projects is included in the Capital Improvement Program. The total cost of these projects is expected to be substantial. These projects are in various stages of feasibility review, design and construction and/or implementation. Some projects are expected to require additional funding to the extent that they are in the planning stages or current funding does not provide for the costs of construction. In addition to such projects, DEP expects that additional resiliency projects will be identified and implemented in the coming years, addressing the risks identified in the NPCC report including coastal storms, sea level rise, extreme heat and intense rainfall, as well as other risks the DEP may identify.

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 tables. Although the Authority considers the sources to be reliable, the Authority has made no independent verification of the information provided by non-city sources and does not warrant its accuracy.

New York City Economy

The City, with an estimated population of approximately 8.6 million, is an international center of business and culture. Its non-manufacturing economy is broadly based, with the banking and securities, insurance, information services, communications, technology, hospitality, fashion, design, retailing, education and healthcare industries accounting for a significant portion of the City's total employment earnings. Additionally, the City is a leading tourist destination. Manufacturing activity in the City is conducted primarily in apparel and printing.

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, professional and business services, 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 United Nations and the foreign consulates.

Economic activity in the City has experienced periods of growth and recession and can be expected to experience periods of growth and recession in the future. The City experienced a recession in the early 1970s through the middle of that decade, followed by a period of expansion in the late 1970s through the late 1980s. The City fell into recession again in the early 1990s which was followed by an expansion that lasted until 2001. The economic slowdown that began in 2001 as a result of the September 11 attack, a national economic recession, and a downturn in the securities industry came to an end in 2003. Subsequently, Wall Street activity, tourism and the real estate market drove a broad-based economic recovery until the second half of 2007. A decrease in economic activity began in the second half of 2007 and continued through the first half of 2010. The Mayor's most recent financial plan for the City's Fiscal Years 2018 through 2022 assumes that the gradual increase in economic activity that began in the second half of 2010 will continue through the Financial Plan Period.

Personal Income

Total personal income for City residents, unadjusted for the effects of inflation and the differential in living costs, increased from 2006 to 2016 (the most recent year for which City personal income data are available). For the period from 2006 through 2008, annual personal income growth averaged 4.5% and 4.8% for City and the nation, respectively. Total personal income in the City decreased by 3.4% in 2009, and increased by an average of 4.8% from 2010 through 2016. The following table sets forth information regarding personal income in the City from 2006 to 2016.

Personal Income(1)

Year	Total City ($ billions)	Per Capita City	Per Capita U.S.	Per Capita City as a Percent of U.S.
2006	$378.0	$47,289	$38,144	124%
2007	409.5	51,099	39,821	128%
2008	412.9	51,176	41,082	125%
2009	398.8	49,042	39,376	125%
2010	412.6	50,370	40,277	125%
2011	446.8	53,939	42,461	127%
2012	476.2	56,952	44,282	129%
2013	492.6	58,481	44,493	131%
2014	513.7	60,631	46,494	130%
2015	536.9	63,039	48,451	130%
2016	547.7	64,146	49,246	130%

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, supplements to wages and salaries, proprietors' income, personal dividend income, personal interest income, rental income of persons and transfer payments.

Employment Trends

The City is a leading center for the banking, securities, insurance, information services, communications, technology, hospitality, fashion, design, retailing, education and healthcare services industries. Over the past two decades the City has experienced a number of business cycles. From 1992 to 2000, the City added 456,700 private sector jobs (growth of 17%). From 2000 to 2003, the City lost 173,100 private sector jobs (decline of 5%). From 2003 to 2008, the City added 257,400 private sector jobs (growth of 9%). From 2008 to 2009, the City lost 103,000 private sector jobs (decline of 3%). From 2009 to 2016, the City added 648,700 private sector jobs (growth of 21%). All such changes are based on average annual employment levels through and including the years referenced. As of July 2018, total employment in the City was 4,503,400 compared to 4,421,800 in July 2017, an increase of approximately 1.8% based on data provided by the New York State Department of Labor, which is not seasonally adjusted.

The table below shows the distribution of employment from 2008 to 2017.

Employment Distribution

	Average Annual Employment (In thousands)									
	2008	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Goods Producing Sectors										
Construction	132.7	120.8	112.5	112.3	116.1	122.2	129.2	139.3	147.2	151.1
Manufacturing	95.6	81.6	76.3	75.7	76.3	76.4	76.6	77.8	76.1	73.1
Service Producing Sectors										
Trade Transportation and Utilities	574.6	552.7	559.7	575.6	590.5	605.0	620.6	630.2	630.4	634.3
Information	169.5	165.2	165.9	170.8	175.7	179.2	185.0	189.0	192.6	197.1
Financial Activities	464.6	433.9	428.3	439.1	438.8	437.5	449.2	459.3	465.9	469.8
Professional and Business Services	603.4	569.2	575.3	597.5	619.3	642.9	669.0	700.0	722.3	742.3
Education and Health Services	736.3	752.6	771.6	789.2	805.6	831.1	866.4	896.9	928.7	963.4
Leisure and Hospitality	310.2	308.5	322.2	342.2	365.7	385.4	408.5	427.8	440.2	452.1
Other Services	160.8	160.3	160.6	165.2	170.4	174.9	180.2	185.7	190.1	191.5
Total Private	3,247.7	3,144.7	3,172.5	3,267.5	3,358.5	3,454.5	3,584.7	3,705.9	3,793.5	3,874.7
Government	564.1	567.0	558.0	550.6	546.1	544.4	545.4	549.9	552.3	552.1
Total	3,811.8	3,711.7	3,730.5	3,818.1	3,904.6	3,998.9	4,130.1	4,255.8	4,345.7	4,426.7

Note: Totals may not add due to rounding.

Source: New York State Department of Labor. Data are presented using the North American Industry Classification System ("NAICS").

Sectoral Distribution of Employment and Earnings

In 2016, the City's service producing sectors provided approximately 3.6 million jobs and accounted for approximately 82% of total employment. Figures on the sectoral distribution of employment in the City from 1980 to 2000 reflect a significant shift to the service producing sectors and a shrinking manufacturing base relative to the nation.

The structural shift to the service producing sectors affects the total earnings as well as the average wage per employee because employee compensation in certain of those sectors, such as financial activities and professional and business services, tends to be considerably higher than in most other sectors. Moreover, average wage rates in these sectors are significantly higher in the City than in the nation. In the City in 2016, the employment share for the financial activities and professional and business services sectors was approximately 27% while the earnings share for that same sector was approximately 45%. In the nation, those same service producing sectors accounted for only approximately 20% of employment and 26% of earnings in 2016. Due to the earnings distribution in the City, sudden or large shocks in the financial markets may have a disproportionately adverse effect on the City relative to the nation.

The City's and the nation's employment and earnings by sector for 2016 are set forth in the following table.

Sectoral Distribution of Employment and Earnings in 2016(1)

	Employment		Earnings(2)	
	NYC	**U.S.**	**NYC**	**U.S.**
Goods-Producing Sectors				
Mining	0.0%	0.5%	0.0%	1.5%
Construction	3.4	4.7	3.6	6.1
Manufacturing	1.8	8.6	1.1	9.4
Total Goods-Producing	5.1	13.7	4.7	16.9
Service-Producing Sectors				
Trade, Transportation and Utilities	14.5	18.9	9.4	15.4
Information	4.4	1.9	7.7	3.4
Financial Activities.	10.7	5.7	24.1	9.1
Professional and Business Services	16.6	13.9	21.2	17.0
Education and Health Services	21.4	15.7	12.0	13.0
Leisure & Hospitality	10.1	10.8	5.1	4.6
Other Services	4.4	3.9	3.2	3.7
Total Service-Producing	82.2	70.9	82.6	66.3
Total Private Sector	87.3	84.6	88.3	83.2
Government(3)	12.7	15.4	11.7	16.8

Note: Data may not add due to rounding or disclosure limitations. Data are presented using NAICS.

Sources: The primary sources of employment and earnings information are New York State Department of Labor, 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 proprietor's income. The latest information available is 2016 data.

(3) Excludes military establishments.

The comparison of employment and earnings in 1980 and 2000 set forth below is presented using the industry classification system which was in use until the adoption of NAICS in the late 1990s. Though NAICS has been implemented for most government industry statistical reporting, most historical earnings data have not been converted. Furthermore, it is not possible to compare data from the two classification systems except in the general categorization of government, private and total employment. The table below reflects the overall increase in the service producing sectors and the declining manufacturing base in the City from 1980 to 2000.

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

Sectoral Distribution of Employment and Earnings(1)

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

Totals may not add due to rounding. Data are presented using the Standard Industrial Classification System.

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

(1) The sectoral distributions are obtained by dividing each industry's employment or earnings by total non-agricultural employment or earnings.

(2) Includes the sum of wage and salary disbursements, other labor income, and proprietors' income. The latest information available for the City is 2000 data.

(3) Excludes military establishments.

Population

The City has been the most populous city in the United States since 1790. The City's population is larger than the combined population of Los Angeles and Chicago, the two next most populous cities in the nation.

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

Population

Year	Population Total
1970	7,895,563
1980	7,071,639
1990	7,322,564
2000	8,008,278
2010	8,175,133

Note: Figures do not include an undetermined number of undocumented aliens.

Source: U.S. Department of Commerce, Bureau of the Census.

The United States Census Bureau estimates that the City's population increased to 8,622,698 in July 2017.

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 2019 BB Bonds, or in any way contesting or affecting the validity of the Fiscal 2019 BB Bonds, or any proceedings of the Authority, the Board or the City taken with respect to the issuance or sale of the Fiscal 2019 BB Bonds, or with respect to the Resolution, the Second Resolution or the pledge or application of any money or security provided for the payment of the Fiscal 2019 BB 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. Contract claims on water supply, sewer and wastewater treatment projects arise in varying amounts based on alleged change orders and related matters. While most seek under $10 million in damages, actions seeking, respectively, damages of approximately $22 million, $11 million, $16 million, $24 million, $14 million, $18 million, $16 million and $32 million are pending. While the probable outcome of these actions cannot be determined at this time, contract claims are expected to be funded through the CIP, which may be revised from time to time to accommodate such claims as well as other changes therein. The ultimate outcome of the proceedings described below is not currently predictable, and unfavorable determinations therein could result in substantial expenditures.

On October 30, 2013, various upstate communities filed a petition against the Water Board with the New York Public Service Commission ("PSC") for a declaratory ruling that the rate charged by the Water Board for water supplied in excess of the statutory entitlement of water in Fiscal Year 2014 was unreasonably high. The same entities filed a Supplemental Joint Petition on June 30, 2015 to challenge the Excess Rates in effect for Fiscal Years 2015 and 2016. The Water Board believes that the Excess Rates are reasonable and established in compliance with all statutory and regulatory requirements. The Water Board also believes that the PSC lacks jurisdiction over the dispute and is seeking to have the petition dismissed. In addition to challenges to the Excess Rate, on June 30, 2015, upstate communities sought review from NYSDEC of Entitlement Rates for Fiscal Years 2015 and 2016. On August 18, 2016, they filed another petition with NYSDEC seeking review of the Entitlement Rate for Fiscal Year 2017 and seeking to determine whether the PSC or NYSDEC has jurisdiction to review the Excess Rate. On February 9, 2018, the NYSDEC administrative law judge ruled that NYSDEC has jurisdiction to review the Excess Rate. This ruling may be appealed.

In connection with the Water for the Future project, two fatalities occurred as a result of a construction accident that occurred as the prime contractor, Halmar International ("Halmar"), was constructing a mock-up of an aqueduct section at its own facility in Maywood, NY. The accident occurred on December 2, 2013, as a large section of formwork failed while the contractor was pouring concrete. According to a report prepared by the contractor's engineering consultant, the failure was the result of significant deficiencies in the formwork anchoring and bracing, which deviated significantly from the formwork design drawings. Actions have been brought against the City in connection with the two fatalities, one of which seeks $30 million and the other of which does not specify an amount. An action seeking $10 million by a third plaintiff was also brought in connection with injuries sustained during the accident. The federal Occupational Safety and

Health Administration ("OSHA") investigated the accident and cited Halmar for two serious violations of workplace safety standards and proposed a fine of $14,000 against Halmar. Halmar entered into a settlement agreement with OSHA pursuant to which it paid a penalty of $7,000.

On January 15, 2014, a 36-inch water main located at Fifth Avenue and East 13th Street in Manhattan failed resulting in significant flooding. Seventy-two notices of claim were served on the City alleging property damage, and 18 actions naming the City, and in some cases, Con Edison have been filed. Both the City and Con Edison have denied liability. The City has impleaded and asserted counterclaims against The New School, which was one of the properties involved in the flooding, due to The New School's large excavation and construction projects. The other properties involved include retail, medical, residential, residential storage units, and vehicles in two parking garages. The water main and other infrastructure items were retrieved from the location and preserved as evidence. A forensic investigation of the causes of the water main failure is ongoing.

On March 12, 2014, a gas explosion occurred in East Harlem resulting in the collapse of two five-story mixed commercial/residential buildings located at 1644 and 1646 Park Avenue. Eight people were killed, and dozens more injured. Fifty-seven lawsuits (consisting of 171 plaintiffs) have been commenced against the City, including seven for wrongful death. The remainder allege personal injury, property damage, and/or business interruption. Plaintiffs assert generally that the City was negligent in inspecting and maintaining infrastructure, including gas and water lines. The National Transportation Safety Board ("NTSB") investigated the cause of the explosion. The NTSB completed its investigation into the probable cause of the explosion and issued its findings on June 9, 2015. The NTSB issued two probable cause findings. First, that Con Edison installed a defective fusion joint between its gas main and a service pipe, which failed. Second, that NYC DEP did not repair a known breach in the City sewer, allowing supporting soil under the gas main to wash into the sewer, causing the gas pipe to sag; and that the sagging gas pipe led to a separation of the defective fusion joint, allowing gas to escape, fueling the explosion. The New York State Department of Public Service ("DPS") issued its final report regarding its investigation on November 19, 2015. DPS concluded that Con Edison's improper installation of the fusion joint at 1642 Park Avenue, which failed, was the primary source of natural gas that caused the explosion. DPS identified thirteen regulations that Con Edison appears to have violated, as well as four other areas of concern related to Con Edison. DPS also concluded that the gas main was caused to move downward due to supporting soil being washed away from the pre-existing sewer breach, and due to excess loading from repeated layers of asphalt roadway, which led to the fusion joint failure. It is not clear at this point how the NTSB and DPS findings will affect the City's potential liability with respect to this matter.

APPROVAL OF LEGAL PROCEEDINGS

The issuance of the Fiscal 2019 BB Bonds is subject to the approval of legality by Nixon Peabody LLP, New York, New York, and Hardwick Law Firm, LLC, New York, New York, Co-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 Orrick, Herrington & Sutcliffe LLP, New York, New York, and D. Seaton and Associates, P.A., P.C., New York, New York.

FINANCIAL ADVISORS

Lamont Financial Services Corporation and Drexel Hamilton, LLC are serving as financial advisors to the Authority with respect to the sale of the Fiscal 2019 BB 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 First 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 First 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 Underwriters or any holders of the Fiscal 2019 BB 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 Underwriters to determine, as a condition to purchasing the Fiscal 2019 BB 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 2019 BB Bonds ("Bondholders") that it will:

(1) within 270 days after the end of the 2018 Fiscal Year and each Fiscal Year, to the Electronic Municipal Market Access System ("EMMA") (http://emma.msrb.org) established by the Municipal Securities Rulemaking Board (the "MSRB"), post 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 not in excess of 10 Business Days after the occurrence of any event described below, notice to EMMA, of any of the following events with respect to the Fiscal 2019 BB Bonds:

(a) principal and interest payment delinquencies;

(b) non-payment related defaults if material;

(c) unscheduled draws on credit enhancement reflecting financial difficulties and substitution of credit or liquidity providers, or their failure to perform;

(d) unscheduled draws on debt service reserves reflecting financial difficulties;

(e) adverse tax opinions or the issuance by the IRS of a proposed or final determination of taxability, Notices of Proposed Issue (IRS Form 5701-TEB) or other material notices or determinations with respect to the tax status of the Fiscal 2019 BB Bonds or other material events affecting the tax status of the Fiscal 2019 BB Bonds;

(f) modifications to rights of security holders if material;

(g) bond calls if material, and tender offers;

(h) defeasances;

(i) release, substitution, or sale of property securing repayment of the securities if material;

(j) bankruptcy, insolvency, receivership, or similar event of the Authority;

(k) consummation of a merger, consolidation, or acquisition involving the Authority, or sale of all or substantially all of the assets of the Authority, other than in the ordinary course of business, the entry into a definitive agreement to undertake such action or the termination of a definitive agreement relating to such actions, other than pursuant to its terms, if material;

(l) appointment of a successor or additional trustee or the change of name of a trustee, if material; and

(m) rating changes; and

(3) provide in a timely manner, to the MSRB, notice of any failure by the Authority to comply with clause (1) above.

With respect to event (c), the Authority has not provided for credit or liquidity enhancement with respect to the Fiscal 2019 BB Bonds and the Authority does not undertake to provide any notice with respect to credit enhancement added after the primary offering of the securities, unless the Authority applies for or participates in obtaining the enhancement.

Event (d) is included pursuant to a letter from the SEC staff to the National Association of Bond Lawyers dated September 19, 1995. However, event (d) may not be applicable, since no "debt service reserves" will be established for the Fiscal 2019 BB Bonds.

Event (e) is relevant only to the extent interest on the Fiscal 2019 BB Bonds was or was purported to be tax-exempt at issuance.

With respect to event (g) the Authority does not undertake to provide the above-described event notice of a mandatory redemption through sinking fund installments, not otherwise contingent upon the occurrence of an event, if (i) the terms, dates and amounts of redemption are set forth in detail in the final official statement (as defined in the Rule), (ii) the only open issue, which securities will be redeemed in the case of a partial redemption, (iii) notice of redemption is given to the Bondholders as required under the terms of the securities and (iv) public notice of redemption is given pursuant to Exchange Act Release No. 23856 of the SEC, even if the originally scheduled amounts are reduced prior to optional redemptions or security purchases.

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.

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 for the holders of a majority in aggregate principal amount of the Fiscal 2019 BB Bonds affected thereby which at the time are Outstanding. All Proceedings may be instituted only as specified herein, in the federal or State courts located in the Borough of Manhattan, State and City of New York, and for the equal benefit of all holders of the Outstanding Bonds benefited by the same or a substantially similar covenant. No remedy may be sought or granted other than specific performance of the covenant at issue.

Any amendment to the Undertaking will take effect only if:

(a) the amendment is made in connection with a change in circumstances that arises from a change in legal requirements, change in law, or change in the identity, nature, or status of the Authority or the Board, or type of business conducted; the Undertaking, as amended, would have complied with the requirements of the Rule at the time of sale of the Fiscal 2019 BB Bonds to the Underwriters of such bonds, 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 Fund, the 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. Annual valuation of all 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. Authority does not make leveraged investments.

RATINGS

S&P Global Ratings, Fitch, Inc. and Moody's Investors Service, Inc. have rated the Fiscal 2019 BB Bonds as set forth under "SUMMARY STATEMENT—Ratings."

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 rating 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 2019 BB Bonds. A securities rating is not a recommendation to buy, sell or hold securities.

UNDERWRITING

Jefferies LLC has agreed, subject to certain conditions, to purchase the Fiscal 2019 BB Bonds from the Authority at an aggregate purchase price equal to the initial offering price thereof, less an underwriter's discount of $112,389.85 (inclusive of expenses). The obligations of the Underwriter are subject to certain conditions precedent, and the Underwriter will be obligated to purchase all of such Fiscal 2019 BB Bonds if any of such Fiscal 2019 BB Bonds are purchased. The Fiscal 2019 BB Bonds may be offered and sold to certain dealers (including dealers depositing the Fiscal 2019 BB 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 Underwriter.

In addition, the Underwriter may have entered into distribution agreements with other broker-dealers (that have not been designated by the Authority as the Underwriter) for the distribution of the Fiscal 2019 BB Bonds at the original issue price. Such agreements generally provide that the Underwriter will share a portion of its underwriting compensation or selling concession with such broker-dealers.

The Underwriter and its affiliates are full service financial institutions engaged in various activities, which may include securities trading, commercial and investment banking, financial advisory, investment management, principal investment, hedging, financing and brokerage activities. The Underwriter and its affiliates have, from time to time, performed, and may in the future perform, various investment banking services for the Authority for which they have received or will receive customary fees and expenses.

In the ordinary course of their various business activities, the Underwriter and its affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (which may include bank loans and/or credit default swaps) for their own account and for the accounts of their customers and may at any time hold long and short positions in such securities and instruments. Such investment and securities activities may involve securities and instruments of the Authority.

LEGALITY FOR INVESTMENT AND DEPOSIT

Under the Act, the Fiscal 2019 BB 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 2019 BB Bonds or obligations of the State, may properly and legally invest funds including capital in their control or belonging to them in such Fiscal 2019 BB Bonds. The Act further provides that the Fiscal 2019 BB Bonds are securities which may be deposited with and may be received by all public officers and bodies of the State and all municipalities for any purposes for which the deposit of bonds or other obligations of the State is or may hereafter be authorized.

FINANCIAL STATEMENTS AND INDEPENDENT AUDITORS

The financial statements of the System as of and for the years ended June 30, 2017 and June 30, 2016 (the "Audited System Financial Statements") included in Appendix D to this Official Statement have been audited by Marks Paneth LLP, independent certified public accountants, as stated in their report appearing therein. Marks Paneth LLP, the Authority's independent auditor has not reviewed, commented on or approved, and is not associated with, this Official Statement. The report of Marks Paneth LLP relating to the Authority's financial statements for the fiscal years ended June 30, 2017 and 2016, which is a matter of public record, is included in this Official Statement. However, Marks Paneth LLP has not performed any procedures on any financial statements or other financial information of the Authority, including without limitation any of the information contained in this Official Statement, since the date of such report and has not been asked to consent to the inclusion of its report in this Official Statement.

ENGINEERING FEASIBILITY REPORT AND FORECASTED CASH FLOWS

Certain information contained in this Official Statement under the captions "CAPITAL IMPROVEMENT AND FINANCING PROGRAM — Ten Year Capital Strategy, Current Capital Plan and the Capital Improvement Program," "THE SYSTEM — The Water System," "THE SYSTEM — The Sewer System" has been reviewed and independently evaluated by AECOM which has provided the opinion letter set forth in Appendix A confirming such information. AECOM 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, AECOM 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" and "Future Debt Service Requirements" under the caption "CAPITAL IMPROVEMENT AND FINANCING PROGRAM" and "Projected Operating and Maintenance Expenses," "Projected Revenues," and "Forecasted Cash Flows" under the caption "FINANCIAL OPERATIONS" have been examined by Amawalk Consulting, to the extent and for the periods indicated in those tables. The conclusions of Amawalk Consulting with respect to the reasonableness of the forecasts are set forth in an opinion letter attached hereto as Appendix B. Amawalk Consulting has provided consulting services including feasibility studies, rate studies and organizational analysis to numerous clients in the water and wastewater industry in addition to the City of New York Water and Sewer System, including the Boston Water and Sewer Commission, the District of Columbia Water and Sewer Authority and the Water and Sewer Authority of Nanjing, PRC.

TAX MATTERS

Federal Income Taxes

The Internal Revenue Code of 1986, as amended (the "Code"), imposes certain requirements that must be met subsequent to the issuance and delivery of the Fiscal 2019 BB 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 2019 BB Bonds to be included in gross income for federal income tax purposes retroactive to the date of issue of the Fiscal 2019 BB Bonds. Pursuant to the Second Resolution and the Tax Certificate as to Arbitrage and the Provisions of Sections 103 and 141-150 of the Internal Revenue Code of 1986 (the "Tax Certificate"), the Authority has covenanted to comply with the applicable requirements of the Code in order to maintain the exclusion of the interest on the Fiscal 2019 BB Bonds from gross income for federal income tax purposes pursuant to Section 103 of the Code. In addition, the Authority has made certain other representations and certifications in the Second Resolution and the Tax Certificate relating to the tax exemption of the Fiscal 2019 BB Bonds. Co-Bond Counsel will not independently verify the accuracy of those certifications and representations.

In the opinions of Nixon Peabody LLP and Hardwick Law Firm, LLC, Co-Bond Counsel, under existing law and assuming compliance with the aforementioned tax covenant, and the accuracy of the representations and certifications described above, interest on the Fiscal 2019 BB Bonds is excluded from gross income for federal income tax purposes under Section 103 of the Code. Co-Bond Counsel are also of the opinion that such interest is not treated as a preference item in calculating the alternative minimum tax imposed under the Code. However, it is noted that solely for taxable years beginning before January 1, 2018, interest on the Fiscal 2019 BB Bonds is included in the adjusted current earnings of certain corporations for purposes of computing the alternative minimum tax imposed on such corporations under the Code.

State Taxes

Co-Bond Counsel are also of the opinion that under existing law, interest on the Fiscal 2019 BB Bonds is exempt from personal income taxes imposed by the State of New York or any political subdivision of the State of New York (including The City of New York). Co-Bond Counsel express no opinion as to other New York State or local tax consequences arising with respect to the Fiscal 2019 BB Bonds or as to the taxability of the Fiscal 2019 BB Bonds or the income therefrom under the laws of any jurisdiction other than the State of New York.

Ancillary Tax Matters

Ownership of the Fiscal 2019 BB Bonds may result in other federal tax consequences to certain taxpayers, including, without limitation, certain S corporations, foreign corporations with branches in the United States, property and casualty insurance companies, individuals receiving Social Security or Railroad Retirement benefits, individuals seeking to claim the earned income credit, and taxpayers (including banks, thrift institutions and other financial institutions) who may be deemed to have incurred or continued indebtedness to purchase or to carry the Fiscal 2019 BB Bonds. Prospective investors are advised to consult their own tax advisors regarding these rules.

Interest paid on tax-exempt obligations such as the Fiscal 2019 BB Bonds is subject to information reporting to the Internal Revenue Service (the "IRS") in a manner similar to interest paid on taxable obligations. In addition, interest on the Fiscal 2019 BB Bonds may be subject to backup withholding if such interest is paid to a registered owner that (a) fails to provide certain identifying information (such as the registered owner's taxpayer identification number) in the manner required by the IRS, or (b) has been identified by the IRS as being subject to backup withholding.

Co-Bond Counsel are not rendering any opinion as to any federal or state tax matters other than those described in the opinion attached as Appendix E. Prospective investors, particularly those who may be subject to special rules described above, are advised to consult their own tax advisors regarding the federal tax consequences of owning and disposing of the Fiscal 2019 BB Bonds, as well as any tax consequences arising under the laws of any state or other taxing jurisdiction.

Changes in Law and Post Issuance Events

Legislative or administrative actions and court decisions, at either the federal or state level, could have an adverse impact on the potential benefits of the exclusion from gross income of the interest on the Fiscal 2019 BB Bonds for federal or state income tax purposes, and thus on the value or marketability of the Fiscal 2019 BB Bonds. This could result from changes to federal or state income tax rates, changes in the structure of federal or state income taxes (including replacement with another type of tax), repeal of the exclusion of the interest on the Fiscal 2019 BB Bonds from gross income for federal or state income tax purposes, or otherwise. It is not possible to predict whether any legislative or administrative actions or court decisions having an adverse impact on the federal or state income tax treatment of holders of the Fiscal 2019 BB Bonds may occur. Prospective purchasers of the Fiscal 2019 BB Bonds should consult their own tax advisors regarding the impact of any change in law on the Fiscal 2019 BB Bonds.

Co-Bond Counsel have not undertaken to advise in the future whether any events after the date of issuance and delivery of the Fiscal 2019 BB Bonds may affect the tax status of interest on the Fiscal 2019 BB Bonds. Co-Bond Counsel express no opinion as to any federal, state or local tax law consequences with respect to the Fiscal 2019 BB Bonds, or the interest thereon, if any action is taken with respect to the Fiscal 2019 BB Bonds or the proceeds thereof upon the advice or approval of other counsel.

CERTAIN LEGAL OPINIONS

At the request of the Authority, Co-Bond Counsel reviewed issues related to the effects on the Board and the Authority of a case under Title 11 of the United States Code (the "Bankruptcy Code") in which the City is a debtor. Specifically, Co-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 First Resolution, the Second 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, Co-Bond Counsel has rendered to the Authority their opinions, subject to all the facts, assumptions and qualifications set forth therein, that under the Bankruptcy Code a court, in the circumstances described above, (i) would not hold that the Revenues would be property of the City within the meaning of Section 902(1) of the Bankruptcy Code, and thus (ii) would not hold that the Board's rights 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 (including Section 362(a) as incorporated therein), and (iii) would not order the substantive consolidation of the assets and liabilities of the Board and/or the Authority with those of the City. The opinions are based on an analysis of existing laws, regulations, rulings and court decisions, and cover certain matters not directly addressed by such authorities. There are no court decisions directly on point.

Co-Bond Counsel has also rendered to the Authority their opinions that, subject to all the facts, assumptions and qualifications set forth therein, in a case under the Bankruptcy Code in which the City is a debtor (i) the Lease Agreement would be treated as an unexpired lease of real property, (ii) if the City determined to assume the Lease Agreement, the Lease Agreement would continue pursuant to its terms, and (iii) if the City determined to reject the Lease Agreement, the Board may elect to retain its rights under the Lease Agreement 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 Agreement.

The Bankruptcy Code provides that in order for a municipality to be a debtor under the Bankruptcy Code, it must be specifically authorized by State law to file such a proceeding. Co-Bond Counsel is of the opinion, subject to all the facts, assumptions and qualifications set forth therein, that (a) the only form of relief under the Bankruptcy Code for which either the Authority or the Board would be eligible is a voluntary proceeding under Chapter 9 (the municipal bankruptcy chapter), and (b) current law does not authorize either the Authority or the Board to properly be a debtor in a voluntary or involuntary case under the Bankruptcy Code.

Co-Bond Counsel has not rendered opinions, 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 proceeding 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. Co-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

APPENDIX A

LETTER OF
AECOM USA, INC.
CONSULTING ENGINEERS

September 5, 2018

Ms. Olga Chernat, CFA
Executive Director
New York City Municipal Water Finance Authority

Subject: New York City Municipal Water Finance Authority Water and Sewer System Second Resolution Revenue Bonds, Adjustable Rate Fiscal 2019 Series BB

Dear Ms. Chernat,

We hereby submit the opinion of AECOM USA, Inc. ("AECOM") on the condition of the Water and Sewer System serving The City of New York (the "City"). Capitalized terms used herein and not otherwise defined have the meanings ascribed to such terms in the Official Statement.

Based on the information set forth in this Official Statement, our experience and our analyses during the preparation of the 1983 feasibility study, the methodology described below and subject to the reliance and assumptions made throughout this letter, AECOM concludes that overall the Water and Sewer system (the "System") serving the City continues to be operated and managed in a professional and prudent manner with an appropriate regard for the level of service afforded to the users within the available funding. Further, AECOM 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 2019 are adequate for the continued reliable operation of the System. The expense budget projections for Fiscal Year 2019 are currently under review based upon the projected new needs of the System.
- The Capital Improvement Program (the "CIP") for Fiscal Years 2018-2027 is responsive to the long-term operating requirements of the System.
- Current staffing levels of the System are sufficient for proper operation and maintenance. DEP is evaluating future staffing needs to improve operation and maintenance efficiency of the System.

AECOM 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 AECOM in connection with the issuance by the New York City Municipal Water Finance Authority (the "Authority") of the Water and Sewer System Second General Resolution Revenue Bonds, Fiscal 2019 Series BB. 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 — Ten Year Capital Strategy, Current Capital Plan and the Capital Improvement Program, "THE SYSTEM — The Water System," and "THE SYSTEM — The Sewer System." The following identifies the major investigations undertaken:

- 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 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, AECOM has provided engineering services related to the City's Water and Wastewater Operations Evaluation Study. During this period AECOM has performed an evaluation of the condition of the System, independently reviewed the capital plans for water and wastewater programs, and reviewed the operating programs of the New York City Department of Environmental Protection ("DEP"). The following topics were addressed in this effort:

- 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 City were conducted, current engineering and financial reports, System operating data and other documents were reviewed and major facilities were visited. 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 System was rated by AECOM. A uniform rating system was established consisting of three rating categories; Adequate, Marginal, and Inadequate as described:

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

The Consulting Engineer

AECOM has served the water and wastewater industry for over 100 years and the City as a consulting engineer for many decades dealing with water supply, water distribution, sewage collection, and wastewater treatment. AECOM 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,

William P. Pfrang, P.E., BCEE
Vice President
AECOM USA, Inc.

Amawalk
Consulting Group LLC

90 Broad Street, Suite 707A, New York, NY 10004 • Tel: 212.361.0050 • Fax: 212.361.0055

September 5, 2018

Ms. Olga Chernat
Executive Director
New York City Municipal Water Finance Authority

Subject: New York City Municipal Water Finance Authority
Water and Sewer System Second General Resolution Revenue Bonds,
Adjustable Rate Fiscal 2019 Series BB

Dear Ms. Chernat:

The purpose of this letter is to summarize the conclusions of the independent analysis of the financial forecast of the Authority (the "Forecasted Cash Flows") for Fiscal Years 2018 through 2022 (the "Reporting Period") prepared by the Amawalk Consulting Group LLC in connection with the issuance by the New York City Municipal Water Finance Authority (the "Authority") of the Authority's $100,000,000 Water and Sewer System Second General Resolution Revenue Bonds, Adjustable Rate Fiscal 2019 Series BB (the "Fiscal 2019 BB Bonds"). Proceeds from the Fiscal 2019 BB Bonds are expected to be used to (i) pay cost of improvements to the System and (ii) pay certain costs of issuance. In conducting the analysis, the Amawalk Consulting Group LLC has prepared the following tables which are included in this Official Statement under the headings "Capital Improvement and Financing Program" and "Financial Operations."

- Sources and Uses of Capital Funds
- Future Debt Service Requirements
- Projected Revenues
- Projected Operation and Maintenance 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 (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 Bond Resolution (the "First 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 five years ending June 30, 2022 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 First Resolution. The term "Revenues," as defined by the First 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 First 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. The Authority's books, records, financial reports, and statistical data have been reviewed to the extent practicable, and other investigations and analyses were conducted as deemed necessary to assemble and analyze the forecast of revenues, revenue requirements, and debt service coverage for the Reporting Period. Various financial tests and analyses have been performed to support the findings and conclusions presented herein. The Authority's fiscal year ends on June 30, and all references in the Official Statement to a fiscal year ("Fiscal Year") relate to the 12 month period ending June 30 of the year shown.

Proposed improvements and additions to the System under the CIP for the Reporting Period were independently evaluated and confirmed by AECOM USA, Inc. ("AECOM"). The forecasted cash flows rely upon the conclusions of AECOM regarding the capital and operating expenditures that are necessary during the Reporting Period to maintain the System in good working order.

Based on the studies performed, the Amawalk Consulting Group LLC offers the following opinions and conclusions:

1. 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 First 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 all 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 System;

d. One hundred percent (100%) of other Required Deposits as required by the First Resolution. In addition, revenues are adequate to make all payments to the City.

2. In the analysis of the forecast of future operations summarized in this Official Statement, the Amawalk Consulting Group LLC has reviewed certain assumptions with respect to conditions, events and circumstances which may occur in the future. 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. The water and wastewater rates, fees and charges of the Board, including projected increases, are reasonable and compare favorably to the rates and charges of other major cities.

The opportunity to be of service to the Authority in this important matter is greatly appreciated.

Very truly yours,

Edward J. Markus

Edward J. Markus
Amawalk Consulting Group LLC

APPENDIX C

GLOSSARY AND SUMMARY OF CERTAIN DOCUMENTS

GLOSSARY

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

Definition of Certain Terms Used in the First Resolution

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. Bond Counsel has determined that payments made under an Interest Rate Exchange Agreement are deemed Authority Expenses if the Interest Rate Exchange Agreement relates to First Resolution Bonds.

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 First 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 First 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: AECOM 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 First Resolution to be paid into any reserve or other special fund from the proceeds of Bonds and the financing or the placing of any Water Project in operation, including reimbursement to any governmental entity or any other person for expenditures that would be Costs of such Water Project and all claims arising from any of the foregoing.

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

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

Debt Service: For any Fiscal Year or part thereof, as of any date of calculation and with respect to any Series, means an amount equal to the sum of (a) interest payable during such Fiscal Year or part thereof on Bonds of such Series, except to the extent that such interest is to be paid from amounts representing

Capitalized Interest and (b) the Principal Installments of the Bonds of such Series payable during such Fiscal Year or part thereof. Such interest and Principal Installments for such Series shall be calculated on the assumption that (x) no Bonds of such Series Outstanding at the date of calculation will cease to be Outstanding except by reason of the payment thereof upon stated maturity or upon mandatory redemption by application of Sinking Fund Installments and (y) Variable Rate Bonds will bear interest at the greater of (A) the rate or rates which were assumed by the Authority in the Authority Budget for such Fiscal Year to be borne by Variable Rate Bonds during such Fiscal Year or (B) the actual rate or rates borne during such Fiscal Year on Variable Rate Bonds Outstanding during the 12 calendar months preceding the date of calculation.

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

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

Defeasance Obligations: (A) any non-callable bonds or other obligations which as to principal and interest constitute direct obligations of, or are guaranteed by the United States of America, including obligations of any agency thereof or corporation which has been or may hereafter be created pursuant to an Act of Congress as an agency or instrumentality of the United States of America to the extent unconditionally guaranteed by the United States of America or (B) any other non-callable receipt, certificate or other evidence of an ownership interest in obligations or in specified portions thereof (which may consist of specified portions of the interest thereon) of the character described in subclause (A); provided, however, that, when used in connection with any Bond authorized to be issued by a Supplemental Resolution adopted on or after June 1, 2001, such term also means: (C) a non-callable obligation of the United States of America which has been stripped by the United States Department of 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 First 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) or (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.

THE FOLLOWING DEFINITION HAS BECOME EFFECTIVE WITH RESPECT TO FIRST RESOLUTION BONDS ISSUED OR REOFFERED AFTER OCTOBER 21, 2015, BUT ONLY TO THE EXTENT MONEYS ARE SEPARATELY SEGREGATED OR ALLOCATED TO THE FIRST RESOLUTION BONDS ISSUED OR REOFFERED AFTER OCTOBER 21, 2015. THE FOLLOWING DEFINITION WILL BECOME EFFECTIVE WITH RESPECT TO ALL OTHER FIRST RESOLUTION BONDS AT SUCH TIME AS THE APPROVAL OF TWO-THIRDS IN PRINCIPAL AMOUNT OF THE HOLDERS OF ALL OUTSTANDING FIRST RESOLUTION BONDS HAS BEEN OBTAINED, AT WHICH TIME THE DEFINITION OF DEFEASANCE OBLIGATIONS WILL BE AMENDED TO READ AS FOLLOWS FOR ALL OUTSTANDING FIRST RESOLUTION BONDS.

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) of this clause;

(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 Outstanding Bonds to be defeased);

(D) the interest component of REFCORP bonds for which separation 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 Section 1201 of the Second General Resolution, is rated in the highest rating category by at least two Rating Agencies, one of which then maintains a rating on the Outstanding Bonds, (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 the principal of and 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 Agricultural Mortgage Corporation (Farmer Mac), Federal Farm Credit Bank (FFCB), Federal Home Loan Bank (FHLB), Federal Home Loan Mortgage Corporation (FHLMC-Freddie Mac), Federal National Mortgage Corporation (FNMA-Fannie Mae), Financing Corporation (FICO), Resolution Funding Corporation (REFCORP) and the Tennessee Valley Authority, or any other instrumentality or government sponsored enterprise of the United States of America and (ii) rated in the highest rating category by at least two Rating Agencies, one of which maintains a rating on the Outstanding Bonds, unless such obligations have a maturity of 360 days or less in which case such obligations are rated in the highest short-term rating category, without regard to qualification of such rating symbols such as “+” or “-”, by at least two Rating Agencies, at least one of which then maintains a rating on the Outstanding Bonds; provided, further, that the term “Defeasance Obligations” shall not mean any interest in a unit investment trust or a mutual fund.

FGR 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 FGR Subordinated Indebtedness Fund.

FGR Subordinated Indebtedness Fund: The Subordinated Indebtedness Fund established pursuant to the First Resolution.

Financial Guaranties: 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 Services; 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 Services; 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 First 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 First Resolution shall be adjusted accordingly.

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

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

Investment Securities 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.

THE FOLLOWING DEFINITION HAS BECOME EFFECTIVE WITH RESPECT TO FIRST RESOLUTION BONDS ISSUED OR REOFFERED AFTER OCTOBER 21, 2015, BUT ONLY TO THE EXTENT MONEYS ARE SEPARATELY SEGREGATED OR ALLOCATED TO THE FIRST RESOLUTION BONDS ISSUED OR REOFFERED AFTER OCTOBER 21, 2015. THE FOLLOWING DEFINITION WILL BECOME EFFECTIVE WITH RESPECT TO ALL OTHER FIRST RESOLUTION BONDS AT SUCH TIME AS THE APPROVAL OF TWO-THIRDS IN PRINCIPAL AMOUNT OF THE HOLDERS OF ALL OUTSTANDING FIRST RESOLUTION BONDS HAS BEEN OBTAINED, AT WHICH TIME THE DEFINITION OF INVESTMENT SECURITIES WILL BE AMENDED TO READ AS FOLLOWS FOR ALL OUTSTANDING FIRST RESOLUTION BONDS.

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) obligations of any state, agency, political subdivision or public authority within the United States, provided such obligations are rated, at the time of purchase, in one of the two highest rating categories by at least two Rating Agencies, one of which maintains a rating on the 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, subdivision, department, division or instrumentality thereof or corporation which has been or may hereafter be created pursuant to an Act of Congress as an agency, subdivision, department, division 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); securities under this clause include but are not limited to those issued by the US Treasury (bills, notes, bonds, STRIPS, TIPS), Government National Mortgage Association (GNMA), Farm Credit System Financial Assistance Corporation (FCSFAC), General Service Administration (GSA), Maritime Administration, Small Business Administration and the Federal Financing Bank;

(iii) obligations of any agency, subdivision, department, division, instrumentality or government sponsored enterprise of the United States of America; or obligations fully guaranteed as to interest and principal by any agency, subdivision, department, division, instrumentality or government sponsored enterprise of the United States of America; provided, however, that at the time of purchase such obligations are rated in one of the two highest rating categories by at least two Rating Agencies, at least one of which then maintains a rating on the Outstanding Bonds, unless such obligations have a maturity of 360 days or less in which case such obligations are rated in the highest short-term rating category, without regard to qualification of such rating symbols such as "+" or "-", by at least two Rating Agencies, at least one of which then maintains a rating on the Outstanding 2019 Series AA Bonds; securities under this clause include but are not limited to those issued by the Federal Agricultural Mortgage Corporation (Farmer Mac), Federal Farm Credit bank (FFCB), Federal Home Loan Bank (FHLB), Federal Home Loan Mortgage Corporation (FHLMC-Freddie Mac), Federal National Mortgage Corporation (FNMA – Fannie Mae), Financing Corporation (FICO), Resolution Funding Corporation (REFCORP) and the Tennessee Valley Authority;

(iv) banker's acceptances or certificates of deposit issued by a commercial bank (A) whose long-term debt obligations are rated in one of the two highest long-term rating categories by at least two Rating Agencies, one of which then maintains a rating on the Outstanding Bonds (B) that has its principal place of business within the United States 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 at least two Rating Agencies, one of which then maintains a rating on the Outstanding Bonds, in its highest rating category;

(vi) repurchase agreements collateralized by securities described in clauses (i), (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 at least two Rating Agencies, one of which then maintains a rating on the 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 $200,000,000, 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 weekly and will liquidate the collateral securities if any deficiency in the required collateral percentage is not restored within five business days of such valuation and (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%;

(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 at least two Rating Agencies, one of which then maintains a rating on the Outstanding Bonds;

(viii) money market funds rated in the highest rating category for comparable types of obligations by at least two Rating Agencies, one of which then maintains a rating on the Outstanding 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 (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 at least two Rating Agencies, one of which then maintains a rating on the Outstanding 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 (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 therefore or thereupon being authenticated and delivered under the First 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 First 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 First 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 First 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 Services and their respective successors and assigns.

THE FOLLOWING DEFINITION HAS BECOME EFFECTIVE WITH RESPECT TO FIRST RESOLUTION BONDS ISSUED OR REOFFERED AFTER OCTOBER 21, 2015, BUT ONLY TO THE EXTENT MONEYS ARE SEPARATELY SEGREGATED OR ALLOCATED TO THE FIRST RESOLUTION BONDS ISSUED OR REOFFERED AFTER OCTOBER 21, 2015. THE FOLLOWING DEFINITION WILL BECOME EFFECTIVE WITH RESPECT TO ALL OTHER FIRST RESOLUTION BONDS AT SUCH TIME AS THE APPROVAL OF TWO-THIRDS IN PRINCIPAL AMOUNT OF THE HOLDERS OF ALL OUTSTANDING FIRST RESOLUTION BONDS HAS BEEN OBTAINED, AT WHICH TIME THE DEFINITION OF RATING AGENCIES WILL BE AMENDED TO READ AS FOLLOWS FOR ALL OUTSTANDING FIRST RESOLUTION BONDS.

> ***Rating Agencies*** shall mean a nationally recognized statistical rating organization ("NRSRO") registered with the Securities and Exchange Commission.

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 First 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 First 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 First Resolution.

Reimbursement Obligation: The obligation of the Authority described in the First 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 FGR Subordinated Indebtedness Fund but only to the extent such payments are required to be made from Revenues pursuant to the First 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.

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 First 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.

Definition of Certain Terms Used in the Second Resolution

"Account" shall mean one of the special accounts created and established pursuant to Article V of the Second Resolution.

"Adjusted Aggregate Debt Service" for any Fiscal Year, as of any date of calculation, unless used in relation to First Resolution Bonds, shall mean the sum of the Adjusted Debt Service payable during such Fiscal Year for all Outstanding Bonds of a Series, Parity Bond Anticipation Notes and Parity Reimbursement Obligations, and, when used in relation to First Resolution Bonds, shall have the meaning ascribed thereto in the First Resolution.

"Adjusted Debt Service" for any Fiscal Year, as of any date of calculation, unless used in relation to First Resolution Bonds, shall mean the sum of (a) the Debt Service for such Fiscal Year with respect to the Bonds of a 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 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, (b) the Debt Service for such Fiscal Year with respect to Outstanding Parity Bond Anticipation Notes and (c) the Debt Service for such Fiscal Year with respect to Parity Reimbursement Obligations; and, when used in relation to First Resolution Bonds, shall have the meaning ascribed thereto in the First Resolution. 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 on all Bonds of such Series (using the actuarial method of calculation).

"Aggregate Debt Service" for any Fiscal Year, as of any date of calculation, unless used in relation to First Resolution Bonds, shall mean the sum of (a) the Debt Service for all Bonds Outstanding during such Fiscal Year, (b) the interest payable during such Fiscal Year on all Parity Bond Anticipation Notes Outstanding during such Fiscal Year and (c) the Debt Service payable during such Fiscal Year on all Parity Reimbursement Obligations Outstanding during such Fiscal Year; and, when used in relation to First Resolution Bonds, shall have the meaning ascribed thereto in the First Resolution.

"Arbitrage Rebate Fund" shall mean the fund by that name established pursuant to the Second Resolution.

"Authority Budget" shall mean the annual budget of the Authority, as amended or supplemented, adopted or in effect for a particular Fiscal Year, as provided in the Second Resolution.

"Authority Expense Fund" shall mean the fund by that name established pursuant to the Second Resolution.

"Authorized Representative" shall mean (i) 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 (i) in the case of the City, the Mayor, unless a different City official is designated in the Second Resolution or in a Supplemental Resolution to perform the act or sign the document in question.

"Board" shall mean the New York City Water Board, a body corporate and politic constituting a corporate municipal instrumentality of the State created and existing under and by virtue of the Act.

"Bond" or **"Bonds"** shall mean any of the bonds authenticated and delivered pursuant to the Second Resolution.

"Bond Anticipation Note" shall mean any note authorized to be issued under a resolution adopted pursuant to the Second Resolution.

"Bond Counsel's Opinion" or **"Opinion of Bond Counsel"** shall mean an opinion signed by Nixon Peabody LLP or by any other 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" shall mean each date on which interest or both a Principal Installment and interest shall be due and payable on any of the Outstanding Bonds, Parity Bond Anticipation Notes or Parity Reimbursement Obligations according to their respective terms.

"Bondholder", "Owner" or **"Holder"** or words of similar import shall mean, when used with reference to a Bond, the person in whose name the Bond is registered.

"Capitalized Interest" shall mean (i) for any particular Series, that portion of the proceeds of the Bonds of such Series, if any, required by the Supplemental Resolution authorizing such Series to be deposited in a sub-account established for such Series in the Capitalized Interest Account of the Debt Service Fund, for the purpose of funding the payment of a portion of the interest on the Bonds of such Series and (ii) for any Parity Bond Anticipation Notes, that portion of the proceeds of such Parity Bond Anticipation Notes, if any, required by the resolution authorizing such Bond Anticipation Notes to be deposited in a sub-account established for such Parity Bond Anticipation Notes in the Capitalized Interest Account of the Debt Service Fund, for the purpose of funding the payment of interest on such Bond Anticipation Notes.

"Capitalized Interest Account" shall mean the account by that name established in the Debt Service Fund pursuant to the Second Resolution.

"Cash Flow Requirement" shall mean, for each Fiscal Year and as of any date of certification, the amount, certified by the Authority to the Trustee and the Board as provided in the Agreement, equal to the difference between (a) the sum of (i) the estimated Aggregate Debt Service for such Fiscal Year on First Resolution Bonds, (ii) the Projected Debt Service for such Fiscal Year on First Resolution Bonds, (iii) the SGR Cash Flow Requirement for such Fiscal Year, (iv) the estimated Authority Expenses for such Fiscal Year and (v) the other Required Deposits estimated for such Fiscal Year and (b) (i) if such certification is made prior to the commencement of such Fiscal Year, the amount anticipated by the Authority as of such date of certification to be held as of the first day of such Fiscal Year, in the FGR Revenue Fund and (ii) if such certification is made after the commencement of such Fiscal Year, the amount described in subclause (i) of this clause (b).

"City" shall mean The City of New York.

"Code" shall mean the Internal Revenue Code of 1986, as amended, or any successor thereto, as the same may be in effect from time to time.

"Common Account" shall mean the account by that name established in the Debt Service Reserve Fund pursuant to the Second Resolution.

"Construction Account" shall mean the account by that name established in the FGR Subordinated Indebtedness Fund pursuant to the Second Resolution.

"Construction Fund" shall mean the fund by that name established pursuant to the Second Resolution.

"Consulting Engineer" shall mean AECOM USA, Inc. or such other independent engineer or firm of engineers of recognized standing selected by the Authority and satisfactory to the Board and may include an independent engineer or firm of engineers retained by the City in one or more other capacities.

"Costs" or **"Costs of a Water Project"** shall mean the cost of "construction", as such term is defined in the Act including, without limiting the generality of the foregoing, the erection, building, alteration, improvement, increase, enlargement, extension, reconstruction, renovation 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, surveys, designs, plans, working drawings, 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, apparatus and equipment, financing charges, interest prior to, during and after construction to the extent 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 Second Resolution to be paid into any reserve or other special fund from the proceeds of Bonds and the financing of the placing of any Water Project in operation, including reimbursement to any municipality, any state agency, the State, the United States of America, or any other person for expenditures that would be costs of such Water Project under the Second Resolution and all claims arising from any of the foregoing.

"Costs of Issuance" shall mean all items of expense directly or indirectly payable or reimbursable and related to the authorization, sale and issuance of Bonds, including but not limited to printing costs, costs of preparation and reproduction of documents, filing and recording fees, initial fees and charges of any Fiduciary, legal fees and charges, fees and disbursements of consultants and professionals, costs of credit ratings, fees and charges for preparation, execution, transportation and safekeeping of Bonds, costs and expenses of refunding, premiums for the insurance of the payment of the Bonds and any other cost, charge or fee in connection with the original issuance of Bonds.

"Counterparty" shall mean an entity (i) whose senior long term debt obligations are rated (at the time the subject Interest Rate Exchange Agreement is entered into) in either of the two highest rating categories from a recognized statistical rating organization or (ii) whose obligations under an Interest Rate Exchange Agreement are guaranteed by a financial institution whose senior long term debt obligations are rated (at the time the subject Interest Rate Exchange Agreement is entered into) in either of the two highest rating categories from a nationally recognized statistical rating organization or (iii) whose obligation, if any, to make payment to the Authority upon termination of the Interest Rate Exchange Agreement is fully collateralized by Investment Securities of the type described in clause (ii) of the definition of Investment Securities, provided however, that such obligation shall be deemed to be fully collateralized if the Investment Securities shall have a market value, determined periodically in accordance with the Interest Rate Exchange Agreement, that is not less than the termination payment by any amount not greater than .1% of the Revenues for the preceding Fiscal Year.

"Credit Facility" shall mean a letter of credit, revolving credit agreement, standby purchase agreement, surety bond, insurance policy or similar obligations, arrangement or instrument issued by a bank, insurance company or other financial institution which (i) provides for payment of all or a portion of the Principal Installments or interest due on any Series of Bonds or on Parity Bond Anticipation Notes, (ii) provides funds for the purchase of such Bonds or portions thereof or (iii) secures the payment by the Authority of its obligations under an Interest Rate Exchange Agreement relating to Bonds.

"Debt Service" for any Fiscal Year or part thereof shall mean, as of any date of calculation (i) with respect to the Outstanding Bonds of any Series, an amount equal to the sum of (a) interest payable during such Fiscal Year or part thereof on such Bonds, except to the extent that such interest is to be paid from amounts representing Capitalized Interest and (b) the Principal Installments of such Bonds payable during such Fiscal Year or part thereof; (ii) with respect to Outstanding Parity Bond Anticipation Notes, interest payable thereon during such Fiscal Year or part thereof, except to the extent that such interest is to be paid from amounts representing Capitalized Interest; and (iii) with respect to a Parity Reimbursement Obligation, an amount equal to the sum of (a) interest payable during such Fiscal Year or part thereof on such Parity Reimbursement Obligation and (b) the Principal Installments of such

Parity Reimbursement Obligation payable during such Fiscal Year or part thereof. Such interest and Principal Installment shall be calculated on the assumption that (x) no such Bonds, Parity Bond Anticipation Notes or Parity Reimbursement Obligations 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 greatest 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 average rate or rates borne during such Fiscal Year on Variable Rate Bonds Outstanding during the twelve calendar months preceding the date of calculation; provided, however, that if the Authority has in connection with any Variable Rate Bonds entered into an Interest Rate Exchange Agreement which provides that the Authority is to pay to the Counterparty an amount determined based upon a fixed rate of interest on the Outstanding principal amount of such Variable Rate Bonds or that the Counterparty is to pay to the Authority an amount determined based upon the amount by which the rate at which such Variable Rate Bonds bear interest exceeds a stated rate of interest on all or any portion of such Variable Rate Bonds, it will be assumed that such Variable Rate Bond bears interest at the fixed rate of interest to be paid by the Authority or the rate in excess of which the Counterparty is to make payment to the Authority in accordance with such agreement.

"Debt Service Fund" shall mean the fund by that name established pursuant to the Second Resolution.

"Debt Service Reserve Fund" shall mean the fund by that name established pursuant to the Second Resolution.

"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 on Bonds in the current or any future Fiscal Year on all Bonds Outstanding; *provided, however*, that if, upon the issuance of a Series of Bonds, such amount would require moneys, in an amount in excess of the maximum amount permitted under the Code to be deposited therein from the proceeds of such Bonds, to be deposited therein, the Debt Service Reserve Requirement shall mean an amount equal to the sum of the Debt Service Reserve Requirement immediately preceding issuance of such Bonds and the maximum amount permitted under the Code to be deposited therein from the proceeds of such Bonds, as certified by an Authorized Representative of the Authority; *provided, further*, 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: *provided, further*, that if, as a result of the expiration or termination of a Financial Guaranty, a deficiency shall be created in the Debt Service Reserve Fund, the Debt Service Reserve Requirement shall be calculated so as to exclude the amount of such deficiency and the Debt Service Reserve Requirement shall be increased in each of the five Fiscal Years after the date such deficiency was created by an amount equal twenty per centum (20%) of the aforesaid deficiency.

For the purpose of calculating the Debt Service Reserve Requirement for any Variable Rate Bonds of a Series, the maximum Adjusted Debt Service on such Series shall be determined by reference to the Pro Forma Bond Issue for the Variable Rate Bonds of such Series set forth in the Supplemental Resolution authorizing such Series.

"Defeasance Obligations" (A) any non-callable bonds or other obligations which as to principal and interest constitute direct obligations of, or are guaranteed by the United States of America, including obligations of any agency thereof or corporation which has been or may hereafter be created pursuant to an Act of Congress as an agency or instrumentality of the United States of America to the extent unconditionally guaranteed by the United States of America or (B) any other non-callable receipt, certificate or other evidence of an ownership interest in obligations or in specified portions thereof (which may consist of specified portions of the interest thereon) of the character described in subclause (A); (C) a non-callable obligation of the United States of America which has been stripped by the United States Department of 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 Second 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) or (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.

THE DEFINITION OF "DEFEASANCE OBLIGATIONS" SET FORTH ON PAGE C-4 HAS BECOME EFFECTIVE WITH RESPECT TO SECOND RESOLUTION BONDS ISSUED OR REOFFERED AFTER OCTOBER 21, 2015, INCLUDING THE FISCAL 2019 BB BONDS, BUT ONLY TO THE EXTENT MONEYS ARE SEPARATELY SEGREGATED OR ALLOCATED TO THE SECOND RESOLUTION BONDS ISSUED OR REOFFERED AFTER OCTOBER 21, 2015. THE DEFINITION OF "DEFEASANCE OBLIGATIONS" SET FORTH ON PAGE C-4 WILL BECOME EFFECTIVE WITH RESPECT TO ALL OTHER SECOND RESOLUTION BONDS AT SUCH TIME AS THE APPROVAL OF A MAJORITY IN PRINCIPAL AMOUNT OF THE HOLDERS OF ALL OUTSTANDING SECOND RESOLUTION BONDS HAS BEEN OBTAINED, AT WHICH TIME THE DEFINITION OF "DEFEASANCE OBLIGATIONS" SET FORTH ON PAGE C-4 WILL BE AMENDED TO READ AS SET FORTH ON PAGE C-4 FOR ALL OUTSTANDING SECOND RESOLUTION BONDS.

"Depositary" shall mean any bank or trust company selected by the Board or the Authority, as the case may be, as a depositary of moneys to be held under the provisions of the Agreement or the Second Resolution, and may include the Trustee.

"Event of Default" shall mean any event specified as an event of default in the Second Resolution.

"FGR Authority Expense Fund" shall mean the Authority Expense Fund established pursuant to the First Resolution.

"FGR Construction Fund" shall mean the Construction Fund established pursuant to the First Resolution.

"FGR Debt Service Reserve Fund" shall mean the Debt Service Reserve Fund established pursuant to the First Resolution.

"FGR Debt Service Fund" shall mean the Debt Service Fund established pursuant to the First Resolution.

"FGR Revenue Fund" shall mean the Revenue Fund established pursuant to the First Resolution.

"FGR Subordinated Indebtedness Fund" shall mean the Subordinated Indebtedness Fund established pursuant to the First Resolution.

"Fiduciary" shall mean the Trustee or any Paying Agent or Depositary.

"Financial Guaranty" shall mean a surety bond, insurance policy or letter of credit which constitutes any part of the Debt Service Reserve Requirement and which is authorized to be delivered to the Trustee pursuant to the Second Resolution.

"Financial Guaranty Provider" shall mean the issuer of any Financial Guaranty.

"First Resolution" shall mean the Water and Sewer System General Revenue Bond Resolution adopted by the Authority on November 14, 1985 as amended and supplemented in accordance therewith and as the same may be amended or supplemented in accordance therewith and the Second Resolution.

"First Resolution Bond" shall mean a bond, note or other evidence of indebtedness issued pursuant to the First Resolution, including a "Parity Bond Anticipation Note" and a "Parity Reimbursement Obligation," as such terms are defined in the First Resolution.

"Fiscal Year" shall have the meaning ascribed to such term in the Agreement.

"Fund" shall mean any fund established pursuant to the Second Resolution.

"Interest Rate Exchange Agreement" means an agreement entered into by the Authority relating to Bonds or First Resolution Bonds which provides that during the term of such agreement the Authority is to pay to the Counterparty an amount based on the interest accruing at a fixed or variable rate per annum on an amount equal to all or a portion of the principal amount of such Bonds or First Resolution Bonds and that the Counterparty is to pay to the Authority either (i) an amount based on the interest accruing on such principal amount at a fixed or variable rate per annum, in each case computed according to a formula set forth in such agreement, or that one shall pay to the other any net amount due under such agreement or (ii) an amount based on the amount by which the rate at which such Bonds or First General Resolution Bonds bear interest exceeds a rate stated in such agreement.

"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 clause (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 (a) a specific written repurchase agreement governs the transaction, (b) 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 either a Federal Reserve Bank or 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, (c) 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, (d) 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 (e) 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 prior 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 or 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.

Obligations of the Trustee or an affiliate thereof may be Investment Securities, provided that they otherwise qualify.

THE DEFINITION OF "INVESTMENT SECURITIES" SET FORTH ON PAGES C-7 AND C-8 HAS BECOME EFFECTIVE WITH RESPECT TO SECOND RESOLUTION BONDS ISSUED OR REOFFERED AFTER OCTOBER 21, 2015, INCLUDING THE FISCAL 2019 BB BONDS, BUT ONLY TO THE EXTENT MONEYS ARE SEPARATELY SEGREGATED OR ALLOCATED TO THE SECOND RESOLUTION BONDS ISSUED OR REOFFERED AFTER OCTOBER 21, 2015. THE DEFINITION OF "INVESTMENT SECURITIES" SET FORTH ON PAGES C-7 AND C-8 WILL BECOME EFFECTIVE WITH RESPECT TO ALL OTHER SECOND RESOLUTION BONDS AT SUCH TIME AS THE APPROVAL OF A MAJORITY IN PRINCIPAL AMOUNT OF THE HOLDERS OF ALL OUTSTANDING SECOND RESOLUTION BONDS HAS BEEN OBTAINED, AT WHICH TIME THE DEFINITION OF "INVESTMENT SECURITIES" SET FORTH ON PAGES C-7 AND C-8 WILL BE AMENDED TO READ AS SET FORTH ON PAGES C-7 AND C-8 FOR ALL OUTSTANDING SECOND RESOLUTION BONDS.

"Local Water Fund" shall mean the special fund by that name established by the Act in the custody of the Board.

"Mayor" shall mean the Mayor of the City or such other person duly appointed and authorized to act on behalf of the Mayor.

"Monthly Balance" shall mean the amount, calculated as of the first day of each month, equal to the sum of:

(i) For the Bonds of a Series and Parity Reimbursement Obligations which are Outstanding during the Fiscal Year in which such month falls, 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 or prior to the later of the next Succeeding Bond Payment Date for such Bonds and the 15th day of the next succeeding month and (2) the amount, if any, held in the sub-account for such Bonds in the Capitalized Interest Account 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 Bonds (or, with respect to the first Bond Payment Date for such Bonds, the number of full months since the last day of the month preceding the date of issuance of such Bonds) and the denominator of which is the number of months between Bond Payment Dates for such Bonds minus one (or, with respect to the first Bond Payment Date therefor, the number of months between the last day of the month preceding the date of issuance of such Bonds and the first Bond Payment Date therefor 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 equal one; plus

(ii) For the Bonds of a Series and Parity Reimbursement Obligations which are Outstanding during the Fiscal Year in which such month falls, an amount equal to the Principal Installment due on the next Succeeding Bond Payment Date, which falls within twelve months or less, on which a Principal Installment on such Bonds 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 on such Bonds 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 on such Bonds 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; plus

(iii) For Parity Bond Anticipation Notes which are outstanding during the Fiscal Year in which such month falls, an amount equal to the product obtained by multiplying (a) the difference between (1) the amount of interest due or projected to be due during such Fiscal Year on such Parity Bond Anticipation Notes and (2) the amount, if any, held in the sub-account for such Parity Bond Anticipation Notes in the Capitalized Interest Account, by (b) a fraction, the numerator of which is the number of full months since the end of the month preceding the last interest payment date for such Parity Bond Anticipation Notes (or, with respect to the first interest payment date for such Parity Bond Anticipation Notes, the number of full months since the last day of the month preceding the date of issuance of such Parity Bond Anticipation Notes) and the denominator of which is the number of months between interest payment dates for such Parity Bond Anticipation Notes minus one (or, with respect to the first interest payment date for such Parity Bond Anticipation Notes, the number of months between the last day of the month preceding the date of issuance of such Parity Bond Anticipation Notes and the first interest payment date therefor 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 equal one.

"Operating Expenses" shall have the meaning ascribed thereto in the Agreement.

"Option Bonds" shall mean Bonds which by their terms may be tendered by and at the option of the owner whereof for purchase or payment by the Authority prior to the stated maturity thereof, or the maturities of which may be extended by and at the option of the owner thereof.

"Other Moneys" shall mean moneys which do not constitute Revenues and which are derived from payments to be made to or upon the order of the Authority (i) by a Counterparty pursuant to an Interest Rate Exchange Agreement relating to First Resolution Bonds, (ii) by the New York State Environmental Facilities Corporation pursuant to any agreement by and between the Authority and such corporation heretofore or hereafter entered into in connection with the issuance of Bonds or First Resolution Bonds, including the Loan Agreement, dated as of May 1, 1990, by and between the New York State Environmental Facilities Corporation and the Authority, as amended, the Loan Agreement, dated as of January 1, 1991, by and between the New York State Environmental Facilities Corporation and the Authority, as amended and the Loan Agreement, dated as of December 1, 1991, by and between the New York State Environmental Facilities Corporation and the Authority, as amended, (iii) as Subsidy Payments and (iv) of any other moneys and securities pledged by the Authority to the payment of the Bonds pursuant to Article V of the Second Resolution and a Supplemental Resolution.

"Outstanding" when used with reference to First Resolution Bonds or Parity Bond Anticipation Notes, shall have the meaning given to such term in the First Resolution or the resolution pursuant to which such Parity Bond Anticipation Notes were issued, respectively; when used with reference to Parity Reimbursement Obligations, shall have the meaning given to such term in the agreement creating such Parity Reimbursement Obligations; and, when used with reference to Bonds, shall mean, 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 Second 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, or the applicable Supplemental 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 Second Resolution.

"Parity Bond Anticipation Note" shall mean a Bond Anticipation Note the interest on which is payable from and secured by a pledge of, and lien on, Revenues, Other Moneys and amounts on deposit in the FGR Subordinated Indebtedness Fund on a parity with the lien created by Section 501 of the Second Resolution.

"Parity Reimbursement Obligation" shall mean a Reimbursement Obligation, the payment of which is secured by a pledge of, and a lien on, Revenues, Other Moneys and amounts on deposit in the FGR Subordinated Indebtedness Fund on a parity with the lien created by Section 501 of the Second Resolution.

"Principal Installment" shall mean, as of any date of calculation and with respect to any Series, so long 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 to the Authority 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 mount is secured by a Credit Facility which is not in default and (z) the principal amount of any Parity Reimbursement Obligation) of such Series due (or so tendered for purchase or 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.

"Projected Debt Service" for any Fiscal Year or part thereof shall mean, unless used in relation to First Resolution Bonds, an amount with respect to a Projected Series, 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 or part thereof on such Projected Series, and, when used in relation to First Resolution Bonds, shall have the meaning ascribed thereto in the First Resolution.

"Projected Series of Bonds" or **"Projected Series"** shall mean any Series of Bonds or Parity Bond Anticipation Notes described in an Authority Budget as anticipated to be issued in the Fiscal Year to which such Authority Budget relates.

"Rating Agency" shall mean each of Moody's Investors Service and Standard & Poor's Ratings Services and its respective successors and assigns.

THE DEFINITION OF "RATING AGENCIES" SET FORTH ON PAGE C-10 HAS BECOME EFFECTIVE WITH RESPECT TO SECOND RESOLUTION BONDS ISSUED OR REOFFERED AFTER OCTOBER 21, 2015, INCLUDING THE FISCAL 2019 BB BONDS, BUT ONLY TO THE EXTENT MONEYS ARE SEPARATELY SEGREGATED OR ALLOCATED TO THE SECOND RESOLUTION BONDS ISSUED OR REOFFERED AFTER OCTOBER 21, 2015. THE DEFINITION OF "RATING AGENCIES" SET FORTH ON PAGE C-10 WILL BECOME EFFECTIVE WITH RESPECT TO ALL OTHER SECOND RESOLUTION BONDS AT SUCH TIME AS THE APPROVAL OF A MAJORITY IN PRINCIPAL AMOUNT OF THE HOLDERS OF ALL OUTSTANDING SECOND RESOLUTION BONDS HAS BEEN OBTAINED, AT WHICH TIME THE DEFINITION OF "RATING AGENCIES" SET FORTH ON PAGE C-10 WILL BE AMENDED TO READ AS SET FORTH ON PAGE C-10 FOR ALL OUTSTANDING SECOND RESOLUTION BONDS.

"Redemption Price" shall mean, 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 Second Resolution.

"Refunding Bond" shall mean any Bond authenticated and delivered on original issuance pursuant to the Second Resolution for the purpose of refunding any Outstanding Bonds, or thereafter authenticated and delivered pursuant to the Second Resolution in lieu of or substitution for such Bond.

"Reimbursement Obligation" shall mean the obligation of the Authority described in the Second Resolution (i) to reimburse directly the issuer of a Credit Facility for amounts paid by such issuer thereunder or (ii) make payment to a Counterparty of amounts payable thereto by the Authority pursuant to an Interest Rate Exchange Agreement relating to Bonds, in either case.

"Required Deposits" shall mean, for any Fiscal Year during which First Resolution Bonds are Outstanding, the amount, if any, payable into the FGR Authority Expense Fund, the FGR Debt Service Reserve Fund and the FGR Subordinated Indebtedness Fund, and for any Fiscal Year during which no First Resolution Bonds are Outstanding, the amount, if any, payable into the Authority Expense Fund, the Debt Service Reserve Fund and the Subordinated Indebtedness Fund, but in each case only to the extent such payments are required to be made from Revenues.

"Revenue Fund" shall mean the fund by that name established pursuant to the Second Resolution.

"Revenues" shall have the meaning given to it in the Agreement as the same may be amended from time to time in accordance therewith and the Second Resolution.

"Second Resolution" shall mean the Water and Sewer System Second General Revenue Bond Resolution, adopted by the Authority on March 30, 1994, as the same may be amended or supplemented by a Supplemental Resolution.

"Series" or **"Series of Bonds"** shall mean all of the Bonds authenticated and delivered on original issuance identified pursuant to the Supplemental Resolution authorizing such Bonds as a separate Series of Bonds and any Bonds thereafter authenticated and delivered in lieu of or in substitution therefor pursuant to the Second Resolution regardless of variations in maturity, interest rate or other provisions.

"SGR Cash Flow Requirement" shall mean, for each Fiscal Year and as of any date of certification, the amount of Revenues, certified by the Authority to the Trustee and the Board as provided in the Agreement and the Second Resolution, to be required to be deposited into the Subordinated Indebtedness Fund in such Fiscal Year, which amount shall be equal to the difference between (a) the sum of (i) the Aggregate Debt Service for such Fiscal Year, (ii) the Projected Debt Service for such Fiscal Year, (iii) the amount of Parity Reimbursement Obligations payable in such Fiscal Year, (iv) the amount, if any, required to restore the Debt Service Reserve Fund to the Debt Service Reserve Requirement and (v) the amount, if any, withdrawn from the Construction Account pursuant to the First Resolution during such or any prior Fiscal Year and (b) the sum of (i) if such certification is made prior to the commencement of such Fiscal Year, the amount anticipated by the Authority as of such date of certification to be held, as of the first day of such Fiscal Year, in the Revenue Fund or (ii) if such certification is made after the commencement of such Fiscal Year, the amount held, as of the first day of such Fiscal Year, in the Revenue Fund and (iii) the amount of Other Moneys paid or projected to be paid to the Authority during such Fiscal Year.

"Sinking Fund Installment" shall mean, as of any particular date of calculation, the amount required, as of such date of calculation, to be paid by the Authority on a future date for the retirement of Outstanding Bonds which are stated to mature subsequent to such future date, but does not include any amount payable by the Authority by reason only of the maturity of a Bond.

"SGR Subordinated Indebtedness" shall mean any bond, note or other evidence of indebtedness issued by the Authority in furtherance of its corporate purposes under the Act and secured by a pledge of moneys in the SGR Subordinated Indebtedness Fund or Other Moneys, or both, which is subordinate to the pledge thereof made under the Second Resolution.

"SGR Subordinated Indebtedness Fund" shall mean the Subordinated Indebtedness Fund established pursuant to the Second Resolution.

"Special Account" shall mean one or more of the Special Accounts established in the Debt Service Reserve Fund by a Supplemental Resolution pursuant to the Second Resolution.

"Special Credit Facility" shall mean, 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 A (i) requires the Authority to reimburse the issuer of such Credit Facility directly for amounts paid thereunder and (ii) provides that such obligation is a Parity Reimbursement Obligation.

"State" shall mean the State of New York.

"Subsidy Payments" shall mean amounts payable to the Authority by the United States of America or by the State or by any agency or instrumentality of either in connection with Bonds of the Authority which amounts do not constitute Other Moneys described in the paragraph (ii) of the definition of Other Moneys.

"Supplemental Resolution" shall mean a resolution of the Authority authorizing the issuance of a Series Bonds or otherwise amending or supplementing the Second Resolution, adopted in accordance with Article VIII of the Second Resolution.

"Surplus Fund" shall mean the fund by that name established pursuant to the Second Resolution.

"System" shall mean the "Water System" and the "Sewer System" as such quoted terms are defined in Sections 1045-b(l4) and (21) of the Act.

"Tender Option Price" shall mean, with respect to any Option Bond tendered for purchase or payment in accordance with the Supplemental Resolution authorizing such Option Bond, an amount equal to the principal amount of such Option Bond plus the interest accrued and unpaid thereon to the date of such tender.

"Trustee" shall mean U.S. Bank, National Association, and its successor or successors and any other person which may at any time be substituted in its place pursuant to the Second Resolution.

"Variable Rate Bond" shall mean, 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" shall have the meaning ascribed thereto in Section 1045-b(20) of the Act, including any sewerage facility, water facility or water and sewerage facility as described therein and constituting a part of the System.

Summary of Certain Documents

The following are brief summaries of certain provisions of the Agreement, the Lease, the First Resolution and the Second 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 First 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, First 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 First 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 First Resolution.

The Authority shall authorize payment of such Costs in the manner set forth in the First 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 First 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

Depositary: 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 FGR 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 1/12th 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 FGR Subordinated Indebtedness) payable within the then current Fiscal Year, together with all other amounts necessary to make the required deposits to the reserve and other funds and amounts established for such bonds, notes or other obligations; *second*, to the City until the amounts so paid are equal to the rental payment for such Fiscal Year and the unsatisfied balance, if any, of the rental payment for any prior Fiscal Year; and, *third*, to the Operation and Maintenance Reserve Fund, until the amount therein on deposit is equal to the O&M Reserve Requirement for such Fiscal Year. Any amounts remaining in the Local Water Fund on the last day of each Fiscal Year shall be paid to the General Account in the Operation and Maintenance Reserve Fund. *(Section 4.2)*

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

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

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

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

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

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

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

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

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

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

Application of Moneys in the Operation and Maintenance Reserve Fund. If on the first day of any month the Board has not paid to the City an amount equal to the product of (i) the amount required to be paid for Operating Expenses pursuant to Section 8.1 of the Lease, multiplied by (ii) a fraction the numerator of which is the number of months which have commenced during such Fiscal Year, and the denominator of which is 12, the Board shall withdraw from the Operation and Maintenance Reserve Fund and pay to the City, on demand, an amount equal to 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 First 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 First 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 First Resolution, any similar document or the Agreement after all Bonds and other evidences of indebtedness have been paid in full or are no longer Outstanding and after payment of all other obligations and expenses of the Authority, or provision for payment thereof has been made, shall be paid to the City.

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

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

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

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

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

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

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

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

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

Annual Budget. On May 1 of each year (or on such later date as the Authority, the Board and the City may agree) the Authority shall deliver to the Board a certified copy of the Authority Budget for the ensuing Fiscal Year showing the Cash Flow Requirement for such Fiscal Year. Based upon the information contained in (a) the Authority Budget, (b) the City's certification pursuant to Section 8.3 of the Lease and (c) the Certificate of the Consulting Engineer delivered to the Board pursuant to Section 8.3 of the Lease (collectively, the "Budget Documents"), the Board shall prepare the Annual Budget for the ensuing Fiscal Year. In addition to the information contained in the Budget Documents the Board shall also make provision in the Annual Budget for Board Expenses for the ensuing Fiscal Year, for the amount, if any, required to be deposited in the Operation and Maintenance Reserve Fund in accordance with Section 4.4 of the Agreement, and for the application of the amounts in the General Account therein. Thereafter, but in no event later than 15 days after the date of publication of the Executive Budget of the City, the Board shall adopt such Annual Budget. Promptly after adoption of the Annual Budget, and in no event later than June 10 (or such other date as the Authority, the Board and the City may agree) of each year, the Board shall establish the rates, fees and charges for the use of the System for the ensuing Fiscal Year. The Board may from time to time, either before or after commencement of the Fiscal Year to which it relates, amend the Annual Budget, but (except for its own expenses) only in accordance with and after receipt of amended Budget Documents. If as of the first day of any Fiscal Year an Annual Budget has not been adopted, the Annual Budget for the immediately preceding Fiscal Year shall be the Annual Budget for such Fiscal Year until a new Annual Budget is adopted. *(Section 6.4)*

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

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

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

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

Liens. Until the Bonds or other evidences of indebtedness issued by the Authority for its purposes under the Act have been paid in full or provision has been made therefor in accordance with the First 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 First Resolution or the respective provisions of the Act pursuant to which the First 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 First 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 First 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 First Resolution) including, without limitation, amendments to Appendix A to the Agreement; provided that the parties shall enter into no such amendment, change or modification which materially adversely affects the rights of the holders of any Bonds by modifying or revoking certain enumerated provisions of the Agreement without first complying with the applicable provisions of the First Resolution. *(Section 10.1)*

Conflicts. The Agreement provides that its provisions shall not change or in any manner alter the terms of the First 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 First Resolution or any Bond, the provisions of the First Resolution or Bond shall be controlling and conflicting provisions of the Agreement shall be disregarded. *(Section 12.1)*

Summary of the Lease

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

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

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

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

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

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

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

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

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

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

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

Payments of Costs by the Board. The Board has agreed to pay to the City amounts sufficient to: (i) pay the cost of administration, maintenance, repair and operation of the Leased Property, including overhead costs incurred by the City attributable to the Leased Property (but less the amount of any governmental operating aid received or receivable within the current Fiscal Year with respect to the System), the cost of materials and supplies, and the amount of any judgment or settlement paid by the City arising out of a tort claim (but only if the costs of such claim are not otherwise reimbursed, the City's liability for such claim is related to Construction of a Water Project or operation or maintenance of the System and the costs of such claims do not exceed for any Fiscal Year 5% of the aggregate revenues shown on the Board's last year-end audited financial statements); (ii) reimburse the City for capital Costs incurred by the City in the Construction of Water Projects (if requested by the City and not otherwise reimbursed) including, without limitation, the payment of any judgment or settlement arising out of a contract claim related to the Construction of any Water Project; (iii) pay the cost of billing and collection services provided by the City; (iv) pay the cost of legal services provided by the City; and (v) reimburse the City for the compensation, or the costs of the services, of any City officers and employees provided on a full-time or part-time basis to the Board. *(Section 8.1)*

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

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

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

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

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

Summary of the First Resolution

Terms used in this Summary of the First 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 First Resolution: (i) all Revenues, (ii) all moneys or securities in any of the Funds and Accounts created under the First 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 First 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 First Resolution; subject only to the provisions of the First 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 First 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 First 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 First 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 First 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 First 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 First 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 First 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 First 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 (1/6th) 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 FGR Subordinated Indebtedness Fund. Any remaining amounts shall be credited to the Revenue Fund. *(Section 507)*

Debt Service Reserve Fund. The First Resolution establishes a Debt Service Reserve Fund and a Common Account therein. In addition, the First 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 FGR 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 First 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)*

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

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

FGR Subordinated Indebtedness. The Authority may issue FGR 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 FGR Subordinated Indebtedness, however, shall be issued only for the purposes set forth in the First Resolution and shall be secured by a pledge subordinate in all respects to the pledge created by the First 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 First Resolution with the Trustee or any Depositary shall be held in trust and applied only in accordance with the provisions of the First Resolution, and each of the Funds established by the First 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 First Resolution. *(Section 512)*

Investment of Certain Funds. Moneys held in the Debt Service Fund, the Debt Service Reserve Fund and the FGR Subordinated Indebtedness Fund (subject to the terms of any resolutions or other instruments securing any issue of FGR 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 First 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, FGR 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 First 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 First 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 First Resolution and any Series of Refunding Bonds issued pursuant to Section 207 of the First 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 First 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 First Resolution and any Series of Refunding Bonds issued pursuant to Section 207, a certificate of the Rate Consultant (i) setting forth the estimated Revenues for each of the five Fiscal Years following the issuance of such Series of Bonds (plus the Fiscal Year in which such Bonds are issued) after giving effect to any increases or decreases in rates, fees and charges projected for such Fiscal Years and (ii) showing for each such Fiscal Year that the estimated Revenues for such Fiscal Year will be at least equal to the sum of (A) 115% of the maximum estimated Adjusted Aggregate Debt Service on all Bonds then Outstanding including the Bonds to be issued, and (B) 100% of the sum of the projected Operating Expenses and Required Deposits, as shown on the Certificate of the Consulting Engineer delivered pursuant to paragraph (d) above and the Certificate of the Authority delivered pursuant to paragraph (e) above, respectively. *(Sections 204 and 206)*

Refunding Bonds. One or more Series of Refunding Bonds may be issued pursuant to Section 207 of the First 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 First Resolution. The Authority may also pledge the Revenues to the payment of the interest on, and subject to Section 707 of the First Resolution, the principal of such notes. A copy of the First 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 First 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 First Resolution provides that the Authority shall not issue any bonds, or other evidences of indebtedness, other than the Bonds, Bond Anticipation Notes, FGR 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 First 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 First 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 First 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 First Resolution or the Agreement. Such Authority Budget may set forth such additional information as the Authority may determine or as the Board or the City may request. If for any reason the Authority shall not have adopted the Authority Budget before such May 1, the Authority Budget for the then current Fiscal Year shall be deemed to be the Authority Budget for the ensuing Fiscal Year until a new Authority Budget is adopted. The Authority may at any time adopt an amended Authority Budget for the then current or ensuing Fiscal Year, but no such amended Authority Budget shall supercede any prior Budget until the Authority shall have filed with the Trustee, the Board and the City a copy of such amended Authority Budget. Each month the Authority shall recalculate the Cash Flow Requirement. *(Sections 712 and 713)*

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

Supplemental Resolutions. The First 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 First 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 First Resolution; to confirm any pledge under the First 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 First 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 First Resolution or to insert such provisions clarifying matters or questions arising under the First Resolution as are necessary or desirable, and are not contrary to or inconsistent with the First 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 First 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 First 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 First 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 First 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 First 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 First 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 First 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 First 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(1), provides 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 First 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. *(Section 1201)*

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(1) Any Supplemental Resolution adopted by the Authority on or after February 28, 2005 provides that the verification report may be prepared by a firm of nationally recognized verification agents rather than a firm of nationally recognized independent certified public accountants.

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 First Resolution. *(Section 1201)*

Defeasance of Option Bonds. Under the First Resolution, Option Bonds shall be deemed paid in accordance with the First 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)*

Summary of the Second Resolution

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

Pledge of Revenues and Funds. The Authority pledges for the payment of the Bonds in accordance with their terms and the provisions of the Second Resolution, subject only to the provisions of the Second Resolution, the First Resolution, the Act and the Agreement permitting the application thereof for or to the purposes and on the terms and conditions of the Second Resolution and therein set forth: (i) all moneys or securities in any of the Funds and Accounts, other than the Arbitrage Rebate Fund, (ii) all Other Moneys, (iii) in moneys or securities on deposit in the FGR Subordinated Indebtedness Fund, 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 Second Resolution, (iv) all other moneys and securities to be received, held or set aside by the Authority or by any Fiduciary pursuant to the Second Resolution and (v) from and after the time that the pledge of Revenues made in the First Resolution shall be discharged and satisfied in accordance with the First Resolution, all Revenues; *provided, however*, that such pledge shall be in all respects subordinate to the provisions of the First Resolution and the lien and pledge created by the First Resolution. This pledge shall, to the fullest extent permitted by law, be valid and binding from the time when it is made and 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 the obligation to perform the contractual provisions contained in the Second Resolution 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.

The Act provides that (i) the pledges made by the Second Resolution are valid, binding and perfected from the time when they are made and property so pledged shall immediately be subject to the lien of such pledges without any physical delivery thereof or further act, (ii) the lien of such pledges shall be valid, binding and perfected as against all parties having claims of any kind in tort, contract or otherwise against the Authority irrespective of whether such parties have notice thereof and (iii) no instrument by which such pledges are created nor any financing statement need be recorded or filed. Accordingly, no financial statements have been or will be filed. Based upon the foregoing, the Authority represents that under the laws of the State (i) the Second Resolution creates valid and binding pledges in favor of the holders from time to time of the Bonds, enforceable in accordance with the terms set forth in the Second Resolution,

(ii) the pledges made by the Second Resolution and each pledge made to secure obligations of the Authority which, by the terms set forth in the Second Resolution, are prior to or of equal rank with such pledge are and shall be prior to any judicial lien hereafter imposed on the property pledged by the Second Resolution to enforce a 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 heretofore 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 Second Resolution that is prior to or of equal rank with the pledge made by the Second Resolution and neither the Revenues nor any other property pledged by the Second Resolution have been described in any financing statement. Except as expressly permitted by the Second Resolution, the Authority shall not hereafter make or suffer to exist any pledge or assignment of, lien on or security interest in the Revenues or other property pledged by the Second Resolution that is prior to or of equal rank with the pledge made by the Second 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 Second Resolution.

As further security for the payment of the principal or Redemption Price of and interest on the Bonds, the Authority 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 rights to indemnification and rights and interests not material to Bondholders), including, without limiting the generality of the foregoing, the present and continuing right (i) to make claim for, collect or cause to be collected, receive or cause to be received, from the Board all Revenues thereunder, (ii) to bring actions and proceedings thereunder for the enforcement thereof, and (iii) to do any and all things which the Authority is or may become entitled to do under the Agreement; *provided, however* that such assignment, transfer and pledge are and shall be in all respects subject and subordinate to the assignment, transfer and pledge made by the First Resolution; *provided, further*, that the assignment made by the Second Resolution 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 special funds provided for such payment pursuant to the Act, the First Resolution and the Second 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 Second 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) Arbitrage Rebate Fund; and

(8) Surplus Fund.

The Second 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 (i) Special Credit Facility to secure the payment of the Principal Installments of and interest on the Bonds authorized thereby, (ii) which provides for a Special Credit Facility to secure the payment of the Tender Option Price of any Option Bonds authorized thereby, or (iii) wherein the Authority has determined that the Series of Bonds authorized thereby will not be secured by the Common Account in the Debt Service Reserve Fund, may establish one or more Special Accounts in the Debt Service Reserve Fund.

The Second Resolution also establishes in the Debt Service Fund a separate account to be known as the "Capitalized Interest Account".

The Trustee shall hold all of the Funds and Accounts.

The Trustee is directed to make withdrawals and transfers from the Funds and Accounts established by the Second Resolution in order to rebate certain arbitrage earnings to the United States. *(Section 502)*

Construction Fund. From and after the date on which no First Resolution Bonds are Outstanding, 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 he deposited therein pursuant to the Second 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. In addition, all moneys on deposit in the Construction Account shall he deposited in the Construction Fund as soon as practicable after the date on which there are no First Resolution Bonds Outstanding. From and after the date on which no First Resolution Bonds are Outstanding and 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, and subject to the provisions of the First Resolution, the Construction Account may only be expended to pay Costs of Water Projects (including Costs of Issuance). The Trustee shall, subject to certain exceptions contained in the First Resolution and the Second Resolution, 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 and Construction Account shall be applied to the payment of principal of and interest on Bonds and of the interest on Parity Bond Anticipation Notes when due. The Authority will cause moneys in the Construction Account to be transferred to the Debt Service Fund at such time and in such amount as may be required for such purpose. *(Section 504)*

Allocation of Revenues — Revenue Fund. The Authority shall cause all Other Moneys and, from and after the date on which no First Resolution Bonds are Outstanding, all Revenues received from the Board pursuant to the Agreement 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 Second Resolution or the Agreement to be so deposited.

In addition to the payments to be made from the FGR Subordinated Indebtedness Fund, as soon as practicable in each month the amount in the FGR Subordinated Indebtedness Fund (other than in the Construction Account) shall be transferred to the Revenue Fund until the amount on deposit therein is equal to the sum of:

(i) together with the amount in the Debt Service Fund, the Monthly Balance for such month and the amount necessary to pay the purchase price or Redemption Price of Bonds purchased or called for redemption; plus

(ii) the amount, if any, necessary to make the total on deposit in the Debt Service Reserve Fund and credited to the Common Account equal to the Debt Service Reserve Requirement for the Bonds to which such Common Account relates, and to make the total on deposit in each Special Account equal to the Debt Service Reserve Requirement for the Bonds to which each such Special Account relates; plus

(iii) the amount, if any, then required to be in the SGR Subordinated Indebtedness Fund. *(Section 505)*

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

(i) to the Debt Service Fund, all such amounts until the total on deposit therein equals the sum of (A) the Monthly Balance for such month for all Series of Bonds Outstanding and (B) the amount necessary to pay the purchase price or Redemption Price of Bonds purchased or called for redemption;

(ii) if no First Resolution Bonds are then Outstanding, from the balance, if any, remaining in such month after making the deposits required by paragraph (i) 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 (i) the Authority Expenses for the then current Fiscal Year as set forth in the Authority Budget, plus (ii) if included in the Authority Budget for the then current Fiscal Year, an amount ("the Reserve for Expenses") equal to one-sixth of such Authority Expenses by (B) a fraction, the numerator of which is twelve (12) minus the number of full months (excluding the month of calculation) remaining in the Fiscal Year and the denominator of which is twelve (12);

(iii) from the balance, if any remaining after making the deposits required by paragraphs (i) and (ii), to the Debt Service Reserve Fund, first, to the credit of the Common Account therein the amount, if any, necessary to make the total on deposit in such Fund and credited to the Common Account equal to the Debt Service Reserve Requirement for the Bonds to which such Common Account relates, or, the entire balance if less than sufficient and, then, from the balance of such deposit, if any, remaining after crediting the Common Account as aforesaid, to the credit of each Special Account an amount equal to the Debt Service Reserve Requirement for the Bonds to which each such Special Account relates; *provided, however*, that 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 each Special Account bears to the sum of the Debt Service Reserve Requirements for all the Bonds related to Special Accounts:

(iv) from the balance, if any, remaining after making the deposits required by paragraphs (i), (ii) and (iii) to the Arbitrage Rebate Fund, the amount, if any, equal to the earnings in investments in the Debt Service Reserve Fund which were transferred to the Revenue Fund in the preceding month; and

(v) from the balance, if any, remaining after making the deposits required by paragraphs (i), (ii), (iii) and (iv) and if no First Resolution Bonds are then Outstanding, to the Subordinated Indebtedness Fund the amount required to be deposited in such Fund for such month in accordance with the Authority Budget to the entire balance if less than sufficient.

Beginning with the first day of each Fiscal Year, the Authority shall cause to be calculated the amounts deposited in the Revenue Fund on a daily basis until it is determined that the total of all amounts deposited therein during such Fiscal Year is at least equal to the SGR Cash Flow Requirement. Thereafter, during such Fiscal Year, no further amounts on deposit in the FGR Subordinated Indebtedness Fund shall be required to be deposited in the Revenue Fund; *provided, however*, if the Authority shall thereafter certify an amended Authority Budget for such Fiscal Year showing an SGR Cash Flow Requirement in excess of the SGR Cash Flow Requirement last certified for such Fiscal Year, calculation of the amounts deposited in the Revenue Fund on a daily basis shall be resumed until it is determined that the total of all amounts deposited therein during such Fiscal Year is at least equal to the SGR Cash Flow Requirement, as amended. Thereafter, during such Fiscal Year, no further amounts on deposit in the FGR Subordinated Indebtedness Fund shall be required to be deposited in the Revenue Fund, unless the Authority thereafter, in such Fiscal Year, again certifies an amended Authority Budget showing an SGR Cash Flow Requirement in excess of the SGR Cash Flow Requirement theretofore certified in such Fiscal Year. *(Section 506)*

Debt Service Fund. The Trustee shall for the Outstanding Bonds of a Series, Parity Bond Anticipation Notes and Parity Reimbursement Obligations, pay (i) on each Bond Payment Date,

(1) from the moneys on deposit in the Debt Service Fund the amounts required for the payment of the Principal Installments, if any, due on such Bond Payment Date and (2) from the moneys on deposit in the Debt Service Fund, including the moneys credited to the subaccount, if any, established for such Series in the Capitalized Interest Account in such Fund, the interest due on such Bond Payment Date, (ii) on any 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 and (iii) on each Bond Payment Date for Parity Bond Anticipation Notes, the interest due thereon on such Bond Payment Date, including from moneys credited to the sub-account, if any, established for such Parity Bond Anticipation Notes in the Capitalized Interest.

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 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.

In the event of the refunding of any Bonds, the Trustee shall, upon the written direction of the Authority, withdraw from the Debt Service Fund and the Capitalized Interest Account related to the Bonds to be refunded all or any portion of amounts accumulated therein with respect to the Bonds to be refunded and deposit such amounts as provided in such written direction; *provided, however*, that such withdrawal shall not be made unless (i) immediately thereafter the Bonds being refunded shall be deemed to have been paid, and (ii) after giving effect to any amounts being simultaneously deposited therein the amount remaining in the Debt Service Fund after such withdrawal shall not be less than the Monthly Balance at the date of such withdrawal with respect to Bonds then Outstanding, after the Bonds to be refunded have been deemed paid. *(Section 507)*

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 508)*

Debt Service Reserve Fund. The Second Resolution establishes a Debt Service Reserve Fund and a Common Account therein. In addition, the Second Resolution provides that any Supplemental Resolution which provides (i) for a Special Credit Facility to secure the payment of the Principal Installments of and interest on the Bonds authorized thereby, (ii) which provides for a Special Credit Facility to secure the payment of the Tender Option Price of any option Bonds authorized thereby, or (iii) wherein the Authority has determined that the Series of Bonds authorized thereby will not be secured by the Common Account in the Debt Service Reserve Fund, 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 of and interest on, or Tender Option Price of or interest on, Bonds for which such payments are secured by a Special Credit Facility, or to pay Principal Installments of and interest on Bonds that the Authority has determined will not be secured by amounts in the Common Account; these Bonds will be secured by amounts, if any, on deposit in the 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 pursuant to the Second Resolution 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 then from draws and demands on Financial Guaranties; *provided, however*, that if more than one Financial Guaranty is held in an Account at the time moneys are to be withdrawn therefrom the Trustee shall obtain payment under each such Financial Guaranty pro rata based upon the respective amounts then available to be paid thereunder.

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, and (ii) the Reserve Fund, the amount of any excess then remaining in the Debt Service Reserve Fund over the applicable Debt Service Reserve Fund Requirement. If, as of February 1 of each year the amount in any Account in the Debt Service Reserve Fund is less than the applicable Debt Service Reserve Requirement and, to the extent that such deficiency has not been made up by May 1 of such year by either (i) deposits pursuant to Sections 506, 511 or 512 of the Second Resolution or (ii) an increase in the market value of the securities therein or (iii) a combination of (i) and (ii), the Authority shall, in its Authority Budget for the ensuing Fiscal Year, include the amount necessary to make up such deficiency as a Required Deposit.

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 or in substitution for moneys or Investment Securities otherwise required to be deposited in the Common Account of the Debt Service Reserve Fund, the Authority may deposit or cause to be deposited with the Trustee a Financial Guaranty for the benefit of the Holders of the Bonds for all or any part of the Debt Service Reserve Requirement; *provided, however*, (i) that any such surety bond or insurance policy shall be issued by an insurance company or association duly authorized to do business in the State and either (A) the claims paying ability of which is rated the highest rating accorded by a nationally recognized rating agency, or (B) obligations insured by a surety bond or an insurance policy issued by such company or association and rated at the time such surety bond or insurance policy is delivered, without regard to qualification of such rating by symbols such as "+" or "-" or numerical notation, in the highest rating category by each Rating Agency or, if Outstanding Bonds are not rated by both Rating Agencies, by whichever Rating Agency that then rates Outstanding Bonds and (ii) that any such letter of credit shall be issued by a bank, a trust company, a national banking association, a corporation subject to registration with the Board of Governors of the Federal Reserve System under the Bank Holding Company Act of 1956 or any success or provision of law, a federal branch pursuant to the International Banking Act of 1978 or any successor provision of law or a domestic branch or agency of a foreign bank which branch or agency is duly licensed or authorized to do business under the laws of any state or territory of the United States of America, the unsecured or uncollateralized long term debt obligations of which, or long term obligations secured or supported by a letter of credit issued by such person, are rated at the time such letter of credit is delivered, without regard to qualification of such rating by symbols such as "+", or "-" or numerical notation, in at least the second highest rating category by each Rating Agency or, if Outstanding Bonds are not rated by both Rating Agencies, by whichever Rating Agency that then rates Outstanding Bonds.

In addition to the conditions and requirements set forth above, no Financial Guaranty shall be deposited in full or partial satisfaction of the Debt Service Reserve Requirement unless the Trustee shall have received prior to such deposit (i) an opinion of counsel to the effect that such Financial Guaranty has been duly authorized, executed and delivered by the Financial Guaranty Provider thereof and is valid, binding and enforceable in accordance with its terms, (ii) in the event such Financial Guaranty Provider is not a domestic entity, an opinion of foreign counsel in form and substance satisfactory to the Trustee and (iii) in the event such Financial Guaranty is a letter of credit, an opinion of counsel acceptable to the Trustee and to each Financial Guaranty Provider substantially to the effect that payments under such letter of credit will not constitute avoidable preferences under Section 547 of the United States Bankruptcy Code in a case commenced by or against the Authority thereunder or under any applicable provisions of the Debtor and Creditor Law of the State.

Notwithstanding the foregoing, if at any time after a Financial Guaranty has been deposited with the Trustee the ratings on any Outstanding Bonds are less than in the second highest rating category by each Rating Agency, without regard to qualification of such rating by symbols such as "+" or "-" or numerical notation, and the unsecured or uncollateralized long term debt of the Financial Guaranty Provider or the long term debt obligations secured or supported by a surety bond, insurance policy or letter of credit of a Financial Guaranty Provider is reduced below the third highest rating category by each Rating Agency, without regard to qualification of such rating by symbols such as "+" or "-" or numerical notation, the Authority shall either (i) replace or cause to be replaced said Financial Guaranty with another Financial Guaranty which satisfies the requirements of the two preceding paragraphs or (ii) deposit or cause to be deposited in the Debt Service Reserve Fund an amount of moneys equal to the value of the Financial Guaranty of such Financial Guaranty Provider, such deposits to be, as nearly as practicable, in ten equal semi-annual installments commencing on the earlier of the December 15 or June 15 next succeeding the reduction in said ratings.

Each Financial Guaranty shall be payable (upon the giving of such notice as may be required thereby) on any date on which moneys are required to be withdrawn from the Debt Service Reserve Fund and such withdrawal cannot be made without drawing upon such letter of credit or obtaining payment under such surety bond or insurance policy.

For the purposes of the above provisions under the heading "Debt Service Reserve Fund", and the provisions under the heading "Investment of Certain Funds" below, in computing the amount on deposit in the Debt Service Reserve Fund, a letter of credit, a surety bond or an insurance policy shall be valued at the amount available to be drawn or payable thereunder on the date of computation: *provided, however*, that, if the unsecured or uncollateralized long term debt of the Financial Guaranty Provider thereof, or the long term debt obligations secured or supported by a surety bond, insurance policy or letter of credit of said Financial Guaranty Provider has been reduced below the ratings required by the third paragraph under the heading "Debt Service Reserve Fund", said Financial Guaranty shall be valued at the lesser of (i) the amount available to be paid thereunder on the date of calculation and (ii) the difference between the amount available to be paid thereunder on the date of issue thereof and an amount equal to a fraction of such available amount the numerator of which is the aggregate number of December 15th's and June 15th's which has elapsed since such ratings were reduced and the denominator of which is ten.

With respect to any demand for payment under any Financial Guaranty, the Trustee shall make such demand for payment in accordance with the terms of such Financial Guaranty in a timely manner to assure the availability of moneys on the Bond Payment Date for which such moneys are required.

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 Second 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 509)*

SGR Subordinated Indebtedness Fund. The Trustee shall apply amounts on deposit in the SGR Subordinated Indebtedness Fund solely to the maintenance of reserves for, or the payment of, SGR Subordinated Indebtedness (or as otherwise provided by the resolution of the Authority authorizing each issue of SGR Subordinated Indebtedness). The Trustee shall withdraw from the SGR 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 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 or the purposes of such Fund may be transferred and paid by the Trustee to the Revenue Fund. *(Section 511)*

Surplus Fund. The Trustee shall, on each Bond Payment Date, apply moneys credited to the Surplus Fund in the following amounts: (i) to the Debt Service Fund the amount, if any, necessary (or all the moneys in the Surplus Fund if less than the amount necessary) to make up any deficiency in the amount required to be on deposit in such Fund and (ii) to the Debt Service Reserve Fund the amount, if any, necessary (or all the moneys in the Surplus Fund if less than the amount necessary) to make up any deficiency in the amount required to be on deposit in any Account in such Fund. Such transfer shall be made notwithstanding any other provisions of the Second 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 512)*

Depositaries. All moneys or securities held by the Trustee under the provisions of the Second Resolution shall constitute trust funds and the Trustee may, and shall, if directed in writing by an Authorized Representative of the Authority deposit such moneys or securities with one or more Depositaries in trust for the Trustee. All moneys or securities deposited under the provisions of the Second Resolution with the Trustee or any Depositary shall be held in trust and applied only in accordance with the provisions of the Second Resolution and the applicable provisions of the First Resolution, and each of the Funds and the Accounts shall be a trust fund for the purposes thereof. The Authority and the Trustee shall instruct each Depositary that any moneys or securities credited to a Fund or an Account under the Second Resolution which are deposited with such Depositary shall be identified to be part of such Fund or Account and subject to the pledge in favor of the Trustee created under the Second Resolution. Prior to the first deposit of any moneys or securities with each Depositary, the Authority and the Trustee shall obtain from such Depositary its agreement to serve as agent of the Trustee in holding such moneys or securities in pledge in favor of the Trustee and the contract or other written instrument between the Authority and such Depositary governing the establishment and operation of such account shall provide the moneys or securities from time to time deposited with such Depositary shall be held by such Depositary as such agent in pledge in favor of the Trustee; *provided, however*, that, except as otherwise expressly provided in the Second Resolution, the Authority shall be permitted at any time to make withdrawals from and write checks or other drafts against any account held by the Authority and established with such Depositary and apply the same for the purposes specified in the Second Resolution and, subject to Section 515 of the Second Resolution, the Authority shall be permitted to invest amounts in any such account in Investment Securities.

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 (or such greater amount as set forth in a Supplemental Resolution) 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 Second Resolution. *(Section 513)*

Investment of Certain Funds. Moneys held in the Debt Service Fund, the Debt Service Reserve Fund and the SGR Subordinated Indebtedness Fund (subject to the terms of any resolutions or other instrument securing any issue of SGR Subordinated Indebtedness) shall be invested and reinvested to the fullest practical 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 Fund, investments shall be of the type described in clauses (ii), (iii) or (iv) of the definition of "Investment Securities." Moneys in the Authority Expense Fund, the Revenue Fund, the Construction Fund, the Arbitrage Rebate Fund and the Surplus Fund may be invested and reinvested in Investment Securities which mature 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 the direction of an Authorized Representative of the Authority, given either in writing, which may be sent by electronic transmission of a facsimile, or by telephonic communication subsequently confirmed in writing. 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) and other investment earnings on any moneys or investments in the Funds and Accounts, other than the Construction Fund, the Debt Service Reserve Fund and the Arbitrage Rebate Fund, shall be paid into the Revenue Fund as and when received. Interest (net of that which represents a return of accrued interest paid connection with the purchase of any investment) and other investment earnings on any moneys or investments in (i) the Debt Service Reserve Fund shall be paid into the Arbitrage Rebate Fund, the Surplus Fund or the Revenue Fund; (ii) the Arbitrage Rebate Fund shall remain in such Fund; and (iii) the Construction Fund shall be paid quarterly, on the fifteenth day of each July, October, January and April of each Fiscal Year, to the Board deposit in the Local Water Fund; *provided, however*, that no such payment shall be made unless the Trustee shall receive (A) the written direction of an Authorized Representative of the Authority to make such payment and (B) a Certificate of an Authorized Representative of the Authority stating that, as of the date thereof, there has been deposited in the Revenue Fund during such Fiscal Year an amount equal to the Cash Flow Requirement.

All Investment Securities acquired with moneys in any Fund or Account shall be held by the Trustee in pledge or by a Depositary as agent in pledge in favor of the Trustee. *(Section 515)*

Additional Bonds. In order to provide sufficient funds for the Costs of Water Projects or for the purpose refunding any Bonds, First Resolution Bonds or any other bonds, notes or other obligations issued either by the Authority or the City to pay the capital costs of the System, Bonds of the Authority are authorized to be issued from time to time without limitations as to amount except as provided in the Second Resolution or as may be limited by law and such Bonds shall be issued subject to the terms, conditions and limitations established in the Second 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 Bond Counsel's Opinion as to validity and certain other matters required by the Second Resolution;

(b) a certified copy of the Supplemental Resolution authorizing such Series;

(c) an executed copy of an amendment or supplement to the Agreement or the Lease not theretofore delivered to the Trustee;

(d) except in the case of any Series of Refunding Bonds issued pursuant to Section 207 of the Second 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 on First Resolution Bonds, Outstanding Bonds, Parity Bond Anticipation Notes and Parity Reimbursement Obligations during such Fiscal Year for which Revenues are set forth pursuant to clause (i), excluding from Aggregate Debt Service the amount thereof which was paid from sources other than Revenues, and (iii) the sum of the Operating Expenses and the Required Deposits for such Fiscal Year (exclusive of Required Deposits for the payment of Outstanding Bonds. Parity Bond Anticipation Notes and Parity Reimbursement Obligations), and showing that the amount set forth in (i) is at least equal to the sum of (x) 110% of the amount set forth in (ii) and (y) 100% of the amount set forth in (iii);

(e) except in the case of Refunding Bonds issued pursuant to Section 207 of the Second Resolution, a Certificate of each of the respective Authorized Representatives of the Authority, the Board and City, each dated as of the date of such delivery, stating that (i) the Authority is not in default in the performance of any of the covenants, conditions, agreements or provisions contained in the Second Resolution, (ii) the Board is not in default in the performance of any of the covenants, conditions, agreements or provisions contained in the Agreement or the Lease and (iii) the City is not in default in the performance of any of the covenants, conditions, agreements or provisions contained in the Agreement or the Lease;

(f) a Certificate signed by an Authorized Representative of the Authority setting forth the Cash Flow Requirement as of such date; and

(g) in the case of any Series for which Capitalized Interest has been provided by the Supplemental Resolution authorizing such Series, (i) the written direction of an Authorized Representative of the Authority to establish the sub-account for such Series in the Capitalized Interest Account in the Debt Service Fund and (ii) the amount of the proceeds of such Series to be deposited in the SGR Subordinated Indebtedness Fund for payment to such sub-account. *(Sections 204 and 206)*

Refunding Bonds. One or more Series of Refunding Bonds may be issued pursuant to Section 207 of the Second Resolution at any time to refund any Outstanding Bonds only upon the Trustee's receipt of, among other things, a Certificate signed by an Authorized Representative of the Authority stating that (a) the average annual Debt Service on the Refunding Bonds of such Series does not exceed the average annual Debt Service on the Bonds be refunded and (b) the maximum Debt Service in any Fiscal Year on the Refunding Bonds of such Series shall not exceed the maximum Debt Service in any Fiscal Year on the Bonds to be refunded. *(Section 207)*

Bond Anticipation Notes. The Authority may, by resolution, authorize the issuance of notes (and renewals thereof in anticipation of the issuance of a 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 issued to provide for the payment of such notes. 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 Second Resolution. The Authority may also pledge (i) the Funds and Accounts, other than the Arbitrage Rebate Fund, and (ii) the Revenues to the payment of the interest on, and subject to Section 706 of the Second Resolution, the principal of such notes. A copy of the Second 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 and Interest Rate Exchange Agreements. In connection with the issuance of any Series of Bonds or Parity Bond Anticipation Notes, 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, Redemption Price or interest due or to become due on such Bonds or the principal or interest due or to become due on such Parity Bond Anticipation Notes, providing for the purchase of such Bonds by the issuer of such Credit Facility or Revolving funds for the purchase of such Bonds by the Authority. In connection therewith the Authority may enter into such agreements with the issuer of such Credit Facility providing for, among other things: (i) reimbursement of the issuer of the Credit Facility for amounts paid under the terms thereof; *provided, however*, that no obligation to reimburse such issuer shall be created, for purposes of the Second Resolution, until amounts are paid under such Credit Facility; (ii) the payment of fees and expenses to such issuer for the issuance of such Credit Facility; (iii) the terms and conditions of such Credit Facility and the Series of Bonds or the Parity Bond Anticipation Notes affected thereby; and (iv) the security, if any, to be provided for the issuance of such Credit Facility. 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. 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.

In connection with the Bonds of any Series or Parity Bond Anticipation Notes, the Authority may enter into one or more Interest Rate Exchange Agreements providing for, inter alia: (i) the payment of fees, expenses and other amounts to the Counterparty; (ii) the terms and conditions of such Interest Rate Exchange Agreements; (iii) the Bonds of the Series or Parity Bond Anticipation Notes to which such Interest Rate Exchange Agreement relate: and (iv) the security, if any, to be provided by the Authority or the Counterparty for performance of their respective obligations under the Interest Rate Exchange Agreement.

The Authority may also in an agreement with the issuer of a Credit Facility agree to reimburse such issuer directly for amounts paid under the terms of such Credit Facility, together with accrued interest thereon; *provided, however*, that no obligation to reimburse an issuer of a Credit Facility shall be created, for purposes of the Second Resolution, until amounts are paid under such Credit Facility. Such payments to reimburse the issuer of a Credit Facility and the obligations of the Authority to make payments to a Counterparty, are referred to in the Second Resolution as a "Reimbursement Obligation." Any Reimbursement Obligation (a "Parity Reimbursement Obligation") may be secured by a pledge of and a lien on, the Revenues, Other Moneys, the Funds and Accounts (other than the Arbitrage Rebate Fund) and amounts in the FGR Subordinated Indebtedness Fund on a parity with the lien created thereon by Section 501 of the Second Resolution; *provided, however*, that with respect to Parity Bond Anticipation Notes, such pledge and lien may secure only the Authority's Reimbursement Obligation incurred on account of amounts advanced for the payment of the interest on such Parity Bond Anticipation Notes unless the principal amount of such Reimbursement Obligation which was advanced on account of the principal of such Parity Bond Anticipation Notes is payable to the provider of the Credit Facility in substantially equal installments payable over not less than eight calendar quarters. Any such Parity Reimbursement Obligation shall be deemed to be a part of the Series or Parity Bond Anticipation Notes to which the Credit Facility or Interest Rate Exchange Agreement, as the case may be, which gave rise to such Parity Reimbursement Obligation relates. *(Section 209)*

Indebtedness and Liens. The Second Resolution provides that the Authority shall not issue any bonds, notes, or other evidences of indebtedness or otherwise incur any indebtedness, other than the First General Resolution Bonds, Bonds, Parity Bond Anticipation Notes or Parity Reimbursement Obligations, secured by a pledge of or other lien or charge on the Revenues or any of the assets pledged which is prior to or of equal rank or priority with the pledge made and shall not create or cause to be created any lien or charge on the Revenues or on any of the assets pledged which is prior to or of equal rank or priority with the pledge made; *provided, however*, that, with respect to Bond Anticipation Notes, such lien or pledge shall secure payment of the interest thereon, unless the principal thereof shall be secured by a lien on the Revenues as hereinafter provided in this paragraph. This paragraph shall not prevent the Authority from issuing bonds, other notes or other obligations for the corporate purposes of the Authority payable out of, or secured by a pledge of, Revenues to be derived on and after such date as the pledge of the Revenues provided in the Second Resolution shall be discharged and satisfied as provided in Section 1201 of the Second Resolution, or from issuing bonds or notes or other obligations for the corporate purposes of the Authority which are payable out of or secured by the pledge of amounts available therefor in the Local Water Fund after satisfaction, in each Fiscal Year, of the Cash Flow Requirement for such 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 Second Resolution and the lien and pledge created by the Second Resolution.

The Authority will not issue any bonds, notes or other evidences of indebtedness or otherwise incur any indebtedness, other than Bonds or First Resolution Bonds, payable from, or secured by a pledge of or other lien or charge on the Construction Account of the FGR Subordinated Indebtedness Fund. *(Section 706)*

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 shall the terms of any agreement made with or for the benefit of the Bondholders, or in any way impair the right, 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 709)*

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 copy of the Authority Budget, duly certified by an Authorized Representative of the Authority, showing the estimated Cash Flow Requirement (including the amount of each item constituting a component thereof, on a monthly basis) for the ensuing Fiscal Year, together with the estimated Revenues, other than Revenues to be received from the Board pursuant to the Agreement, expected to be received by the Authority in the ensuing Fiscal Year, and any other information required to be set forth therein by the Second 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 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 new Authority Budget is adopted.

The Authority may at any time adopt an amended Authority Budget for the then current or ensuing Fiscal Year, but no such amended Authority Budget shall supercede any prior Budget until the Authority shall have filed with the Trustee, the Board and the City a copy of such amended Authority Budget. *(Section 710)*

Cash Flow Requirement. On the first day of each month after the adoption of the Authority Budget for any Fiscal Year, the Authority shall recalculate the Cash Flow Requirement for such Fiscal Year. If any such recalculation results in the determination of a Cash Flow Requirement in excess of the Cash Flow Requirement set forth in the then current Authority Budget, the Authority shall adopt and file an amended Authority Budget in accordance with Section 711(c) of the Second Resolution.

At any time on or after May 1 of a Fiscal Year, but not later than June 15 of such Fiscal Year, the Authority shall recalculate the Cash Flow Requirement for such Fiscal Year and include therein, in addition to all other amounts required by the Second Resolution or by the Agreement or First Resolution to be included therein, an amount equal to the lesser of (i) the amount estimated to be in the Local Water Fund on June 30 of such Fiscal Year after the Board has made the payments and deposits required by paragraphs FIRST through SEVENTH of Section 4.2(c) of the Agreement and (ii) an amount equal to the difference between (x) the Aggregate Debt Service on Bonds, Parity Bond Anticipation Notes and Parity Reimbursement Obligations payable during the next succeeding Fiscal Year, less (y) the Other Moneys projected to be received during such next succeeding Fiscal Year. Upon such recalculation the Authority shall adopt and file an amended Authority Budget in accordance with Section 711(c) of the Second Resolution.

If a Financial Guaranty is to expire or terminate during a Fiscal Year and as a result thereof the amount in the Debt Service Reserve Fund would be less than the Debt Service Reserve Requirement, the Authority shall include in the Authority Budget and the Cash Flow Requirement for such Fiscal Year and for each of the four Fiscal Years next succeeding such Fiscal Year an amount equal to twenty percent (20%) of the deficit in the Debt Service Reserve Fund created by such expiration or termination, unless prior to adoption of the Authority Budget for any such Fiscal Year the Authority has obtained an extension of or substitute for such Financial Guaranty or a commitment for the issuance of such extension or substitute. *(Section 711)*

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 or the Agreement and Section 714 of the Second Resolution. *(Section 713)*

Amendments to First Resolution, Agreement and Lease. Except as otherwise provided in the Second Resolution, the First Resolution, the Agreement or the Lease may not be amended, changed, modified or terminated, nor may any provision thereof be waived, without the consent of the Holders of Outstanding Bonds as provided in the Second Resolution, if such amendment, change, modification, termination or waiver:

(i) amends subsection (c)(ii), (c)(iii), (g), (h), (i), (j), (k) or (l) of Section 206 of the First Resolution:

(ii) amends Section 207 or Section 209 of the First Resolution in any manner which would permit First Resolution Bonds or Parity Reimbursement Obligations to be issued or incurred which, except for such amendment, could not be issued or incurred; or

(iii) amends Article V of the First Resolution in any manner which reduces the amount or delays the time at which moneys are to be deposited in the FGR Subordinated Indebtedness Fund or modifies the order in which payments to the FGR Subordinated Indebtedness Fund are to be made or the purposes for which moneys in the FGR Subordinated Indebtedness Fund may be applied; or

(iv) modifies the events which constitute "Events of Default" under Section 1001 of the First Resolution, or

(v) amends the First Resolution, the Agreement or the Lease in any manner which would indirectly modify the provisions of any of the Sections of the First Resolution referred to in clauses (i), (ii), (iii) or (iv) of Section 714(a) of the Second Resolution in a manner proscribed thereby; or

(vi) adversely affects the interest of the Holders of Outstanding Bonds in any material respect.

No such amendment, change, modification, termination or waiver shall take effect unless the prior written consent of (a) the Holders of at least a majority in principal amount of the Bonds then Outstanding, or (b) in case less than all of the several Series of Bonds then Outstanding are affected by the amendment, change, modification, termination or waiver, the Holders of not less than a majority in principal amount of the Bonds of the Series so affected and then Outstanding; *provided, however*, that if such amendment, change modification, termination or waiver will, by its terms, not take effect so long as any Bonds of any specified 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 any calculation of Outstanding Bonds under the provisions contained under this "Amendments to First Resolution and Agreement."

Notwithstanding the provisions of the preceding paragraph, the amendments to the First Resolution made be the resolution of the Authority entitled "Twenty-second Supplemental Resolution to the Water and Sewer System General Revenue Bond Resolution adopted November 14, 1985," which resolution was adopted by the Authority on November 10, 1993, and any amendments to the Agreement necessary or appropriate to implement or conform the provisions of the Agreement to the First Resolution as so amended may take effect without the prior written consent of Holders of any of the Bonds.

For the purposes of the provisions under this heading "Amendments to First Resolution, Agreement and Lease" the purchasers of the Bonds of a Series, whether purchasing as underwriters, for resale or otherwise, upon such purchase from the Authority, may consent to an amendment, change, modification, termination or waiver permitted by the paragraphs under this heading "Amendments to First Resolution, Agreement and Lease" with the same effect as a consent given by the Holder of such Bonds.

For the purposes of the provisions under this heading, "Amendments to First Resolution, Agreement and Lease," Series shall be deemed to be adversely affected by an amendment, change, modification or alteration of the First Resolution or the Agreement if the same adversely affects or diminishes the rights of the Holders of the Bonds of such Series in any material respect. The Trustee may in its discretion determine whether or not, in accordance with the foregoing provisions, Bonds of any particular Series would be adversely affected in any material respect by any amendment, chance, modification or alteration, and any such determination shall be binding and conclusive on the Authority and all Holders of Bonds.

For the purposes of the provisions under this heading "Amendments to First Resolution, Agreement and Lease," the Trustee shall be entitled to rely upon an opinion of counsel, which counsel shall be satisfactory to the Trustee with respect to whether any amendment, change, modification or alteration adversely affects the interests of any Holders of Bonds then Outstanding in any material respect. *(Section 714)*

Supplemental Resolutions. The Second 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 a majority 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 Second 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 Second Resolution; to confirm any pledge under the Second 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 Second 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 Second Resolution or to insert such provisions clarifying matters or questions arising under the Second Resolution as are necessary or desirable, and are not contrary to or inconsistent with the Second Resolution as theretofore in effect; or to modify any provision of the Second Resolution or of any previously adopted Supplemental Resolution in any respect, provided that such modification shall not adversely affect the interests of the Bondholders in any material respect: or to provide for additional duties of the Trustee (provided that the Trustee shall consent thereto).

For the purposes of Article IX of the Second Resolution, the purchasers of the Bonds of a Series, whether purchasing as underwriters, for resale or otherwise, upon such purchase from the Authority, may consent to a modification or amendment permitted by Sections 803 or 902 of the Second Resolution in the manner provided in the Second Resolution, except that no proof of ownership shall be required, and with the same effect as a consent given by the Holder of such Bonds; *provided, however*, that, if such consent is given by a purchaser who is purchasing as an underwriter or for resale, the nature of the modification or amendment and the provisions for the purchaser consenting thereto shall be described in the official statement, prospectus, offering memorandum or other offering document prepared in connection with the primary offering of the Bonds of such Series by the Authority. *(Arts. VIII and IX)*

Defaults and Remedies. The Second 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 Second 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; (v) a filing of a petition for relief under any federal or State bankruptcy or similar law by the Authority; or (vi) a default by the Authority on any indebtedness payable out of the FGR Subordinated Indebtedness Fund has occurred as a result of which the principal thereof has been declared to be immediately due and payable, which declaration has not been annulled; then, upon the happening and continuance of any Event of Default, the Trustee, if no First Resolution Bonds are then Outstanding under the First Resolution or if the principal of all First Resolution Bonds then Outstanding has been declared to be due and payable immediately pursuant to Section 803 of the First Resolution, 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 be 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 Second 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 Second 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 Second 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 thereof shall have been declared payable) to the payment of all unpaid interest ratably, and then to unpaid principal or Redemption Price of any Bond or Parity Reimbursement Obligations, ratably; if the principal of all of the Bonds shall be due and payable, to the payment of the principal and interest then due and unpaid upon the Bonds and Parity Reimbursement Obligations and of the interest then due and unpaid on Parity Bond Anticipation Notes without preference or priority of principal over interest or of interest over principal, or of any installment of interest over any other installment of interest, or of any Bond, Parity Reimbursement Obligation or Parity Bond Anticipation Note over any other Bond, Parity Reimbursement Obligation or Parity Bond Anticipation Note, ratably, according to the amounts due respectively for principal and interest, to the persons entitled thereto without any discrimination or preference. No Bondholder has any right to institute a suit to enforce any provision of the Second Resolution or the execution of any trust thereunder or for any remedy thereunder, unless the Trustee has been requested by the holders of at least a majority in principal amount of the Bonds then Outstanding to take such action and has been offered adequate security and indemnity and has failed to commence such suit in the manner provided in the Second 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 Second 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 the interest on which, when due, without reinvestment, will, as verified by the report of a firm of nationally recognized independent certified public accountants,[1] 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 Second 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. *(Section 1201)*

Defeasance of Variable Rate Bonds. The Second 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 Second Resolution. *(Section 1201)*

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

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(1) Any Supplemental Resolution adopted by the Authority on or after January 12, 2006 provides that the verification report may be prepared by a firm of nationally recognized verification agents rather than a firm of nationally recognized independent certified public accountants.

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NEW YORK CITY WATER AND SEWER SYSTEM

A COMPONENT UNIT OF THE CITY OF NEW YORK

Combining Financial Statements
(Together with Independent Auditors' Report)

Years Ended June 30, 2017 and 2016

NEW YORK CITY WATER AND SEWER SYSTEM
(A Component Unit of The City of New York)

COMBINING FINANCIAL STATEMENTS
(Together with Independent Auditors' Report)

YEARS ENDED JUNE 30, 2017 AND 2016

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Marks Paneth LLP
685 Third Avenue
New York, NY 10017
P 212.503.8800
F 212.370.3759
www.markspaneth.com

New York
New Jersey
Pennsylvania
Washington, DC
Florida

MARKS PANETH
ACCOUNTANTS & ADVISORS

INDEPENDENT AUDITORS' REPORT

To the Members of the Joint Audit Committee of the
New York City Municipal Water Finance Authority and
New York City Water Board

We have audited the accompanying combining financial statements of the New York City Municipal Water Finance Authority and the New York City Water Board, which collectively comprise the New York City Water and Sewer System (the "System"), a component unit of The City of New York, which comprise the combining statements of net position (deficit) as of June 30, 2017 and 2016, and the related combining statements of revenues, expenses and changes in net position and cash flows for the years then ended, and the related notes to the combining financial statements.

Management's Responsibility for the Combining Financial Statements

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

Auditors' Responsibility

Our responsibility is to express an opinion on these combining 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 combining financial statements are free of material misstatement.

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

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

Opinion

In our opinion, the combining financial statements referred to above present fairly, in all material respects, the financial position of the New York City Municipal Water Finance Authority and the New York City Water Board as of June 30, 2017 and 2016, and the changes in their financial position and their cash flows for the years then ended in accordance with accounting principles generally accepted in the United States of America.

Emphasis of Matter

As discussed in Note 2, the System has restated its combining financial statements as of and for the year ended June 30, 2016 during the current year to retroactively implement Governmental Accounting Standards Board Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions*. Our opinion is not modified with respect to this matter.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis on pages 3 through 13, the schedule of changes for total OPEB liability and related ratios on page 65, the schedule of the Authority's proportionate share of the net pension liability on page 66, and the schedule of the Authority's pension contributions on page 67 be presented to supplement the basic combining financial statements. Such information, although not a part of the basic combining financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic combining financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic combining financial statements, and other knowledge we obtained during our audits of the basic combining financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Marks Paneth LLP

New York, NY
October 23, 2017

MARKS PANETH
ACCOUNTANTS & ADVISORS

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, 2017 and 2016. The System 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 "Water Board"). The System is a component unit of The City of New York ("The City").

The financial statements consist of four parts (1) management's discussion and analysis (this section), (2) the financial statements, (3) the notes to the financial statements and (4) required supplementary information.

The basic financial statements of the System, which include the combining statements of net position (Deficit), the combining statements of revenues, expenses and changes in net position (deficit) and the combining statements of cash flows, are presented for the purposes of displaying entity-wide information in accordance with Governmental Accounting Standards Board ("GASB") requirements. These financial statements are prepared using the economic resources measurement focus and the accrual basis of accounting. Accordingly, revenue is recognized when earned, and expenses are recorded when a liability is incurred, regardless of the timing of the related cash flows.

Financial Analysis and Results of Operations

The following summarizes the activities of the System for the fiscal years 2017, 2016, and 2015 (in thousands):

		Restated		Variance	
	2017	2016	2015	2017 v 2016	2016 v 2015
REVENUES:					
Operating revenue:					
Water supply and distribution	$ 1,407,328	$ 1,431,148	$ 1,382,189	$ (23,820)	$ 48,959
Sewer collection and treatment	2,237,652	2,275,524	2,197,679	(37,872)	77,845
Bad debt expense	(2,620)	(4,467)	(23,301)	1,847	18,834
Other operating revenues	186,355	185,793	211,267	562	(25,474)
Total operating revenues	3,828,715	3,887,998	3,767,834	(59,283)	120,164
Non-operating revenue:					
Subsidy income	166,715	164,502	163,655	2,213	847
Investment income	4,178	53,322	22,426	(49,144)	30,896
Total non-operating revenues	170,893	217,824	186,081	(46,931)	31,743
Total revenues	3,999,608	4,105,822	3,953,915	(106,214)	151,907
EXPENSES:					
Operations and maintenance	1,385,446	1,297,294	1,439,415	88,152	(142,121)
Other operating expenses	56,116	16,546	77,717	39,570	(61,171)
Administration and general	50,749	61,335	55,865	(10,586)	5,470
Depreciation expense	929,183	918,950	1,023,906	10,233	(104,956)
Capital distribution	45,789	11,082	25,337	34,707	(14,255)
Net loss on retirement and impairment of capital assets	44,452	4,488	2,334	39,964	2,154
Interest expense/cost of issuance	1,171,594	1,195,773	1,264,538	(24,179)	(68,765)
Total expenses	3,683,329	3,505,468	3,889,112	177,861	(383,644)
Net gain (loss) before capital contributions	316,279	600,354	64,803	(284,075)	535,551
CAPITAL CONTRIBUTIONS	6,225	4,060	223,791	2,165	(219,731)
CHANGE IN NET POSITION (DEFICIT)	322,504	604,414	288,594	(281,910)	315,820
NET POSITION (DEFICIT) - Beginning	733,748	129,793	(158,801)	603,955	288,594
RESTATEMENT OF BEGINNING NET POSITION (DEFICIT)	-	(459)	-	459	(459)
NET POSITION (DEFICIT) - Ending	$ 1,056,252	$ 733,748	$ 129,793	$ 322,504	$ 603,955

Operating Revenue

2017-2016

Operating revenues decreased by $59.3 million or 1.5% largely due to a 1.8% decrease in consumption compared to fiscal year 2016.

2016-2015

Operating revenues increased by $120 million or 3.2% largely due to a rate increase of 2.97%.

Other Operating Revenue

The following summarizes other operating revenues for fiscal years 2017, 2016, and 2015 (in thousands):

				Variance	
	2017	2016	2015	2017 v 2016	2016 v 2015
Upstate water fees	$ 85,410	$ 85,221	$ 78,427	$ 189	$ 6,794
Late payment fees	45,859	53,716	55,079	(7,857)	(1,363)
Change in residual interest in sold liens	2,274	1,737	5,479	537	(3,742)
Release of escrow/legal settlement	-	-	33	-	(33)
Program revenue	-	-	2,700	-	(2,700)
Connection fees and permits	19,979	17,204	17,551	2,775	(347)
Rebate of base rental payment	-	-	28,043	-	(28,043)
Service line protection program	32,833	27,915	23,955	4,918	3,960
Total other operating revenues	$ 186,355	$ 185,793	$ 211,267	$ 562	$ (25,474)

2017-2016

Upstate water fees remained constant from fiscal year 2016 to fiscal year 2017. There was no rate increase in fiscal year 2017 and water usage increased slightly.

Late payment fees decreased by $7.9 million or 14.6% compared to fiscal year 2016. This amount fluctuates depending on the timeliness of customer payments. In fiscal year 2017, collection improved along with a mid-year reduction on the interest rate charged for outstanding balances, a decrease from 9 percent to 6 percent.

The change in residual interest in sold liens increased by $0.5 million or 3.1% compared to fiscal year 2016. This was due to more residual liens from previous lien sales residing with the lien servicer.

The amounts received for the service line protection program increased by $4.9 million. The number of effective policies steadily increased from approximately 220,000 on July 1, 2016, to approximately 254,000 by the end of fiscal year 2017.

2016-2015

Upstate water fees increased by $6.8 million or 8.7% compared to fiscal year 2015. This was due to an increase in the wholesale rates in fiscal year 2016 of 9.87% for the quantity of water the upstate customers are entitled to by law and an increase of 2.97% for consumption in excess of the entitlement quantity.

Late payment fees decreased by $1.4 million or 2.5%. This amount fluctuates depending on the timeliness of customer payments.

The change in residual interest in sold liens decreased by $3.7 million or 68.3% compared to fiscal year 2015. This was due to fewer residual liens from previous lien sales residing with the lien servicer.

Rental rebate decreased by $28 million compared to fiscal year 2015. In fiscal year 2016, the City eliminated the rental rebate and instead reduced the charge for the base rental payment owed by the System.

The amounts received for the service line protection program increased by $4.0 million. The number of effective policies steadily increased from approximately 179,000 on July 1, 2015, to approximately 220,000 by the end of fiscal year 2016.

Investment Income (Non-Operating Revenue)

2017-2016

Investment income decreased by $49.1 million compared to fiscal year 2016. This is due to (a) The Water Board investment income that decreased by $4.9 million due to realized losses on securities purchased and lower interest rates on investment balances held at the institutions and (b) the Authority's $25.0 million of unrealized loss on investments, of which $20.6 million relates to Forward Purchase Agreements ("FPA"), and arbitrage rebate payments of approximately $14.3 million in fiscal year 2017. Excluding the unrealized loss on investments, the arbitrage rebate payments and the arbitrage accruals, investment income increased by $9.9 million.

2016-2015

Investment income increased by $30.9 million or 137.8% compared to fiscal year 2015. This was largely due to (a) The Water Board investment income that increased by $4.9 million due to higher interest rates on higher investment balances held at the institutions and (b) the Authority's $22.0 million of unrealized gain on investments, of which $18.6 million was related to Forward Purchase Agreements ("FPA").

Interest Expense (Non-Operating Expense)

2017-2016

Interest expense decreased by $29.6 million, which was offset by a $5.4 million increase in cost of issuance expense when compared to fiscal year 2016. The decrease was primarily due to the refunding of higher interest rates bonds with lower interest rate bonds.

2016-2015

Interest expense decreased by $68.8 million compared to fiscal year 2015. The greater part of the decrease relates to the cash defeasance of bonds that resulted in an accounting loss of approximately $60 million in fiscal year 2015; whereas, in fiscal year 2016, the accounting loss was only $22 million. The decrease was also due to the refunding of higher interest rates bonds with lower interest rate bonds.

Operating Expenses

2017-2016

Total operations and maintenance expenses increased by approximately $88.2 million or 6.8%. This increase was mainly due to the following: costs associates with dredging of the Flushing Bay, increased cost of sludge disposal, and increased costs associated with wastewater treatment.

Administrative and general expenses decreased by $11.0 million or 18.0% compared to fiscal year 2016 mainly due to decreased Water Board accrued expenses and consulting fees. The Authority's administrative and general expenses decreased marginally in fiscal year 2017.

2016-2015

Total operations and maintenance expenses decreased by $142.1 million or 9.9%. This decrease is due primarily to a write-down of $96.6 million of accrued personal service expenses and a decrease of $67.9 million in the base rental payment, which was offset by an increase in other expenses by $22.4 million.

Administrative and general expenses increased by $5.9 million or 10.6% compared to fiscal year 2015. Most of the increase is related to arbitrage rebate paid to the Internal Revenue Service for the investments of the Authority's bond proceeds.

Other Operating Expenses

2017-2016

Other operating expenses increased by $39.6 million compared to fiscal year 2016. In fiscal year 2016, there was a write down of $46.5 million of pollution remediation obligations. In fiscal year 2017, there was no write down to offset expenses.

2016-2015

Other operating expenses decreased by $61.2 million or 78.7% compared to fiscal year 2015. In fiscal year 2016, there were gross other operating expenses of $63.1 million; however, there was a write down of $46.5 million of pollution remediation obligations that were accrued in prior years, mainly for the Newtown Creek South Battery upgrade and Paerdegat Ecology Park. These remediations were completed in fiscal year 2016 and the initial cost estimates had been greater than actual expenses and were not revised until the close-out of the projects.

Non-Operating Expenses

2017-2016

Net loss on retirement and impairment of capital assets increased by $40.0 million due to the disposition of assets with carrying values greater than those in fiscal year 2016.

2016-2015

Net loss on retirement and impairment of capital assets increased by $2.2 million due to the disposition of assets with carrying values greater than those in fiscal year 2015.

Change in Net Position (Deficit)

2017-2016

The change in net position (deficit) represents the net total of operating revenue and expenses, non-operating revenues and expenses, and capital contributions. The variance in the change in net position (deficit) decreased by $281.5 million in fiscal year 2017.

2016-2015

The change in net position (deficit) represents the net total of operating revenue and expenses, non-operating revenues and expenses, and capital contributions. The variance in the change in net position (deficit) increased by $315.4 million in fiscal year 2016.

Ending Net Position (Deficit)

2017-2016

The ending net position (deficit) represents the net total of operating revenue and expenses, non-operating revenues and expenses, capital contributions, and beginning balance of net position. Ending net position (deficit) increased by $322.5 million in fiscal year 2017.

2016-2015

The ending net position (deficit) represents the net total of operating revenue and expenses, non-operating revenues and expenses, capital contributions, and beginning balance of net position. Ending net position (deficit) increased by $604 million in fiscal year 2016.

The following is a summary of the System's assets, deferred outflows of resources, liabilities, deferred inflows of resources and net position (deficit) as of June 30 (in thousands):

	2017	Restated 2016	2015	Variance 2017 v 2016	Variance 2016 v 2015
Current assets	$ 3,497,079	$ 3,185,052	$ 3,140,067	$ 312,027	$ 44,985
Residual interest in sold liens	75,607	73,333	71,596	2,274	1,737
Capital assets	29,536,272	29,065,790	28,664,121	470,482	401,669
Total assets	33,108,958	32,324,175	31,875,784	784,783	448,391
Deferred outflows of resources:					
Deferred outflows from hedging	100,438	142,802	103,182	(42,364)	39,620
Deferred outflows from pension	(184)	275	105	(459)	170
Total deferred outflows of resources	100,254	143,077	103,287	(42,823)	39,790
Total assets and deferred outflows of resources	$ 33,209,212	$ 32,467,252	$ 31,979,071	$ 741,960	$ 488,181
Current liabilities	$ 1,369,149	$ 1,285,910	$ 1,702,560	$ 83,239	$ (416,650)
Long-term liabilities	30,767,116	30,430,785	30,128,541	336,331	302,244
Total liabilities	32,136,265	31,716,695	31,831,101	419,570	(114,406)
Deferred inflows of resources:					
Deferred inflows from pension	11	154	199	(143)	(45)
Deferred inflows from OPEB	291	8	-	283	8
Unamortized deferred bond refunding costs	16,393	16,647	17,978	(254)	(1,331)
Total deferred inflows of resources	16,695	16,809	18,177	(114)	(1,368)
Net position (deficit):					
Net investment in capital assets	(204,403)	(430,201)	(598,349)	225,798	168,148
Restricted for debt service	1,781,994	1,457,332	1,224,925	324,662	232,407
Restricted for operations and maintenance	237,746	250,447	226,383	(12,701)	24,064
Unrestricted (deficit)	(759,085)	(543,830)	(723,166)	(215,255)	179,336
Total net position (deficit)	1,056,252	733,748	129,793	322,504	603,955
Total liabilities, deferred infows of resources, and net position (deficit)	$ 33,209,212	$ 32,467,252	$ 31,979,071	$ 741,960	$ 488,181

2017-2016

Residual interest in sold liens receivable increased by $2.3 million or 3.1% compared to fiscal year 2016 due to a new tax lien issued in fiscal year 2017.

Deferred outflows of resources from hedging decreased by $42.4 million or 29.7% compared to fiscal year 2016 because of higher short-term interest rates on derivative instruments during fiscal year 2017.

Current liabilities increased by $83.2 million or 6.5% compared to fiscal year 2016. This is due to an increase in current portion of Bonds Anticipation Notes payable offset by a decrease of $200 million in outstanding commercial paper.

Long-term liabilities increased by $336 million or 1.1% primarily due to the issuance of new debt for capital projects.

2016-2015

Residual interest in sold liens receivable increased by $1.7 million or 2.4% compared to fiscal year 2015 due to a new tax lien issued in May 2016.

Deferred outflows of resources from hedging increased by $39.6 million or 38.4% compared to fiscal year 2015. This is due to lower interest rates on derivative instruments.

Current liabilities decreased by $417 million or 24.5% compared to fiscal year 2015. This is primarily due to a decrease of $400 million in issued commercial paper.

Long-term liabilities increased by $302 million or 1.0% primarily due to the issuance of new debt for capital projects.

Capital Assets

The System's capital assets include buildings, equipment, vehicles, water supply and wastewater treatment systems, and water distribution and sewage collection systems, as well as utility construction.

The Authority issues debt to pay for the capital improvements to the System and related costs. Costs related to the System's filtration avoidance determination, including land acquisition in the upstate watershed and certain costs associated with pollution remediation, are financed with debt but are not recorded as System assets on the balance sheet. The cumulative amount of expenses not capitalized as assets as of June 30, 2017 was $1.4 billion. These costs or distributions are expensed in the System's combining statements of revenues, expenses, and changes in net position (deficit) in the years incurred. The land purchased is granted to The City and becomes The City's capital asset because it is not subject to the method of capitalization under which the System reports its capital assets.

Capital assets as of June 30, are detailed as follows (in thousands):

				Variance	
	2017	**2016**	**2015**	**2017 v 2016**	**2016 v 2015**
Nondepreciable assets -					
Utility construction in progress	$ 5,475,307	$ 5,227,182	$ 4,558,225	$ 248,125	$ 668,957
Utility plant in service:					
Buildings	34,937	34,877	34,877	60	-
Machinery and Equipment	3,940,876	3,826,694	3,774,428	114,182	52,266
Vehicles	246,899	292,404	291,345	(45,505)	1,059
Water supply and distribution and wastewater treatment and sewage collection systems	33,670,666	32,661,550	32,075,316	1,009,116	586,234
Total utility plant in service	37,893,378	36,815,525	36,175,966	1,077,853	639,559
Less accumulated depreciation for:					
Buildings	(26,455)	(25,140)	(23,822)	(1,315)	(1,318)
Machinery and Equipment	(1,872,243)	(1,641,501)	(1,412,576)	(230,742)	(228,925)
Vehicles	(94,025)	(128,549)	(121,113)	34,524	(7,436)
Water supply and distribution and wastewater treatment and sewage collection systems	(11,839,690)	(11,181,727)	(10,512,559)	(657,963)	(669,168)
Total accumulated depreciation	(13,832,413)	(12,976,917)	(12,070,070)	(855,496)	(906,847)
Total utility plant in service - net	24,060,965	23,838,608	24,105,896	222,357	(267,288)
Total capital assets - net	$ 29,536,272	$ 29,065,790	$ 28,664,121	$ 470,482	$ 401,669

2017-2016

The increase in the System's capital assets, net of depreciation during fiscal year 2017 was $470 million or 1.6%. Additions to utility construction in progress for fiscal year 2017 were $248 million. Total gross additions to utility construction in progress were $1.4 billion, less deletions for fiscal year 2017 of $1.2 billion. The System completed and placed in service over $286 million of sewage treatment projects, $352 million of water distribution capital projects, installed and upgraded over $303 million sewage pipes, and $108 million water pipes throughout the five boroughs of New York City. The System also completed numerous other projects.

2016-2015

The increase in the System's capital assets, net of depreciation during fiscal year 2016 was $402 million or 1.4%. Additions to utility construction in progress for fiscal year 2016 were $669 million. Total gross additions to utility construction in progress were $1.3 billion, less deletions for fiscal year 2016 of $656.2 million. The System completed and placed in service over $180 million of sewage treatment and water distribution capital projects, installed and upgraded over $150 million sewage and water pipes throughout the five boroughs of New York City, and completed numerous other projects.

Debt Administration

The debt program of the Authority includes commercial paper and long-term debt issued to the public, and Bond Anticipation Notes ("BANs"), and interest-subsidized bonds issued through the New York State Environmental Facilities Corporation ("EFC"). The commercial paper program and BANs are interim financing instruments. Traditionally, they have been the main source of funds used to reimburse The City for payments made for water and sewer projects. The Authority periodically issues long-term debt to retire outstanding commercial paper and subsidized debt through EFC to retire BANs. From time to time, the Authority issues long-term bonds to pay for water and sewer projects foregoing the interim borrowing. The Authority also periodically issues refunding bonds to refinance higher coupon debt. See Note 9 Short-Term Debt and Note 10 Long-Term Debt for further details.

At June 30, 2017, the total outstanding debt of the System was $31.3 billion, of which $359.4 million was outstanding BANs issued to EFC, $29.7 billion consisted of adjustable and fixed-rate bonds maturing in varying installments through 2053, and the remaining $1.2 billion was the net premium on bonds.

The total outstanding long-term debt including current portion at June 30, 2017 was as follows (in thousands):

Issue Date		Principal Outstanding [1]
2017	$	2,935,323
2016		2,360,570
2015		3,166,815
2014		2,713,446
2013		2,270,625
2012 and prior		16,583,619
Total long-term debt	$	30,030,398

[1] Principal outstanding does not including premium or discount on bonds.

In fiscal year 2017, the Authority issued $1.6 billion of water and sewer system revenue bonds, including $480.4 million of refunding bonds and $1.2 billion of new money bonds. Additionally, the Authority also issued $1.2 billion of water and sewer system revenue bonds through EFC, including $629.4 million of refunding bonds and $569.4 million of new money bonds. The Authority used new money bond proceeds to finance capital improvements to the System, to provide long-term financing of commercial paper notes and BANs that previously financed capital improvements to the System, and to pay for bond issuance costs.

During fiscal year 2017, the Authority legally defeased $782 million of outstanding bonds using current revenue. This resulted in an accounting gain of $4.8 million that was included in interest expense and a gross debt service savings of $1.5 billion.

See Note 10 for details on bond and BANs issuances and defeasances in fiscal year 2017.

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 Investor Relations, New York City Municipal Water Finance Authority, 255 Greenwich Street, New York, New York 10007 or to NYWInvestors@omb.nyc.gov.

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NEW YORK CITY WATER AND SEWER SYSTEM

COMBINING STATEMENTS OF NET POSITION (DEFICIT)
June 30, 2017
(in thousands)

ASSETS AND DEFERRED OUTFLOWS OF RESOURCES	Water Board	New York City Municipal Water Finance Authority	Eliminations	Total
CURRENT ASSETS:				
Unrestricted cash and cash equivalents	$ -	$ -	$ -	$ -
Restricted cash and cash equivalents	11,191	1,600,551	-	1,611,742
Restricted investments	237,341	876,126	-	1,113,467
Accrued interest and subsidy receivable	-	5,455	-	5,455
Accounts receivable:				
Billed - less allowance for uncollectable water and sewer receivables of $384,895	404,669	-	-	404,669
Unbilled - less allowance for uncollectable wate and sewer receivables of $28,772	327,231	-	-	327,231
Receivable from The City of New York	34,515	-	-	34,515
Total current assets	**1,014,947**	**2,482,132**	**-**	**3,497,079**
NON-CURRENT ASSETS:				
Utility plant in service less accumulated depreciation of $13,832,413	24,060,965	-	-	24,060,965
Utility plant construction	5,475,307	-	-	5,475,307
Total capital assets	**29,536,272**	**-**	**-**	**29,536,272**
Residual interest in sold liens	75,607	-	-	75,607
Revenue required to be billed by and received from the Board	-	12,113,674	(12,113,674)	-
Total non-current assets	**29,611,879**	**12,113,674**	**(12,113,674)**	**29,611,879**
DEFERRED OUTFLOWS OF RESOURCES:				
Deferred outflows of resources from hedging	-	100,438	-	100,438
Deferred outflows of resources from pension	-	(184)	-	(184)
Total deferred outflows of resources	**-**	**100,254**	**-**	**100,254**
Total assets and deferred outflows of resources	**$ 30,626,826**	**$ 14,696,060**	**$ (12,113,674)**	**$ 33,209,212**

See notes to combining financial statements.

(Continued)

NEW YORK CITY WATER AND SEWER SYSTEM

COMBINING STATEMENTS OF NET POSITION (DEFICIT)
June 30, 2017
(in thousands)

LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND NET POSITION (DEFICIT)	Water Board	New York City Municipal Water Finance Authority	Eliminations	Total
CURRENT LIABILITIES:				
Accounts payable	$ 3,252	$ 16,555	$ -	$ 19,807
Interest payable	-	51,706	-	51,706
Revenue received in advance	69,561	-	-	69,561
Current portion of bonds and notes payable	-	632,921	-	632,921
Payable to The City of New York	-	525,138	-	525,138
Service credits on customer accounts	70,016	-	-	70,016
Total current liabilities	**142,829**	**1,226,320**	**-**	**1,369,149**
LONG-TERM LIABILITIES:				
Bonds and notes payable	-	30,633,829	-	30,633,829
Pollution remediation obligation	29,500	-	-	29,500
Interest rate swap agreement - net	-	100,438	-	100,438
Revenue requirements payable to the Authority	12,113,674	-	(12,113,674)	-
Net pension liability	-	828	-	828
Net OPEB liability		1,412	-	1,412
Other long-term liability	-	1,109	-	1,109
Total long-term liabilities	**12,143,174**	**30,737,616**	**(12,113,674)**	**30,767,116**
Total liabilities	**12,286,003**	**31,963,936**	**(12,113,674)**	**32,136,265**
DEFERRED INFLOWS OF RESOURCES:				
Unamortized deferred bond refunding costs	-	16,393	-	16,393
Deferred inflows from pension	-	11	-	11
Deferred inflows from OPEB	-	291	-	291
Total deferred inflows of resources	**-**	**16,695**	**-**	**16,695**
NET POSITION (DEFICIT):				
Net investment in capital assets	29,536,273	(29,740,676)	-	(204,403)
Restricted for debt service	-	1,781,994	-	1,781,994
Restricted for operations and maintenance	237,746	-	-	237,746
Unrestricted (deficit)	(11,433,196)	10,674,111	-	(759,085)
Total net position (deficit)	**18,340,823**	**(17,284,571)**	**-**	**1,056,252**
Total liabilities, deferred inflows of resources and net position (deficit)	**$ 30,626,826**	**$ 14,696,060**	**$ (12,113,674)**	**$ 33,209,212**

See notes to combining financial statements.

(Concluded)

NEW YORK CITY WATER AND SEWER SYSTEM

COMBINING STATEMENTS OF NET POSITION (DEFICIT)
June 30, 2016
(in thousands) (RESTATED)

ASSETS AND DEFERRED OUTFLOWS OF RESOURCES	Water Board	New York City Municipal Water Finance Authority	Eliminations	Total
CURRENT ASSETS:				
Unrestricted cash and cash equivalents	$ 356	$ -	$ -	$ 356
Restricted cash and cash equivalents	132,658	1,481,701	-	1,614,359
Restricted investments	130,298	454,989	-	585,287
Accrued interest and subsidy receivable	-	6,096	-	6,096
Accounts receivable:				-
Billed - less allowance for uncollectable water and sewer receivables of $381,318	444,613	-	-	444,613
				-
Unbilled - less allowance for uncollectable wate and sewer receivables of $29,728	339,756	-	-	339,756
Receivable from The City of New York	194,362	-	-	194,362
Prepaid expense	-	223	-	223
Total current assets	**1,242,043**	**1,943,009**	**-**	**3,185,052**
NON-CURRENT ASSETS:				
Utility plant in service less accumulated depreciation of $12,976,917	23,838,608	-	-	23,838,608
Utility plant construction	5,227,182	-	-	5,227,182
Total capital assets	**29,065,790**	**-**	**-**	**29,065,790**
Residual interest in sold liens	73,333	-	-	73,333
Revenue required to be billed by and received from the Board	-	13,232,545	(13,232,545)	-
Total non-current assets	**29,139,123**	**13,232,545**	**(13,232,545)**	**29,139,123**
DEFERRED OUTFLOWS OF RESOURCES:				
Deferred outflows of resources from hedging	-	142,802	-	142,802
Deferred outflows of resources from pension	-	275	-	275
Total deferred outflows of resources	**-**	**143,077**	**-**	**143,077**
Total assets and deferred outflows of resources	**$ 30,381,166**	**$ 15,318,631**	**$ (13,232,545)**	**$ 32,467,252**

See notes to combining financial statements.

(Continued)

NEW YORK CITY WATER AND SEWER SYSTEM

COMBINING STATEMENTS OF NET POSITION (DEFICIT)
June 30, 2016
(in thousands) (RESTATED)

LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND NET POSITION (DEFICIT)	New York City Water Board	New York City Municipal Water Finance Authority	Eliminations	Total
CURRENT LIABILITIES:				
Accounts payable	$ 6,987	$ 11,079	$ -	$ 18,066
Interest payable	-	49,745	-	49,745
Revenue received in advance	68,752	-	-	68,752
Commercial paper payable	-	200,000	-	200,000
Current portion of bonds and notes payable	-	378,028	-	378,028
Payable to The City of New York	-	498,330	-	498,330
Service credits on customer accounts	72,989	-	-	72,989
Total current liabilities	**148,728**	**1,137,182**	**-**	**1,285,910**
LONG-TERM LIABILITIES:				
Bonds and notes payable	-	30,251,327	-	30,251,327
Pollution remediation obligation	32,382	-	-	32,382
Interest rate swap agreement - net	-	142,802	-	142,802
Revenue requirements payable to the Authority	13,232,545	-	(13,232,545)	-
Net pension liability	-	1,215	-	1,215
Net OPEB liability		1,601	-	1,601
Other long-term liability	-	1,458	-	1,458
Total long-term liabilities	**13,264,927**	**30,398,403**	**(13,232,545)**	**30,430,785**
Total liabilities	**13,413,655**	**31,535,585**	**(13,232,545)**	**31,716,695**
DEFERRED INFLOWS OF RESOURCES:				
Unamortized deferred bond refunding costs	-	16,647	-	16,647
Deferred inflows from pension	-	154	-	154
Deferred inflows from OPEB	-	8	-	8
Total deferred inflows of resources	**-**	**16,809**	**-**	**16,809**
NET POSITION (DEFICIT):				
Net investment in capital assets	29,065,790	(29,495,991)	-	(430,201)
Restricted for debt service	-	1,457,332	-	1,457,332
Restricted for operations and maintenance	250,447	-	-	250,447
Unrestricted (deficit)	(12,348,726)	11,804,896	-	(543,830)
Total net position (deficit)	**16,967,511**	**(16,233,763)**	**-**	**733,748**
Total liabilities, deferred inflows of resources and net position (deficit)	**$ 30,381,166**	**$ 15,318,631**	**$ (13,232,545)**	**$ 32,467,252**

See notes to combining financial statements.

(Concluded)

NEW YORK CITY WATER AND SEWER SYSTEM

COMBINING STATEMENTS OF REVENUES, EXPENSES AND CHANGES IN NET POSITION (DEFICIT)

YEAR ENDED JUNE 30, 2017
(in thousands)

	New York City		
	Water Board	**Municipal Water Finance Authority**	**Total**
OPERATING REVENUES:			
Water supply and distribution	$ 1,407,328	$ -	$ 1,407,328
Sewer collection and treatment	2,237,652	-	2,237,652
Bad debt expense	(2,620)		(2,620)
Other operating revenues	186,355	-	186,355
Total operating revenues	**3,828,715**	**-**	**3,828,715**
OPERATING EXPENSES:			
Operations and maintenance	1,385,446	-	1,385,446
Administration and general	2,697	48,052	50,749
Other operating expenses	56,116	-	56,116
Depreciation expense	929,183	-	929,183
Total operating expenses	**2,373,442**	**48,052**	**2,421,494**
OPERATING INCOME (LOSS)	1,455,273	(48,052)	1,407,221
NON-OPERATING REVENUE (EXPENSES):			
Interest expense	-	(1,148,308)	(1,148,308)
Cost of issuance	-	(23,286)	(23,286)
Net loss on retirement and impairment of capital assets	(44,452)	-	(44,452)
Subsidy income	-	166,715	166,715
Capital distribution	(45,789)	-	(45,789)
Investment income	2,058	2,120	4,178
NET INCOME (LOSS) BEFORE CAPITAL CONTRIBUTIONS	**1,367,090**	**(1,050,811)**	**316,279**
CAPITAL CONTRIBUTION	**6,225**	**-**	**6,225**
CHANGE IN NET POSITION (DEFICIT)	**1,373,315**	**(1,050,811)**	**322,504**
NET POSITION (DEFICIT) - Beginning of year	**16,967,511**	**(16,233,763)**	**733,748**
NET POSITION (DEFICIT) - End of year	**$ 18,340,826**	**$ (17,284,574)**	**$ 1,056,252**

See notes to combining financial statements.

NEW YORK CITY WATER AND SEWER SYSTEM

COMBINING STATEMENTS OF REVENUES, EXPENSES AND CHANGES IN NET POSITION (DEFICIT)

YEAR ENDED JUNE 30, 2016 (RESTATED)

(in thousands)

	New York City		
	Water Board	**Municipal Water Finance Authority**	**Total**
OPERATING REVENUES:			
Water supply and distribution	$ 1,431,148	$ -	$ 1,431,148
Sewer collection and treatment	2,275,524	-	2,275,524
Bad debt expense	(4,467)		(4,467)
Other operating revenues	185,793	-	185,793
Total operating revenues	**3,887,998**	**-**	**3,887,998**
OPERATING EXPENSES:			
Operations and maintenance	1,297,294	-	1,297,294
Administration and general	11,855	49,480	61,335
Other operating expenses	16,546	-	16,546
Depreciation expense	918,950	-	918,950
Total operating expenses	**2,244,645**	**49,480**	**2,294,125**
OPERATING INCOME (LOSS)	1,643,353	(49,480)	1,593,873
NON-OPERATING REVENUE (EXPENSES):			
Interest expense	-	(1,177,923)	(1,177,923)
Cost of issuance	-	(17,850)	(17,850)
Net loss on retirement and impairment of capital assets	(4,488)	-	(4,488)
Subsidy income	-	164,502	164,502
Capital distribution	(11,082)	-	(11,082)
Investment income	6,979	46,343	53,322
NET INCOME (LOSS) BEFORE CAPITAL CONTRIBUTIONS	**1,634,762**	**(1,034,408)**	**600,354**
CAPITAL CONTRIBUTIONS	**4,060**	**-**	**4,060**
CHANGE IN NET POSITION (DEFICIT)	**1,638,822**	**(1,034,408)**	**604,414**
NET POSITION (DEFICIT) - Beginning of year	**15,328,689**	**(15,198,896)**	**129,793**
RESTATEMENT OF BEGINNING NET POSITION (DEFICIT)	**-**	**(459)**	**(459)**
NET POSITION (DEFICIT) - End of year	**$ 16,967,511**	**$ (16,233,763)**	**$ 733,748**

See notes to combining financial statements.

NEW YORK CITY WATER AND SEWER SYSTEM

COMBINING STATEMENTS OF CASH FLOWS

Year Ended June 30, 2017
(in thousands)

	New York City		
	Water Board	Municipal Water Finance Authority	Total
CASH FLOWS FROM OPERATING ACTIVITIES:			
Receipts from customers	$ 3,876,746	$ -	$ 3,876,746
Payments for operations and maintenance	(1,263,445)	-	(1,263,445)
Payments for administration	(6,433)	(47,043)	(53,476)
Net cash provided by (used in) operating activities	**2,606,868**	**(47,043)**	**2,559,825**
CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES:			
Proceeds from issuing bonds, notes and other borrowings - net of issuance costs	-	3,681,935	3,681,935
Acquisition and construction of capital assets	292	(1,478,319)	(1,478,027)
Payments by the Water Board to the Authority	(2,623,998)	2,623,998	-
Repayments of bonds, notes and other borrowings	-	(3,165,157)	(3,165,157)
Interest paid on bonds, notes and other borrowings	-	(1,081,883)	(1,081,883)
Net cash (used in) provided by capital and related financing activities	**(2,623,706)**	**580,574**	**(2,043,132)**
CASH FLOWS FROM INVESTING ACTIVITIES:			
Sales and maturities of investments	1,819	14,213	16,032
Purchases of investments	(109,773)	(461,057)	(570,830)
Interest on investments	2,969	32,163	35,132
Net cash (used by) provided by investing activities	**(104,985)**	**(414,681)**	**(519,666)**
NET INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS	**(121,823)**	**118,850**	**(2,973)**
CASH AND CASH EQUIVALENTS - Beginning of year	**133,014**	**1,481,701**	**1,614,715**
CASH AND CASH EQUIVALENTS - End of year	**$ 11,191**	**$ 1,600,551**	**$ 1,611,742**

See notes to combining financial statements.

(Continued)

NEW YORK CITY WATER AND SEWER SYSTEM

COMBINING STATEMENTS OF CASH FLOWS
Year Ended June 30, 2017
(in thousands):

	New York City		
	Water Board	**Municipal Water Finance Authority**	**Total**
RECONCILIATION OF OPERATING INCOME / (LOSS) TO NET CASH PROVIDED BY (USED IN) OPERATING ACTIVITIES:			
Operating income (loss)	$ 1,455,273	$ (48,052)	$ 1,407,221
Adjustments to reconcile operating income (loss) to net cash (used in) provided by operating activities:			
Depreciation	929,183	-	929,183
Other operating expenses paid for with bond proceeds	11,207	-	11,207
Pollution remediation expense	9,943	-	9,943
Changes in assets and liabilities:			
Pollution remediation liability	(2,881)	-	(2,881)
Receivables - net	52,468	-	52,468
Receivable from The City	159,847	-	159,847
Residual interest in sold liens	(2,274)	-	(2,274)
Accounts payable	(3,735)	1,009	(2,726)
Revenues received in advance	808	-	808
Refunds payable	(2,971)	-	(2,971)
NET CASH PROVIDED BY (USED IN) OPERATING ACTIVITIES	**$ 2,606,868**	**$ (47,043)**	**$ 2,559,825**

The following are the noncash capital and related financing activities (in thousands):

Interest expense includes the amortization of net (premium) and discount in the amount of $80,967 in 2017
Capital expenditures in the amount of $525,137 had been incurred but not paid at June 30, 2017

The Water Board received federal, state, and other capital contributions of $5,931 in 2017

The Water Board received capital contributions of $292 in 2017 from Westchester County

See notes to combining financial statements. (Concluded)

NEW YORK CITY WATER AND SEWER SYSTEM

COMBINING STATEMENTS OF CASH FLOWS

Year Ended June 30, 2016
(in thousands) (RESTATED)

	New York City		
	Water Board	**Municipal Water Finance Authority**	**Total**
CASH FLOWS FROM OPERATING ACTIVITIES:			
Receipts from customers	$ 3,852,598	$ -	$ 3,852,598
Payments for operations and maintenance	(1,423,479)	-	(1,423,479)
Payments for administration	(8,530)	(45,641)	(54,171)
Net cash provided by (used in) operating activities	**2,420,589**	**(45,641)**	**2,374,948**
CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES:			
Proceeds from issuing bonds, notes and other borrowings - net of issuance costs	-	3,689,007	3,689,007
Acquisition and construction of capital assets	292	(1,370,943)	(1,370,651)
Payments by the Water Board to the Authority	(2,412,972)	2,412,972	-
Repayments of bonds, notes and other borrowings	-	(3,759,363)	(3,759,363)
Interest paid on bonds, notes and other borrowings	-	(1,067,175)	(1,067,175)
Net cash (used in) provided by capital and related financing activities	**(2,412,680)**	**(95,502)**	**(2,508,182)**
CASH FLOWS FROM INVESTING ACTIVITIES:			
Sales and maturities of investments	248,151	58,967	307,118
Purchases of investments	(151,930)	(249,597)	(401,527)
Interest on investments	6,778	24,335	31,113
Net cash (used by) provided by investing activities	**102,999**	**(166,295)**	**(63,296)**
NET INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS	**110,908**	**(307,438)**	- **(196,530)**
CASH AND CASH EQUIVALENTS - Beginning of year	**22,106**	**1,789,139**	**1,811,245**
CASH AND CASH EQUIVALENTS - End of year	**$ 133,014**	**$ 1,481,701**	**$ 1,614,715**

See notes to combining financial statements. (Continued)

NEW YORK CITY WATER AND SEWER SYSTEM

COMBINING STATEMENTS OF CASH FLOWS
Year Ended June 30, 2016
(in thousands) (RESTATED)

	New York City		
	Water Board	**Municipal Water Finance Authority**	**Total**
RECONCILIATION OF OPERATING INCOME / (LOSS) TO NET CASH PROVIDED BY (USED IN) OPERATING ACTIVITIES:			
Operating income (loss)	$ 1,643,353	$ (49,939)	$ 1,593,414
Adjustments to reconcile operating income (loss) to net cash (used in) provided by operating activities:			
Depreciation	918,950	-	918,950
Other operating expenses paid for with bond proceeds	25,968	-	25,968
Pollution remediation expense	10,297	-	10,297
Changes in assets and liabilities:			
Pollution remediation liability	(46,574)	-	(46,574)
Receivables - net	(50,900)	-	(50,900)
Prepaid expense	-	(223)	(223)
Receivable from The City	(74,606)	-	(74,606)
Residual interest in sold liens	(1,737)	-	(1,737)
Accounts payable	3,325	4,520	7,846
Revenues received in advance	(8,531)	-	(8,531)
Refunds payable	1,044	-	1,044
NET CASH PROVIDED BY (USED IN) OPERATING ACTIVITIES	**$ 2,420,589**	**$ (45,641)**	**$ 2,374,948**

The following are the noncash capital and related financing activities (in thousands):

Interest expense includes the amortization of net (premium) and discount in the amount of $66,474 in 2016
Capital expenditures in the amount of $498,330 had been incurred but not paid at June 30, 2016

The Water Board received federal, state, and other capital contributions of $3,768 in 2016

The Water Board received capital contributions of $292 in 2016 from Westchester County

See notes to combining financial statements. (Concluded)

1. ORGANIZATION

The New York City Water and Sewer System (the "System") provides water supply, treatment and distribution, and sewage collection, treatment, and disposal for the citizenry of The City of New York ("The City"). The System, as presented in the accompanying combining 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 "Water 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 (the "State"), as amended by Chapter 514 of the laws of 1984 of the State of New York. The Water Board was created by Chapter 515 of the laws of 1984 of the State of New York. The Act also empowers the Authority to issue debt 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 Water Board to lease the System from The City and to set and collect water rates, fees, rents and other charges for use of, or for services furnished, rendered, or made available by, the System to generate enough revenue to pay debt service on the Authority's bonds and to place the System on a self-sustaining basis.

The Financing Agreement by and among The City of New York, The New York City Municipal Water Finance Authority and the New York City Water Board dated as of July 1, 1985 (the "Agreement") provides that the Authority will issue bonds to finance the cost of capital investment and related costs of the System. It also sets forth the funding priority for debt service costs of the Authority, operating costs of the System, and the rental payment to The City, which was not paid in fiscal year 2017.

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

In accordance with Governmental Accounting Standards Board ("GASB") standards, the Water Board and the Authority are considered to be part of the same reporting entity (the "System") since they are fiscally interdependent. Accordingly, the accompanying combining financial statements for the System present the individual financial statements of the Water Board and the Authority as major funds. In addition, the accompanying combining financial statements present a total column, which represents the entity-wide financial statements of the System. Transactions and balances between the Water Board and the Authority are eliminated in the entity-wide combining financial statements.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

The accompanying financial statements of the System have been prepared on the accrual basis of accounting. Revenues are recognized when earned and expenses are recognized when incurred. Other significant accounting policies are:

Component Unit—The System is a component unit of The City. The System leases the water and sewer related capital assets from The City, which is responsible for the operations, maintenance and capital improvement of the System. The System reimburses The City for costs incurred for operations and maintenance and issues debt to pay for capital improvements.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

Investments and Cash Equivalents—Investments and cash equivalents consist principally of securities of the United States and its agencies, guaranteed investment contracts, forward purchase agreements, and the State of New York obligations. All investments are carried at fair value with the exception of money market funds that are carried at cost plus accrued interest. For purposes of the statement of cash flows and statement of net position, the System generally considers all highly-liquid debt instruments purchased with an original maturity of three months or less to be cash equivalents.

Restricted Assets—Net Position Classification—Proceeds from the issuance of debt and monies set aside for debt service and operation and maintenance of the System are classified as restricted based on the requirements of the applicable bond indentures in the net position classification.

Lien Sales and Residual Interest in Sold Liens—The City periodically sells tax liens secured by water and sewer rents and surcharges, for which the Water Board receives the applicable sale proceeds. At the time of sale, the Water Board recognizes the proceeds as operating revenue and removes the related receivables. The Water Board maintains a residual interest in the liens, which represents the amount estimated to be received by the Water Board if and when liens held by the purchasing trusts generate cash flows above the amounts needed by the trusts to pay their operating costs, bondholders, and satisfy reserve requirements.

Bond Discount and Premium—Bond discount and premium are amortized over the life of the related bond issue, using the effective yield method of amortization for bond discount and premium and reported as a component of long-term bonds and noted payable on the combining statements of net position (deficit).

Utility Plant—Utility plant acquired through purchase or internal construction is recorded at cost, net of retirements. It is the Water Board's policy to capitalize assets with a cost of $35,000 or more and a useful life of five years or longer. Contributed utility plant is recorded at its estimated historical cost based on appraisals or other methods when historical cost information is not available, net of depreciation. Depreciation is computed using the straight-line method based upon estimated useful lives, as follows:

Asset	Years
Buildings	40–50
Water supply and wastewater treatment systems	15–50
Water distribution and sewage collection systems	15–75
Equipment	5–35
Vehicles	10

Maintenance and repairs of property are charged to maintenance expense. Replacements and betterments are recorded as additions to utility plant. The System pays for certain improvements of assets that are not owned by The City or the System, as well as certain pollution remediation activities, through bond proceeds. These costs are shown as other operating expenses in the combining statements of revenues, expenses and changes in net position (deficit).

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

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 Water Board and upon customers' water and sewer usage or, in some cases, characteristics of customer properties. The System records unbilled revenue at year-end based on meter readings collected as of June 30. Operating expenses include, but are not limited to maintenance, repair, and operations of the System; administration costs of the Water Board and the Authority; and rental payments to The City, if requested.

Revenues Received in Advance—Revenues received in advance of the period to which they relate are unearned and recorded as revenue when earned. Customer account credit balances are reported as a current liability -service credits on customer accounts, and is not included in accounts receivable.

Unamortized Deferred Bond Refunding Costs—Deferred bond refunding costs represent the gains or losses incurred in advance and current bond refundings and are amortized over the lesser of the remaining life of the old debt or the life of the new debt.

Use of Estimates—The preparation of the combining financial statements in accordance with accounting principles generally accepted in the United States of America, requires management to make estimates and assumptions in determining the amounts of assets, deferred outflows of resources, liabilities, deferred inflows of resources, and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Pensions—Net pension liabilities are required to be recognized and disclosed using the accrual basis of accounting, regardless of the amount recognized as pension expense on the modified accrual basis of accounting. The Authority recognizes a net pension liability for the pension plan in which it participates, which represents the Authority's proportional share of excess total pension liability over the pension plan assets—actuarially calculated—of a cost-sharing multiple-employer plan, measured as of the fiscal year-end.

Changes in the net pension liability during the period are recorded as pension expense, or as deferred inflows of resources or deferred outflows of resources depending on the nature of the change, in the period incurred. Those changes in net pension liability that are recorded as deferred inflows of resources or deferred outflows of resources are amortized over the weighted average remaining service life of all participants in the qualified pension plan and recorded as a component of pension expense beginning with the period in which they are incurred. The change in the Authority's proportion of the collective net pension liability and collective deferred outflow of resources and deferred inflow of resources related to the pension since the prior measurement date is recognized in current reporting period over a closed period that is equal to the average of the expected remaining service lives of all employees provided with a pension through the pension plan.

For the contribution to the pension plan, the difference during the measurement period between the total amount of the Authority's contribution and the amount of the Authority's proportionate share of the total of such contributions from all employers and all nonemployee contributing entities is recognized in

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

the Authority's pension expense, beginning in the current reporting period, over a closed period that is equal to the average of the expected remaining service lives of all employees provided with pension through the Plan. The amount not recognized in pension expense is reported as deferred outflow of resources or deferred inflow of resources related to the pension.

Projected earnings on qualified pension plan investments are recognized as a component (reduction) of pension expense. Differences between projected and actual investment earnings are reported as deferred inflows of resources or deferred outflows of resources and amortized as a component of pension expense on a closed basis over a five-year period beginning with the period in which the difference occurred.

Changes in total pension liability arising from changes of benefit terms are required to be included in pension expense in the period the change is first reported in the net pension liability. The changes in the total pension liability resulting from (1) differences between expected and actual experience with regard to economic and demographic factors and (2) changes of assumptions regarding the expected future behavior of economic and demographic factors or other inputs are recognized as a deferred outflow of resources or a deferred inflow of resources related to the pension and included in the pension expense over a period equal to the average of the expected remaining service lives of all employees that are provided with benefits through the plan.

Recent Accounting Pronouncements—As a component unit of The City, the System implements new GASB standards in the same fiscal year as they are implemented by The City. The following are discussions of the standards requiring implementation in the current year and standards that may impact the System in future years.

In June 2015, GASB issued Statement No. 74, *Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans* ("GASB 74"). GASB 74 establishes financial reporting standards for state and local governmental other postemployment benefit ("OPEB") plans. The requirements of GASB 74 are effective for fiscal years beginning after June 15, 2016. The adoption of GASB 74 did not have an impact on the System's combining financial statements.

In June 2015, GASB issued Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions* ("GASB 75"). GASB 75 establishes accounting and financial reporting standards for OPEB that are provided to employees of state and local governmental employers. This Statement replaces the requirements of Statement No. 45, *Accounting and Financial Reporting by Employers for Postemployment Benefits Other Than Pensions.*

The adoption of GASB 75 resulted in the restatement of the System's fiscal year 2016 combining financial statements to reflect the reporting of deferred inflows of resources, deferred outflows of resources, OPEB liability, and the recognition of OPEB expense in accordance with the provisions of GASB 75. Net position as of July 1, 2016 was decreased by $459 thousand to reflecting the cumulative retrospective effect of the adoption of GASB 75. Net OPEB liability of $331 thousand and deferred inflows of resources of $8 thousand were reported at June 30, 2016. The Authority recognized aggregate OPEB expense of ($128) thousand for the fiscal year ended June 30, 2016. Refer to Note 14 for more information regarding the Authority's OPEB.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

In November 2016, GASB issued Statement No. 83, *Certain Asset Retirement Obligations*, ("GASB 83"). GASB 83 addresses accounting and financial reporting for certain asset retirement obligations. This statement establishes criteria for determining the timing and pattern of recognition of a liability and corresponding deferred outflow of resources for asset retirement obligations. The requirements of GASB 83 are effective for fiscal years beginning after June 15, 2018. The System has not completed the process of evaluating GASB 83. The System expects that GASB 83 will have an impact on its combining financial statements.

In January 2017, GASB issued Statement No. 84, *Fiduciary Activities*, ("GASB 84"). The objective of GASB 84 is to improve guidance regarding the identification of fiduciary activities for accounting and financial reporting purposes and how those activities should be reported. The requirements of GASB 84 are effective for fiscal years beginning after December 15, 2018. The System has not completed the process of evaluating GASB 84, but does not expect it to have an impact on the System's combining financial statements.

In March 2017, GASB issued Statement No. 85, *Omnibus 2017*, ("GASB 85"). The objective of GASB 85 is to address practice issues that have been identified during implementation and application of certain GASB statements. The requirements of GASB 85 are effective for fiscal years beginning after June 15, 2017. The adoption of GASB 85 did not have an impact on the System's combining financial statements.

In May 2017, GASB issued Statement No. 86, *Certain Debt Extinguishment Issues,* ("GASB 86"). The primary objective of GASB 86 is to improve consistency in accounting and financial reporting for in-substance defeasance of debt by providing guidance for transactions in which cash and other monetary assets are acquired with only existing resources – resources other than the proceeds of refunding debt. This statement also improves accounting and financial reporting for prepaid insurance on debt that is extinguished. The requirements of GASB 86 are effective for fiscal years beginning after June 15, 2017. The System has not completed the process of evaluating GASB 86, but does not expect it to have an impact on the System's combining financial statements.

In June 2017, GASB issued Statement No. 87, *Leases*, ("GASB 87"). The objective of GASB 87 is to improve accounting and financial reporting for leases by governments. This statement increases the usefulness of governments' financial statements by requiring recognition of certain lease assets and liabilities for leases that previously were classified as operating leases and recognized as inflows of resources or outflows of resources based on the payment provisions of the contract. It establishes a single model for lease accounting based on the foundational principle that leases are financings of the right to use an underlying asset. Under this statement, a lessee is required to recognize a lease liability and an intangible right-to-use lease asset, and a lessor is required to recognize a lease receivable and a deferred inflow of resources, thereby enhancing the relevance and consistency of information about governments' leasing activities. The requirements of GASB 87 are effective for fiscal years beginning after December 15, 2019. The System has not completed the process of evaluating GASB 87. The System expects that GASB 87 will have an impact on its combining financial statements.

3. UTILITY PLANT

The following is a summary of utility plant activity for the fiscal years ended June 30, 2017 and 2016 (in thousands):

	Balance at 06/30/15	Additions	Deletions	Balance at 06/30/16	Additions	Deletions	Balance at 06/30/17
Nondepreciable assets/							
Utility construction in progress	$ 4,558,225	$ 1,325,107	$ 656,150	$ 5,227,182	$ 1,444,117	$ 1,195,992	$ 5,475,307
Depreciable assets/							
Utility plant in service							
Buildings	34,877	-	-	34,877	59	-	34,936
Equipment	3,774,428	52,585	319	3,826,694	114,183	-	3,940,877
Vehicles	291,345	6,715	5,656	292,404	5,286	50,791	246,899
Water supply and wastewater treatment systems and water distribution and sewage collection systems	32,075,316	596,850	10,616	32,661,550	1,076,464	67,348	33,670,666
Total depreciable assets	36,175,966	656,150	16,591	36,815,525	1,195,992	118,139	37,893,378
Less accumulated depreciation for:							
Buildings	(23,822)	(1,318)	-	(25,140)	(1,315)	-	(26,455)
Equipment	(1,412,576)	(229,204)	(279)	(1,641,501)	(230,742)	-	(1,872,243)
Vehicles	(121,113)	(12,197)	(4,761)	(128,549)	(9,132)	(43,656)	(94,025)
Water supply and wastewater treatment systems and water distribution and sewage collection systems	(10,512,559)	(676,231)	(7,063)	(11,181,727)	(687,995)	(30,032)	(11,839,690)
Total accumulated depreciation	(12,070,070)	(918,950)	(12,103)	(12,976,917)	(929,184)	(73,688)	(13,832,413)
Total utility plant in service-net	24,105,896	(262,800)	4,488	23,838,608	266,808	44,451	24,060,965
Total capital assets- net	$ 28,664,121	$ 1,062,307	$ 660,638	$ 29,065,790	$ 1,710,925	$ 1,240,443	$ 29,536,272

Contributed Capital—The System received federal, State and other capital contributions of $6.2 million and $4.1 million in fiscal year 2017 and fiscal year 2016, respectively.

Westchester County makes semi-annual capital contributions to compensate the System for constructing a water conduit that provides treated water to the Westchester County.

4. DEPOSITS AND INVESTMENTS

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 creditworthiness of each bank. 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. Cash was comprised of bank deposits; there was no difference between the carrying amounts and bank balances as of June 30, 2017 and 2016.

At June 30, 2017 and 2016, the cash deposit balances were $246 million and $544 million, respectively. Of the 2017 cash deposits, $250 thousand was covered by federal depository insurance, and the remaining balance was collateralized except for $154 thousand that was uncollateralized and uninsured. Of the 2016 cash deposits, $750 thousand was covered by federal depository insurance, $376 million was collateralized and the remaining balance of $168 million was uncollateralized.

Cash and cash equivalents, including restricted and unrestricted balances were comprised of the following at June 30, 2017 and 2016 (in thousands):

	2017	2016
Restricted:		
Cash	$ 245,484	$ 543,959
Cash equivalents	1,366,258	1,070,400
Total restricted cash and cash equivalents	1,611,742	1,614,359
Unrestricted:		
Cash	-	356
Total cash and cash equivalents	$ 1,611,742	$ 1,614,715

Custodial Credit Risk – Custodial credit risk is the risk that in the event of the failure of a depository financial institution, the System may not be able to recover its deposits that are in the possession of an outside party. As of June 30, 2017 and 2016, the System had $154 thousand and $168 million of uninsured and uncollateralized deposits, respectively, that were exposed to custodial credit risk. The System's deposit policy, which is not otherwise subject to limitations under the Authority's Water and Sewer General Revenue Bond Resolution (the "Resolution"), is that deposits shall be held in a bank located in the State or national banking association having a capital surplus aggregating at least $100 million.

4. DEPOSITS AND INVESTMENTS (CONTINUED)

Investments—Pursuant to the Resolution and the Authority's investment guidelines, the Authority may generally invest in obligations of, or guaranteed by, the United States of America, certain highly rated obligations of the State of New York, certain certificates of deposit and similar instruments issued by highly rated commercial banks, certain highly rated corporate securities or commercial paper securities, certain repurchase agreements with highly rated institutions, certain investment agreements with highly rated institutions, certain highly rated money market funds, and other certain highly rated municipal obligations. All the accounts held by the Water Board are invested as permitted by the Water Board's investment guidelines and may include investments in obligations of, or guaranteed by, the United States of America and certain repurchase agreements with highly rated institutions. The System invests funds that are not immediately required for operations, debt service, or capital project expenses and funds that are held for debt service and operations and maintenance reserves.

The System had the following investments at June 30, 2017 and 2016 (in thousands):

	Fair Value	
Investments	**2017**	**2016**
U.S. Agencies securities	$ 1,680,184	$ 1,070,400
U.S. Treasury securities	576,560	329,442
New York State instrumentalities	84,419	96,620
Guaranteed Investment Contracts	104,443	112,828
Forward Purchase Agreements	34,119	46,397
Total investments including cash equivalents	2,479,725	1,655,687
Less amounts reported as cash equivalents	(1,366,258)	(1,070,400)
Total Investments	$ 1,113,467	$ 585,287

4. DEPOSITS AND INVESTMENTS (CONTINUED)

Fair Value Hierarchy—The System categorizes its fair value measurements into the fair value hierarchy established by generally accepted accounting principles. The System had the following recurring fair value measurements as of June 30, 2017 and 2016 (in thousands):

		2017 Fair Value Measurement		
	June 30, 2017	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Investment by fair value level				
Fixed income investments				
U.S. Treasury securities	$ 576,560	$ -	$ 576,560	$ -
U.S. Agencies securities	1,680,184	-	1,680,184	-
New York State instrumentalities	84,419	-	84,419	-
Guaranteed Investment Contracts	104,443	-	104,443	-
Forward Purchase Agreements	34,119	-	34,119	-
Total investments by fair value level	$ 2,479,725	$ -	$ 2,479,725	$ -
Hedging derivative instruments				
Interest rate swap (liability)	$ (100,438)	$ -	$ (100,438)	$ -
Total hedging derivative instruments	$ (100,438)	$ -	$ (100,438)	$ -

4. DEPOSITS AND INVESTMENTS (CONTINUED)

		2016 Fair Value Measurement		
	June 30, 2016	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Investment by Fair Value Level				
Fixed income investments				
U.S. Treasury securities	$ 329,442	$ -	$ 329,442	$ -
U.S. Agencies securities	1,070,400	-	1,070,400	-
New York State instrumentalities	96,620	-	96,620	-
Guaranteed Investment Contracts	112,828	-	112,828	-
Forward Purchase Agreements	46,397	-	46,397	-
Total investments by fair value level	$ 1,655,687	$ -	$ 1,655,687	$ -
Hedging Derivative Instruments				
Interest rate swap (liability)	$ 142,802	$ -	$ 142,802	$ -
Total hedging derivative instruments	$ 142,802	$ -	$ 142,802	$ -

Fixed income investments and derivative instruments classified in Level 2 of the fair value hierarchy are valued using matrix pricing techniques.

Credit Risk—Both the Water Board and the Authority have Board-approved investment guidelines and policies in place designed to protect principal by limiting credit risk. This is accomplished through ratings, collateral, and diversification requirements that vary according to the type of investment. Investments held by the System at June 30, 2017 and 2016 include obligations of, or guaranteed by, the United States of America, the Federal Home Loan Mortgage Corporation, the Federal Home Loan Bank, the Federal National Mortgage Association, the Federal Agriculture Mortgage Corporation, Resolution Funding Corporation, Freddie Mac and the Federal Farm Credit System. Also held by the Authority are direct obligations of the State of New York, or direct obligations of any agency or public authority thereof, which are rated at the time of purchase in one of the two highest rating categories. In addition, the Authority has entered into investment agreements and guaranteed investment contracts with financial institutions whose 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 in one of the two highest rating categories for comparable types of obligations by each rating agency at the time such agreement or contract was entered into.

Interest Rate Risk—The System has no formal policy relating to interest rate risk. Approximately 14.0% of the System's investments are agreements to purchase securities or Guaranteed Investment Contracts ("GICs") with guaranteed fixed rates of return. The par value of the agreements to purchase

4. DEPOSITS AND INVESTMENTS (CONTINUED)

securities and interest earned are held as cash on June 30, 2017. The fair value of the agreements to purchase securities are themselves susceptible to changes in market rates because of the interest rates.

Segmented time distribution on investments and cash equivalents as of June 30, 2017 (in thousands):

Maturity Date		Fair value amount
Under 6 months	$	1,812,269
Over 6 months to 1 year		39,265
Over 1 year to 3 years		106,479
Over 3 years and beyond		469,188
Over 3 years and beyond (GIC and Forward Purchase Agreement adjustments) [1]		52,524
Total	$	2,479,725

[1] Includes the fair value of $34,119 related to Forward Purchase Agreements and $18,405 related to a GIC agreement.

Custodial Credit Risk—For an investment, custodial credit risk is the risk that, in the event of the failure of the custodian, the System may not be able to recover the value of its investment or collateral securities that are in the possession of an outside party. Investment securities are exposed to custodial credit risk if the securities are uninsured, are not registered in the name of the System, and are held by either the counterparty or the counterparty's trust department or agent but not in the name of the System. All investments held by the Water Board's custodian bank were registered in the Water Board's name and therefore were not subjected to custodial credit risk. All of the Authority's investments were held by the Trustee in the Trustee's name pursuant to our Trust Agreement, except for the GICs.

As of June 30, 2017 and 2016, the Authority had $2.1 billion and $1.4 billion of investments, respectively, that were registered in the name of the Trustee pursuant to our Trust Agreement. The types and amounts of investments are listed in the table on page 32, except for the Authority's GIC of $104.4 million and $112.8 million in 2017 and 2016, respectively, and the Water Board's U.S. Treasury securities of $237.3 million and $130.3 million in 2017 and 2016, respectively.

5. DERIVATIVE INSTRUMENTS

As of June 30, 2017, the Authority had the following (in thousands):

Type	Notional Amount	Effective Date	Maturity Date	Terms	Fair Value	Counterparty Credit Rating (Moody's/S&P/Fitch)
Hedging Derivatives						
Synthetic fixed rate	$ 240,600	10/24/07	6/15/36	pay 3.439% receive 67% of 1-month LIBOR	$ (60,263)	Aa2/AA-/NR
Synthetic fixed rate	160,400	10/24/07	6/15/36	pay 3.439% receive 67% of 1-month LIBOR	(40,175)	A1/A+/A+

LIBOR: London Interbank Offered Rate Index

Hedging Derivative Instruments— The Authority executed two interest rate exchange agreements (the "synthetic fixed rate agreements"), effective October 24, 2007, in conjunction with its sale of $401 million of Adjustable Rate Fiscal 2008 Series BB Second Resolution Bonds on October 24, 2007. Under these agreements, the Authority pays a fixed interest rate of 3.439% in exchange for a floating rate based on 67% of one-month LIBOR on the combined notional amount of $401 million. The agreements are with two separate counter-parties: one agreement with Goldman Sachs Mitsui Marine Derivative Products in the amount of $241 million and the second agreement with Bank of America in the amount of $160 million. These agreements allowed the Authority to achieve a fixed rate cost lower than the cost of conventional fixed rate debt at the time of issuance. The Authority's obligations under these interest rate exchange agreements are payable on a parity with the related Second Resolution revenue bonds.

Credit Risk— The risk that the counterparty (or its guarantor) will default under its agreement and the Authority would be left with unhedged variable rate debt. To continue to be hedged, the Authority may have to pay another entity to assume the position of the defaulting counterparty while not receiving an offsetting payment from the defaulting counterparty (full or in part).The Authority seeks to limit credit risk by contracting with highly rated counterparties or requiring highly rated guarantees of the counterparty's obligations. In the event that a counterparty loses its high rating, the Authority has built in two forms of protection into its swap agreements. First, the Authority has required the counterparty to post collateral if its ratings fall below "Aa3" by Moody's and "AA-" by Standard and Poor's and the mark-to-market in the Authority's favor exceeds specified threshold amounts. Second, the Authority has the right to terminate the Interest Rate Exchange Agreement if the counterparty is downgraded below "A3" and "A-" by Moody's and S&P, respectively. In addition, the Authority monitors the credit ratings and overall financial condition of its counterparties and may exercise its right to assign the agreement to another counterparty if necessary, in its judgment, to mitigate credit risk, even in the absence of a significant credit rating downgrade.

5. DERIVATIVE INSTRUMENTS (CONTINUED)

Termination Risk— The counterparties can terminate the agreements upon the occurrence of certain events, when the mark-to-market value is such that the Authority would owe a termination payment to the counterparty. The counterparties may terminate the agreement only upon the occurrence of certain events, such as payment defaults by the Authority, other defaults which remain uncured for 30 days after notice, bankruptcy or insolvency of the Authority (or similar events), or a downgrade of the Authority's credit rating below Baa2 and BBB by Moody's and Standard & Poor's, respectively.

Basis Risk— Basis risk is the risk of a mismatch between two floating rates. For example, the amount the Authority receives under an Interest Rate Exchange Agreement may be lower than the amount the Authority is required to pay on the bonds associated with the transaction, which would require the Authority to make up the shortfall.

Interest Rate Risk— Interest rate risk is the risk that changes in long-term interest rates will adversely affect the mark-to-market values of the Authority's swap instruments which may result in termination payments.

Financial Statements Effect—The market value of derivatives at June 30, 2017 and June 30, 2016 was negative $100 million and negative $143 million, respectively. The Authority does not currently own investment derivatives.

6. LEASE AGREEMENT

The Water Board is party to a long-term lease (the "Lease") with The City, which transfers the water and sewer related property to the Water 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 provision for such payment has 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 that are attributable to the leased property, net of the amount of any federal, the State, or other operating grants received by The City and

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 that are not paid or reimbursed from any other source.

In addition to the payments described above, the Water Board pays rent to The City, if requested, 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.

6. LEASE AGREEMENT (CONTINUED)

A summary of operation and maintenance and rental expenses for the years ended June 30, is as follows (in thousands):

	2017	2016
Water supply, treatment, transmission and distribution	$ 508,682	$ 490,124
Sewer collection and treatment systems	602,400	412,117
City agency support cost	54,981	58,232
Fringe benefits	210,724	193,361
Judgments and claims	8,659	5,784
Operation and maintenance	1,385,446	1,159,618
Rental payments to The City	-	137,676
Total operations maintenance and rental payments	$ 1,385,446	$ 1,297,294

7. PAYABLE TO AND RECEIVABLE FROM THE CITY

As of June 30, 2017 and 2016, all utility construction and other projects financed by Authority debt and recorded by the System, which have not been reimbursed to The City, are recorded as a payable to The City. The Authority had a payable to The City of $525 million and $498 million, respectively, net of the amount of State or federal and other capital grants recognized by The City.

As of June 30, 2017 and 2016, the Water Board had receivables due from The City of $34.5 million and $194.4 million, respectively. The 2017 receivable from The City is a result of an over payment of $34.5 million for operations and maintenance expense. The 2016 receivable from The City is a result of an over payment of $194.4 million for operations and maintenance expense.

8. OTHER OPERATING EXPENSES

A summary of other operating expenses for the year ended June 30, is as follows (in thousands):

	2017	2016
Pollution remediation	$ 7,062	$ (36,277)
Payments for watershed improvements	11,208	25,968
Program expense	37,846	26,855
Total other operating expenses	$ 56,116	$ 16,546

8. OTHER OPERATING EXPENSES (CONTINUED)

The City's DEP manages both the System's operations and its capital program, and it also manages other projects with long-term benefits to the System, which do not result in capital assets of the System and that are paid for using the Authority bond proceeds. Such long-term benefit projects include payment for environmental protection, related improvement in the watershed areas, and pollution remediation projects throughout the System. The System has estimated these amounts based on the current value of outlays expected to be incurred for pollution remediation, which it is currently obligated to perform. Actual future outlays will differ from the estimated amounts if the prices or techniques for remediation measures change or differ from the estimates. In fiscal year 2017, two projects were completed. The estimated amount was higher than the actual expense.

In fiscal year 2017, The System incurred program expenses of $37.8 million.

9. SHORT-TERM DEBT

In fiscal year 2017 and 2016, the changes in short-term debt were as follows (in thousands):

	Balance at June 30, 2015	Additions	Deletions	Balance at June 30, 2016	Additions	Deletions	Balance at June 30, 2017
Commercial paper [1]	$ 600,000	$ 200,000	$ 600,000	$ 200,000	$ -	$ 200,000	$ -
Total short-term payable	$ 600,000	$ 200,000	$ 600,000	$ 200,000	$ -	$ 200,000	$ -

Commercial paper are used to pay for construction costs in advance of long-term bond financing.

10. LONG-TERM DEBT

In fiscal years 2017 and 2016, the long-term debt was as follows (in thousands):

Bonds/BAN's Payable	Balance at June 30, 2016	Additions	Deletions	Balance at June 30, 2017
First resolution bonds	$ 3,261,416	$ -	$ 831,460	$ 2,429,956
Second resolution bonds	25,935,752	2,833,663	1,528,348	27,241,067
Second resolution BAN's	318,828	648,559	608,012	359,375
Total before premium and discounts	29,515,996	3,482,222	2,967,820	30,030,398
Premium/(discounts) - net	1,113,359	223,003	100,010	1,236,352
Total debt	30,629,355	3,705,225	3,067,830	31,266,750
Due within one year - bonds	378,028			391,031
Due within one year - BAN's	-			241,890
Total long-term debt	$ 30,251,327			$ 30,633,829

Bonds/BAN's Payable	Balance at June 30, 2015	Additions	Deletions	Balance at June 30, 2016
First resolution bonds	$ 4,034,651	$ 196,585	$ 969,820	$ 3,261,416
Second resolution bonds	25,337,971	3,075,945	2,159,336	26,254,580
Total before premium and discounts	29,372,622	3,272,530	3,129,156	29,515,996
Premium/(discounts) - net	960,721	234,261	81,623	1,113,359
Total debt	30,333,343	3,506,791	3,210,779	30,629,355
Due within one year	391,462			378,028
Total long-term debt	$ 29,941,881			$ 30,251,327

As of June 30, 2017, the interest rates on the Authority's outstanding First and Second Resolution bonds ranged from a low of 0.65%, on a direct loan from Environmental Facilities Corporation ("EFC"), to a high of 6.49% on certain outstanding Build America Bonds prior to interest subsidies.

10. LONG-TERM DEBT (CONTINUED)

The debt program of the Authority includes interim financing instruments such as commercial paper and BANs, and long-term debt issued to the public and interest-subsidized bonds issued through EFC. While historically commercial paper program was the main source of short-term financing to reimburse The City for payments made for water and sewer projects, in fiscal year 2017, the Authority primarily relied on BANs and long-term bonds.

When it is time to retire interim financing instruments, the Authority directly issues long-term debt in the public market or to EFC to retire the BANs. The Authority also periodically issues refunding bonds to refinance higher-coupon debt and defeases bonds from revenues. With respect to all of the Authority debt, the Water 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 of debt are specific obligations of the Authority payable solely from and secured by a pledge of and lien on the gross revenue of the System.

In case of the funding received through draws on BANs, each project was tracked for spending, and funding was received from EFC after submission of required documentation.

The total BANs outstanding, with maturities greater than one year, as of June 30, 2017 were $117.5 million.

During fiscal year 2017, as further detailed below, the Authority issued $1.1 billion of bonds to refund $1.1 billion of outstanding bonds. These refundings resulted in an accounting gain of $3.8 million. The Authority reduced its aggregate debt service for principal and interest by $204.3 million and obtained an economic benefit (present value savings) of $158 million.

On December 15, 2017, the Authority issued $416 million of new money and refunding Second Resolution bonds, 2017 CC. For the purpose of restructuring debt, bonds refunded a portions of outstanding Second Resolution bonds, 2012 DD and 2014 CC. The Authority increased its overall debt service by $10.1 million and obtained an economic benefit of $6.4 million.

On March 23, 2017, the Authority issued $392 million of refunding tax-exempt fixed rate Second Resolution bonds, 2017 Series EE. The bonds refunded all of the Authority's Second Resolution bonds, 2007 Series DD and 2008 Series AA and a portion of outstanding First Resolution bonds, 2008 Series A. The Authority reduced its overall debt service by $96.9 million. As a result, the Authority obtained an economic gain of $59.1 million.

On April 13, 2017, the Authority issued $1.2 billion of new money and refunding Second Resolution bonds directly to EFC, 2017 Series 3, 4 and 5. A portion of the 2017 Series 3 bonds and all of the 2017 Series 5 bonds refunded all or portions of the Authority's Second Resolution bonds 2007 Series 1, 2 and 3 and 2005 Series 2, 2006 Series 1 and 2. The Authority reduced its annual debt service by $118 million. As a result, the Authority obtained an economic gain of $92.7 million.

During fiscal year 2017, the Authority legally defeased $782 million of outstanding bonds using current revenue. This resulted in an accounting gain of $4.8 million that was included in interest expense and a gross debt service savings of $1.5 billion.

10. LONG-TERM DEBT (CONTINUED)

During fiscal year 2016, the Authority issued $951 million of bonds to refund $1.1 billion of outstanding bonds. These refundings resulted in an accounting gain of $77 thousand. The Authority reduced its aggregate debt service for principal and interest by $274 million and obtained an economic benefit (present value savings) of $199 million.

During fiscal year 2016, the Authority legally defeased $722 million of outstanding bonds using current revenue. This resulted in an accounting loss of $23.0 million that is included in interest expense and a gross debt service savings of $1.4 billion.

The Authority has legally defeased cumulatively $23.4 billion and $22.6 billion of outstanding bonds as of June 30, 2017 and 2016, respectively, that had been issued in the public market and to EFC 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 securities that were placed in the irrevocable escrow account. Accordingly, the escrow account assets and liabilities for the defeased bonds are not included in the System's combining financial statements. As of June 30, 2017 and 2016, $20 billion and $19 billion of the Authority's defeased bonds, respectively, have been retired using the assets of the escrow accounts.

Debt service requirements to maturity, including amounts relating to BANs with maturities greater than one year at June 30, 2017 are as follows (in thousands):

June 30	Principal	Interest [1]	Total
2018	$ 632,921	$ 1,357,723	$ 1,990,644
2019	427,149	1,383,040	1,810,189
2020	572,766	1,367,152	1,939,918
2021	488,721	1,353,213	1,841,934
2022	510,265	1,333,577	1,843,842
2023-2027	3,064,419	6,288,487	9,352,906
2028-2032	3,696,714	5,525,905	9,222,619
2033-2037	4,538,025	4,581,394	9,119,419
2038-2042	6,299,025	3,405,011	9,704,036
2043-2047	8,158,269	1,502,910	9,661,179
2048-2052	1,636,360	141,755	1,778,115
2053-2057	5,763	250	6,013
	$ 30,030,397	$ 28,240,417	$ 58,270,814

[1]Includes projected interest expense for variable rate bonds at 3.5% for fiscal year 2018 and 4.25% for fiscal year 2019 and thereafter. Variable rate bonds are remarketed daily or weekly, and interest rates are determined by the market on the day of sale.

11. RESTRICTED ASSETS

As of June 30, 2017 and 2016, certain cash, investments, and accrued interest of the System are restricted as follows (in thousands):

		2017		2016
Water Board				
Operation and maintenance reserve fund	$	237,746	$	250,447
Local water fund		10,786		12,509
Subtotal -The Water Board		248,532		262,956
Authority				
Revenue fund		1,202,036		1,008,722
Debt service reserve fund		415,754		588,449
Construction fund		474,239		140,376
Ecsrow account		384,648		199,143
Subtotal -The Authority		2,476,677		1,936,690
Total restricted assets	$	2,725,209	$	2,199,646

The operation and maintenance reserve fund is established as a depository to hold the operations and maintenance reserve as required by the Resolution. At June 30 of each year, the reserve fund is required to hold one-sixth of the operating expenses as set forth in the following year's annual budget. It is funded through the cash receipts of the Water Board. The local water fund is established as the account to which all revenues are deposited. Its assets are subject to the payment priority set forth in the Resolution.

The revenue fund is established as a depository to fund the debt service, the Authority's expenses, debt service reserve, and escrow funds. It is funded through cash transfers from the Water Board.

The debt service reserve fund is established as a depository to hold the First Resolution Bond maximum annual debt service requirement for the next 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. On or prior to June 30, the balances in the debt service fund are transferred to 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 commercial paper, bond, and note sales. The escrow account is established as a depository to refund debt in future years. It is funded through bond proceeds or the revenue fund.

12. COMMITMENTS AND CONTINGENCIES

Construction—The System has contractual commitments of approximately $6.5 billion and $5.3 billion at June 30, 2017 and 2016, respectively, for water and sewer projects.

Risk Financing Activities—The System is self-insured and carries no commercial or insurance policies other than directors and officers insurance for the Authority. Any claims made against the System are resolved through The City's legal support, and the amounts of the maximum liability for such judgments are described in the claims and litigation section below. The System is subject to claims for construction delays, property damage, personal injury, and judgments related to delays in construction deadlines under consent agreements.

Claims and Litigation—In accordance with the Lease, the Water 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 prior year's 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 of the System. In addition, The City has agreed, subject to certain conditions, to indemnify the Authority, the Water 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, 2017, the potential future liability attributable to the System for claims outstanding against The City was estimated to be $315 million. This amount is included in the estimated liability for unsettled claims, which is reported in The City's statement of net position (deficit). The potential future liability is The City's best estimate based on available information. The estimate maybe 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 amount earned on all non-purpose obligations over the amount that would have been earned if the gross proceeds of the issue were invested at a rate equal to the yield on the issue, together with any earnings attributable to such excess. Construction funds, debt service funds, or any other funds or accounts funded with proceeds of such bonds, including earnings, or pledged to or expected to be used to pay interest on such bonds are subject to this requirement. Payment is to be made after the end of the fifth bond year and after every fifth bond year thereafter and within 60 days after retirement of the bonds. During fiscal years 2017 and 2016, the System paid $4 million and $1 million, respectively, in arbitrage rebates. At June 30, 2017 and 2016, the Authority had a liability of $11 million and $7 million, respectively. These amounts are included in accrued payable expense in the combining statements of net position (deficit).

13. PENSION PLANS

General information about the Pension Plan

Plan Description—The Authority's eligible employees are provided with pension benefits through New York City Employee Retirement System Qualified Pension Plan ("NYCERS QPP" or "Pension Plan"). The Pension Plan is a cost-sharing, multiple-employer defined benefit pension plan administered by NYCERS.

The Pension Plan functions in accordance with existing State statutes and City laws which are the basis by which benefit terms and the Authority's and its members' contribution requirements are established and amended. NYCERS issues a publicly-available financial report that can be obtained at www.nycers.org.

Benefits Provided—The Pension Plan provides pension benefits to retired employees generally based on the salary, length of service, member contributions, and membership tier ("Tier"). For certain members, voluntary member contributions also impact pension benefits provided. In addition, the Pension Plan provides automatic cost-of-living-adjustments ("COLA") and other supplemental pension benefits to certain retirees and beneficiaries. Subject to certain conditions, members become fully vested as to benefits upon the completion of five years of service for Tier I to Tier IV and ten years of service for Tier VI. Upon termination of employment before retirement, certain members are entitled to refunds of their own contributions, including accumulated interest, less any outstanding loan balances. In the event of disability during employment, participants may receive retirement allowances based on satisfaction of certain service requirements and other provisions. The Pension Plan also provides death benefits.

The State Constitution provides that pension rights of public employees are contractual and shall not be diminished or impaired. In 1973, 1976, 1983, and 2012, significant amendments made to the State Retirement and Social Security Law ("RSSL") modified certain benefits for employees joining the Pension Plan on or after the effective date of such amendments, creating membership tiers. Currently there are several Tiers, referred to as Tier I, Tier II, Tier III, Tier IV, and Tier VI. Members are assigned a Tier based on membership date. Chapter 18 of the Laws of 2012 (Chapter 18/12) amended the retirement benefits of public employees who establish membership in the Pension Plan on or after April 1, 2012. Chapter 18/12 is commonly referred to as Tier VI. Tier VI is expected to reduce future employer pension contributions.

Certain members of Tier I and Tier II of the NYCERS QPP have the right to make voluntary excess contributions, which are supplemental voluntary contributions. Members can elect to direct these contributions to an investment program under which such accumulated contributions are credited with interest at rates set by statute ("Statutory Rates"). The Authority does not have any Tier I, Tier II, or Tier III members.

Contributions and Funding Policy—Contribution requirements of participating employers and active members are determined in accordance with State statutes and City laws and are generally funded within the appropriate fiscal year. Effective with fiscal year 2006, employer contributions are actuarially determined under the One-Year Lag Methodology ("OYLM"). Under OYLM, the actuarial valuation date is used for calculating the employer contributions for the second following fiscal year. For example, the June 30, 2015 actuarial valuation was used for determining the fiscal year 2017 statutory contributions. Member contributions vary by class.

13. PENSION PLANS (CONTINUED)

In general, Tier III and Tier IV members make basic contributions of 3.0% of salary regardless of age at membership. Effective October 1, 2000, in accordance with Chapter 126 of the Laws of 2000, Tier III and Tier IV members are not required to make any contributions after the 10th anniversary of their membership date or completion of ten years of credited service, whichever is earlier. Tier VI members who joined between April 1, 2012 and March 31, 2013 contribute 3% of salary. Beginning April 1, 2013, when Tier VI took effect, joining members contribute between 3.0% and 6.0% of salary, depending on their salary level.

Employer contributions are determined annually to be an amount that, together with member contributions and investment income, provides for the Pension Plan assets to be sufficient to pay benefits when due. The aggregate statutory contribution due to NYCERS from all participating employers for fiscal years 2017 and 2016 was $3.3 billion and $3.4 billion, respectively and the amount of the Authority's contribution to the Pension Plan for such fiscal years 2017 and 2016 was $136 thousand and $170 thousand, respectively.

Information on the Employer's Proportionate Share of the Collective Net Pension Liability

The Authority's net pension liabilities reported at June 30, 2017 and 2016 were measured as of those fiscal year-end dates. The total pension liability used to calculate those net pension liabilities were determined by actuarial valuations as of June 30, 2015 and June 30, 2014, respectively, based on the OYLM described above, and rolled forward to the respective fiscal year-end measurement dates.

Information about the Authority net position and additions to and deductions from NYCERS fiduciary net position has been determined on the same basis as that reported by NYCERS QPP. For this purpose, benefits and refunds are recognized when due and payable in accordance with the terms of the respective qualified pension plan, and investments are reported at fair value.

13. PENSION PLANS (CONTINUED)

Actuarial Assumptions—Measurement of the total net pension liability, on which the net pension liability is based, requires the use of assumptions about numerous future events that affect the benefit payments that will be made to employees in retirement. The following table provides a brief description of the significant assumptions used in the June 30, 2015 actuarial valuation to determine the fiscal year 2017 Authority contributions:

Actuarial Assumptions used for determining final fiscal year 2017 Authority's Contributions

Item	Final Fiscal Year 2017 Authority's Contributuions[1]
Valuation Date	June 30, 2015 (Lag)
Assumed Rate of Return on Investment[2]	7.0% per annum, net of investment expense. Actual return for variable funds.
Post-Retirement Mortality	Tables adopted by the Boards of Trustee during fiscal year 2017[3].
Active Service:	
Withdrawal, Death, Disability	Tables adopted by the Boards of Trustee during fiscal year 2012[4].
Retirement	Tables adopted by the Boards of Trustee during fiscal year 2012[4].
World Trade Center Benefit	Estimates of certain obligations.
Salary Increases[2]	Tables adopted by the Boards of Trustee during fiscal year 2012[4] In general, Merit and Promotion Increases plus assumed General Wage Increase of 3.0% per year.
Assumed Cost-of-Living Adjustments[2]	1.5% per year for Tier I, Tier II, Tier IV and certain Tier III and Tier VI retirees. 2.5% per year for certain Tier III and Tier VI retirees.
Liability Loads	Estimates of certain obligations.

[1] Based on actuarial assumptions and methods proposed by the Actuary during fiscal year 2012 adopted by the Boards of Trustees and enacted into law as Chapter 3/13 with revisions proposed by the Actuary and adopted by the Boards of Trustees in fiscal year 2017

[2] Developed using a long-term Customer Price Inflation ("CPI") assumption of 2.5% per year.

[3] See December 2015 Memoranda to the Boards of Trustees.

13. PENSION PLANS (CONTINUED)

[4] See the Reports entitled "Proposed Changes in Actuarial Assumptions and Methods for Determining Employer Contributions for Fiscal Years Beginning on and After July 1, 2011" dated February 10, 2012 (the "Silver Books").

In accordance with the Administrative Code of The City of New York and with appropriate practice, the NYCERS Board of Trustees of the actuarially-funded the Pension Plan is to periodically review and adopt certain actuarial assumptions as proposed by the Actuary for use in the determination of Employer Contributions, which are also generally used to determine the total pension liability, as applicable. Based, in part, upon a review of the then two most recent experience studies, the Actuary issued reports for the Pension Plan proposing changes in actuarial assumptions and methods for fiscal years beginning on and after July 1, 2011 (February 2012 Reports). Where required, the Board of Trustees of NYCERS adopted those changes to actuarial assumptions that required the NYCERS Board of Trustees approval. The State Legislature and the Governor enacted Chapter 3/13 to provide for those changes to the actuarial assumptions and methods that require legislation, including the actuarial interest rate ("AIR") assumption of 7.0% per annum, net of investment expenses.

The long-term expected rate of return was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of the Pension Plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected real rates of return by the target asset allocation percentage and by adding expected inflation. The target allocation and best estimates of arithmetic real rates of return for each major asset class are summarized in the following table:

Asset Class	Target Asset Allocation	Long-Term Expected Real Rates of Return
U.S. Public Market Equities	29.00%	5.70%
International Public Market Equities	13.00%	6.10%
Emerging Public Market Equities	7.00%	7.60%
Private Market Equities	7.00%	8.10%
Fixed Income (Core, TIPS, HY, Opportunistic, Convertibles)	33.00%	3.00%
Alternatives (Real Assets, Headge Funds)	11.00%	4.70%
Total	100.00%	

Discount Rate—The discount rate used to measure the total pension liability of the Pension Plan as of June 30, 2017 and 2016 was 3.13% and 2.71% per annum. The projection of cash flows used to determine the discount rate assumed that employee contributions will be made at the rates applicable to the current Tier for each member and that employer contributions will be made based on rates determined by the actuary. Based on those assumptions, the Pension Plan fiduciary net position was projected to be available to make all projected future benefit payments of current active and non-active Pension Plan members. Therefore, the long-term expected rate of return on the Pension Plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

13. PENSION PLANS (CONTINUED)

Sensitivity of the Authority's Proportionate Share of the Net Pension Liability to Changes in the Discount Rate—The following table presents the Authority's proportionate share of the net pension liability using the discount rate of 7.0%, as well as what the Authority's proportionate share of the net pension liability would be if it were calculated using a discount rate that is one-percentage point lower (6.0%) or one-percentage point higher (8.0%) than the current rate (in thousands):

Sensitivity Analysis

	Net Pension Liability as of June 30, 2017		
	1% Decrease (6.0%)	Current Discount Rate (7.0%)	1% Increase (8.0%)
Net Pension Liability	$1,201	$828	$506

Pension Liabilities, Pension Expense, and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions.

Pension Liability—At June 30, 2017 and 2016, the Authority reported a liability of $828 thousand and $1.2 million, respectively, for its proportionate share of the net pension liability. The Authority's portion of the net pension liability was based on projection of the Authority's long-term share of contributions to the Pension Plan relative to the projected contributions of all participating City governments and their component units, actuarially determined. At June 30, 2017 and 2016, the Authority's proportion was 0.004% and 0.005% respectively.

Pension Expense—For the years ended June 30, 2017 and 2016, the Authority recognized pension expense of $136.1 thousand and $170.6 thousand, respectively.

13. PENSION PLANS (CONTINUED)

Deferred Outflows and Inflows of Resources—At June 30, 2017, the Authority reported total deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

	Deferred Outflows of Resources	Deferred Inflows of Resources
Difference between expected and actual experience	$ -	$ 22,164
Changes of assumptions	40,948	-
Net difference between projected and actual earnings on pension plan investments	-	33,941
Changes in proportion and difference between the Authority's contributions and proportionate share of contributions	(224,860)	(45,142)
The Authority's contributions subsequent to the measurement date	-	-
Total	$ (183,912)	$ 10,963

Amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions at June 30, 2016 will be recognized in pension expense as follows :

Year ended June 30:	
2017	$ 39,069
2018	39,069
2019	39,069
2020	39,069
2021	39,069
2022	23,442

14. OTHER POST-EMPLOYMENT BENEFITS

Plan Description—The Authority's Other Postemployment Benefits Plan ("OPEB Plan") is a single-employer defined benefit plan administered by the New York City Office of Labor Relations. The plan provides certain health and related benefits to eligible retirees and their beneficiaries/dependents of the New York City Municipal Water Finance Authority in accordance with GASB Statement No. 75, ("GASB 75") *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions*.

The OPEB Plan consists of three programs: (1) the New York City Health Benefits Program, (2) Welfare Fund Program, and (3) Medicare Part B Program. The Authority's policy is to follow the eligibility criteria applicable to retirees of the City and to provide benefits substantially the same as those provided to the City retirees and eligible beneficiaries/dependents.

14. OTHER POST-EMPLOYMENT BENEFITS (CONTINUED)

There are three classes of employees: active, inactive and retirees. The following presents a summary of the Authority's census data used in the June 30, 2016 and June 30, 2015 OPEB actuarial valuations:

Group	June 30, 2016	June 30, 2015
Active	10	12
Inactive	2	2
Retired	4	4
Total	16	18

Funding Policy—The Authority is not required to provide funding for the OPEB Plan, other than the pay-as-you-go amount necessary to provide current benefits to retirees and eligible beneficiaries/dependents. For the years ended June 30, 2017 and 2016, the Authority had four retirees and made contributions of $14.9 thousand and $17.0 thousand, respectively. Members are not required to contribute; although, retirees may elect basic health insurance programs and/or optional coverage that requires contributions. Plan retiree participants who opt for other basic or enhanced coverage must contribute 100% of the incremental costs above the premiums for the benchmark plan. The OPEB Plan also reimburses covered employees for 100% of the Medicare Part B premium rate applicable to a given year, and there is no retiree contribution to the welfare fund (the "Welfare Fund") that covers retirees for various health care benefits not provided through the basic coverage.

Annual OPEB Cost and Net OPEB Obligation—The Authority's annual OPEB cost is calculated based on the annual expense ("Expense"), an amount that was actuarially determined in accordance with the parameters of GASB 75. Actuarial valuations involve estimates and assumptions about the probability of events far into the future. The entry age actuarial cost method was used in the actuarial valuation prepared as of June 30, 2016 for the fiscal year ending June 30, 2017, which was the basis for the fiscal year 2017 Expense calculation. Under this method, as used in this OPEB Plan valuation, the actuarial present value ("APV") of benefits ("APVB") of each individual included in actuarial valuation is allocated on a level basis over the earnings of the individual between entry age and assumed exit age(s). The employer portion of this APVB allocated to the valuation year is the employer normal cost. The portion of this APVB that is not provided for on the valuation date by the APV of future employer normal cost or future member contributions is the total OPEB Plan liability. The excess of the total OPEB Plan liability over the plan fiduciary net position, which represents the assets of the plan, is the net OPEB Plan liability.

All changes in the net OPEB liability as of June 30, 2017 and June 30, 2016 are being amortized over the future working lifetime of all plan participants for purposes of calculating the expense except for the amount of change in plan assets, which would be amortized over a 5-year period using level-dollar amortization. This plan however, is not assumed to have any assets.

14. OTHER POST-EMPLOYMENT BENEFITS (CONTINUED)

Amounts reported as deferred outflows of resources and deferred inflows of resources related to OPEB Plan will be recognized in OPEB Expense as follows:

Year Ended June 30,	Amount	
2017	$	35
2018		35
2019		35
2020		35
2021		35
Thereafter		150

Total OPEB Liability—The Authority's total OPEB Plan obligation of $1.4 million was measured as of June 30, 2017, and was determined by an actuarial valuation as of that date.

The following table shows changes in the Authority's net OPEB Plan liability for fiscal years 2017 and 2016 (in thousands):

		2017		**2016**
Balance at beginning of the year	$	1,601	$	1,447
Changes for the year:				
Service cost		101		136
Interest		43		43
Difference between expected and actual experience		(96)		(8)
Changes in assumptions or other inputs		(222)		
Actual benefit payments		(15)		(17)
Net changes		(189)		154
Net OPEB Plan obligation - end of the year	$	1,412	$	1,601

14. OTHER POST-EMPLOYMENT BENEFITS (CONTINUED)

The Authority's annual OPEB Plan expense for fiscal years 2017 and 2016 were as follows (in thousands):

	2017	2016
Components		
Service costs	$ 101	$ 136
Interest on the total OPEB Plan Liability	43	43
Changes of assumptions	(24)	-
Difference between expected and actual experience	(11)	(1)
Total OPEB Plan expense	$ 109	$ 178

Funded Status and Funding Progress—As of June 30, 2017, the most recent actuarial measurement date, the cost was 0% funded. The total OPEB Plan liability for benefits was $1.4 million, and the plan fiduciary net position was $0, resulting in a net OPEB Plan liability of $1.4 million. The covered payroll (annual payroll of active employees covered by the OPEB Plan) was $1.0 million, and the ratio of the net OPEB liability to the covered payroll was 135.9%. The impact on the net OPEB Plan liability of a 1% increase or decrease in the discount rate and trend is included in the Required Supplementary Information.

Actuarial Methods Assumptions and Other Inputs**—**Actuarial valuations of an ongoing plan involve estimates of the value of reported amounts and assumptions about the probability of occurrence of events far into the future, such as assumptions about future employment, demographic, salary increase, mortality, and the healthcare cost trend. The actuarial assumptions used in the fiscal year 2017 and the fiscal year 2016 OPEB Plan valuations are a combination of those used in the New York City Employee Retirement Systems ("NYCERS") pension actuarial valuations and those specific to the OPEB Plan valuations.

Amounts determined regarding the funded status of the OPEB Plan and the annual Expense of the Authority are subject to continual revision as actual results are compared with past expectations and new estimates are made about the future. Projections of benefits for financial reporting purposes are based on the types of benefits provided at the time of each valuation and the historical pattern of the sharing of benefit costs between the employer and employees to that point. The actuarial methods and assumptions used include techniques that are designed to reduce short-term volatility in total OPEB Plan liability, consistent with the long-term perspective of the calculations.

The actuarial assumptions used in the fiscal year 2017 and fiscal year 2016 OPEB Plan valuations are classified as those used in the New York City Retirement Systems ("NYCRS") valuations and those specific to the OPEB valuations.

The OPEB Plan actuarial valuations incorporate only the use of certain NYCERS demographic and salary increase assumptions. The NYCERS demographic and salary scale assumptions are unchanged from the prior OPEB Plan actuarial valuation. For purposes of determining pension obligations, the demographic and salary scale assumptions requiring NYCERS Board approval (available on the website

14. OTHER POST-EMPLOYMENT BENEFITS (CONTINUED)

of the Office of the Actuary at www.nyc.gov/actuary) were adopted by each respective Board of Trustees during fiscal year 2012. Chapter 3 of the Laws of 2013 enacted those actuarial assumptions and methods that require New York State Legislation.

The OPEB Plan-specific actuarial assumptions used in the fiscal year 2017 OPEB Plan valuation are as follows:

Valuation Date	June 30, 2016.
Measurement Date	June 30, 2017
Discount Rate	3.13% per annum for the June 30, 2017 measurement date. 2.71% for the June 30, 2016 valuation date.[1]
Actuarial Cost Method	Entry age calculated on an individual basis with the actuarial value of projected benefits allocated on a level basis over earnings from hire through age of exit.
Salary Increases	3.00 percent per annum which includes an inflation rate of 2.50 percent and a general wage increase rate of 0.50 percent. For more information see the Silver Books
Inflation	2.50 percent
Per-Capita Claims Costs	EBCBS and GHI plans are insured via a Minimum Premium arrangement while the HIP and many of the other HMOs are community rated. Costs reflect age adjusted premiums for all plans. HIP HMO and GHI/EBCBS non-Medicare premiums have been adjusted for Health Savings Agreement changes.

[1] Rates are based solely on the S&P Municipal Bond 20 Year High Grade Rate Index, since the plan has no assets, as per the guidance under GASB 75.

Employer premium contribution schedules for the month of July 2016 and January 2017 were reported by the New York City Office of Labor Relations (“OLR”). In most cases, the premium contributions remained the same throughout the year. HIP HMO Medicare rates varied by date and by specific Plan options. These variations are the result of differing Medicare reimbursements. The various monthly rates were blended by proportion of enrollment. For other rates, where the January 2017 premium rate was different than the July 2016 premium rate, the valuation assumed that the January 2017 premium rate was more representative of the long-term cost of the arrangement.

These assumptions are generally unchanged from the previous valuation except as noted below. The NYCERS pension assumptions are provided in the five “Silver Books” available on the Reports page of the OA website (www.nyc.gov/actuary).

14. OTHER POST-EMPLOYMENT BENEFITS (CONTINUED)

The probability of retirement set out in each of the Silver Books is assumed to be 100% at either age 63 or 70, depending upon the program of benefits for the individual employee. For the OPEB Plan valuation, 100% of the individuals remaining in service at these ages are assumed to either retire with a benefit or to terminate employment without a benefit, depending upon whether they have attained the requisite service.

Based on those assumptions, The City's OPEB Plan's fiduciary net position was projected to be available to make all projected OPEB payments for current active and inactive employees until 2025. After that time, benefit payments will be funded on a pay-as-you go basis. The discount rate is the single equivalent rate which results in the same present value as discounting future benefit payments made from assets at the long-term expected rate of return and discounting future benefit payments funded on a pay-as-you-go basis at the Municipal Bond 20-year Index Rate.

Results for the OPEB Plans for Component Units are presented using a discount rate of the Municipal Bond 20-year Index Rate, since there is no pre-funding assumed for these plans.

The initial monthly premium rates used in the valuations are shown in the following table:

	MONTHLY RATES	
Plan	**FY 2017**	**FY 2016**
HIP HMO		
Non-Medicare Single	$ 600.18 [1]	$ 603.02
Non-Medicare Family	$ 1,470.45 [1]	$ 1,477.41
Medicare	$ 160.83	$ 160.05
GHI/EBCBS		
Non-Medicare Single	$ 567.48 [1]	$ 524.44
Non-Medicare Family	$ 1,487.47 [1]	$ 1,376.15
Medicare	$ 168.35	$ 160.75
Other HMOs[2]		
Non-Medicare Single	$ 1,030.56	$ 923.23
Non-Medicare Family	$ 2,226.45	$ 2,010.43
Medicare Single	$ 276.18	$ 245.19
Medicare Family	$ 546.28	$ 501.71

[1] For the fiscal year 2017 valuation, HIP HMO premiums are decreased by 5.10% and GHI/EBCBS Pre-Medicare premiums decreased 0.82% to reflect fiscal year 2018 Health Savings Agreement changes announced during fiscal year 2017.

[2] Other HMO premiums represent the total premium for medical (not prescription) coverage including retiree contributions.

14. OTHER POST-EMPLOYMENT BENEFITS (CONTINUED)

Welfare Fund - For the fiscal year 2017 valuation, the Welfare Fund contribution reported for fiscal year 2016, including any reported retroactive amounts, was used as the per capita cost for valuation purposes.

The calculations reflected an additional one time $100 contribution for fiscal year 2017 in July 2016. Projected contributions reflect $25 increases at July 1, 2016 and July 1, 2017.

Reported annual contribution amounts for the last two years are shown in Appendix B, Tables 2a to 2e of the OPEB Plan valuation report dated September 15, 2017.

Welfare Fund rates are based on actual reported union Welfare Fund code for current retirees. Where a union Welfare Fund code was missing, the most recently reported union code was reflected.

The weighted average annual contribution rates used for future retirees is shown below.

	Annual Rate	
	FY 2017	FY 2016
NYCERS	$ 1,743	$ 1,692

Contributions are assumed to increase by 3.5% annually starting in fiscal year 2019.

Medicare Part B Premiums are as follows:

Calendar Year	Monthly Premium
2013 - 2015	104.90
2016	109.97*
2017	113.63

2016 Medicare Part B premiums are assumed to increase by Medicare Part B trend rates.

Medicare Part B premium reimbursement amounts have been updated to reflect the actual premium rates announced for calendar years through 2017. Due to there being no cost-of-living increase in Social Security benefits for calendar year 2016, and a minimal cost-of-living increase for calendar 2017, most Medicare Part B participants will not be charged the Medicare Part B premium originally projected or ultimately announced for those years. Thus, the valuation uses a blended rate as a better representation of future Part B premium costs.

For the fiscal year 2017 OPEB Plan valuation, the annual premium used was $1,341.60, which is equal to:

(a) 70% of the basic $104.90 monthly hold-harmless amount, assuming that there would be no claims made for the slight increase in Part B premiums for continuing retirees, and

(b) 30% of the announced premiums (6 months at $121.80 for calendar year 2016 and 6 months at $134.00 for calendar year 2017), representing the proportion of the Medicare population that will pay the announced amount.

14. OTHER POST-EMPLOYMENT BENEFITS (CONTINUED)

Overall Medicare Part B Premium amounts are assumed to increase by the following percentages to reflect the income-related increases in Medicare Part B Premiums for high income individuals.

Fiscal Year	Income-Related Medicare Part B Increase
2017	4.0
2018	4.5
2019	5.0
2020	5.2
2021	5.3
2022	5.4
2023	5.5
2024	5.6
2025	5.8
2026	5.9
2027 and later	6.0

Medicare Part B Premium Reimbursement Assumption - 90% of Medicare participants are assumed to claim reimbursement; based on historical data.

Health Care Cost Trend Rate ("HCCTR") - Covered medical expenses are assumed to increase by the following percentages (unchanged from the last valuation). For purposes of measuring entry age calculations, actual historic plan increases are reflected to the extent known, with further historic trend rates based on the trend assumed for fiscal year 2017 (initial trend).

HCCTR Assumptions

Year Ending[1]	Pre-Medicare Plans	Medicare Plans	Medicare Part B Premiums	Welfare Fund Contributions
2017[2]	7.84%	2.51%	5.0%	0.0%
2018	7.5%	5.0%	5.0%	0.0%
2019	7.0%	5.0%	5.0%	3.5%
2020	6.5%	5.0%	5.0%	3.5%
2021	6.0%	5.0%	5.0%	3.5%
2022	5.5%	5.0%	5.0%	3.5%
2023 and later	5.0%	5.0%	5.0%	3.5%

[1] Fiscal year for Pre-Medicare and Medicare Plans and calendar year for Medicare Part B Premiums.

[2]Actual amounts based on the *2015 Health Care Savings Agreement Initiative Report of Status of Healthcare Savings* dated June 19, 2017. Welfare Fund contribution rates assumed to increase based on current pattern bargaining (additional $25 each for fiscal year 2017 and 2018, plus a one-time $100 in fiscal year 2017).

14. OTHER POST-EMPLOYMENT BENEFITS (CONTINUED)

Age and Gender-Related Morbidity - The premiums are age and gender adjusted for GHI/EBCBS, HIP HMO and Other HMOs. The assumed relative costs of coverage are consistent with information presented in the 2013 study Health Care Costs - From Birth to Death, sponsored by the Society of Actuaries.

For non-Medicare costs, a sample of factors used are:

Age	Male	Female	Age	Male	Female
20	0.170	0.225	45	0.355	0.495
25	0.146	0.301	50	0.463	0.576
30	0.181	0.428	55	0.608	0.671
35	0.227	0.466	60	0.783	0.783
40	0.286	0.467	64	0.957	0.917

Children costs assumes a factor of 0.229.

For Medicare costs, relative factors based on the Yamamoto Study for net Medicare costs for 2010 for inpatient, outpatient, and professional costs were blended. Prescription drug costs were not reflected as NYCHBP excludes most drugs from coverage. Professional costs were weighted at 64%, based on the GHI portion of the combined GHI/EBCBS premiums reported historically. Inpatient costs were weighted as twice as prevalent as outpatient costs based on the relative allocation suggested in the Yamamoto Study. Costs prior to age 65 were approximated using the non-Medicare data, but they assume that individuals under age 65 on Medicare had an additional disability-related morbidity factor.

Medicare costs prior to age 65 assume an additional disability-related morbidity factor. A sample of factors are:

Age	Males	Females	Age	Males	Female
20	0.323	0.422	60	1.493	1.470
25	0.278	0.565	65	0.919	0.867
30	0.346	0.804	70	0.946	0.885
35	0.432	0.876	75	1.032	0.953
40	0.545	0.878	80	1.122	1.029
45	0.676	0.929	85	1.217	1.116
50	0.883	1.082	90	1.287	1.169
55	1.159	1.260	95	1.304	1.113
			99+	1.281	0.978

The age adjustment for the non-Medicare GHI/EBCBS premium reflects a 5% reduction in the GHI portion of the monthly premium (with the GHI portion representing $266.88 out of the $572.19 for single coverage and $706.00 out of the $1,499.82 for family coverage for fiscal year 2017 rates) and a

14. OTHER POST-EMPLOYMENT BENEFITS (CONTINUED)

3% reduction in the EBCBS portion of the premium (with the EBCBS portion representing the remainder of the premiums) for the estimated margin that is expected to be returned.

***Mortality Rates*—**For the fiscal year 2016, OPEB Plan and pension valuations, new tables of postretirement mortality were proposed by the Actuary and adopted by each of the NYECRS Boards during fiscal year 2016. These tables were based primarily on the experience of each system and the application of Mortality Improvement Scale MP-2015 published by the Society of Actuaries in October 2015. Scale MP-2015 applied on a generational basis replaced Mortality Improvement Scale AA which was applied on a static projection basis.

There were no changes to benefits.

***Changes of Assumptions*—**The discount rate used to measure liabilities was updated to incorporate GASB 75 guidance. Certain plan enrollment, election assumptions and per capita claims costs were updated based on recent experience. A "non-filer" assumption was introduced this year for future retirees (i.e. current active employees) who are not expected to file for OPEB at retirement.

This change reflects a change in the discount rate from 2.71 percent in June 30, 2016 to 3.13 percent in June 30, 2017.

The age adjustment for the non-Medicare GHI/EBCBS premium reflects a 5% reduction in the GHI portion of the monthly premium (with the GHI portion representing $266.88 out of the $572.19 for single coverage and $706.00 out of the $1,499.82 for family coverage for fiscal year 2017 rates) and a 3% reduction in the EBCBS portion of the premium (with the EBCBS portion representing the remainder of the premiums) for the estimated margin that is expected to be returned.

***Participation*—** Active participation assumptions are based on actual elections for current retirees. Portions of current retirees not eligible for Medicare are assumed to change elections upon attaining age 65 based on the patterns of elections of Medicare-eligible retirees. Detailed assumptions appear in the following table. The participation assumptions have been updated since the prior valuation to reflect recent experience.

14. OTHER POST-EMPLOYMENT BENEFITS (CONTINUED)

PLAN PARTICIPATION ASSUMPTIONS Benefits	NYCERS
Pre-Medicare	
- GHI/EBCBS	72%
- HIP HMO	20
- Other HMO	4
- Waiver	4
Medicare	
- GHI	72
- HIP HMO	20
- Other HMO	4
- Waiver	4
Post-Medicare Migration	
- Other HMO to GHI	0
- HIP HMO to GHI	0
- Pre-Med. Waiver	
** To GHI @ 65	0
** To HIP @ 65	0

Waivers are assumed to include participants who do not qualify for coverage because they were working less than 20 hours a week at termination.

***Dependent Coverage*—**Dependent coverage is assumed to terminate when a retiree dies.

Dependents - Dependent assumptions based on distribution of coverage of recent retirees are shown in the following table. Actual spouse data is shown for current retirees. Child dependents of current retirees are assumed to receive coverage until age 26.

14. OTHER POST-EMPLOYMENT BENEFITS (CONTINUED)

Based on experience under the OPEB Plan for NYCERS, male retirees were assumed to be four (4) years older than their wives, and female retirees were assumed to be two (2) years younger than their husbands. Children are assumed to be covered for eight (8) years after retirement. For employees eligible to retire based only on service, children are assumed to be covered for an additional five (5) years.

DEPENDENT COVERAGE ASSUMPTIONS

Group	NYCERS
Male	
- Single Coverage	35%
- Spouse	35%
- Child/No Spouse	5%
- Spouse and Child	25%
Total	100%
Female	
- Single Coverage	70%
- Spouse	20%
- Child/No Spouse	5%
- Spouse and Child	5%
Total	100%

Demographic Assumptions - The assumptions are the same as those that were used to value the pension benefits of the NYCERS for determining employer contributions for fiscal years beginning 2016.

COBRA Benefits - Although COBRA beneficiaries pay 102% of "premiums," typical claim costs for COBRA participants run about 50% greater than costs for other participants.

There is no cost to The Authority for COBRA beneficiaries who enroll in community-rated HMO's, including HIP, since these individuals pay their full community rate. However, The City's costs under the experience-rated GHI/EBCBS coverage are affected by the claims for COBRA-covered individuals.

In order to reflect the cost of COBRA coverage, the cost of excess claims for GHI-covered individuals and families is estimated assuming that 15% of employees not eligible for other benefits included in the valuation elect COBRA coverage for 15 months. These assumptions are based on experience of other large employers. This percentage is applied to the overall enrollment in the active plan and reflects a load for individuals who are not yet members of the retirement systems and are still eligible for COBRA benefits. A lump-sum COBRA cost of $1,000 was assumed for terminations during fiscal year 2017. This lump-sum amount is increased by the Pre-Medicare HCCTR for future years but is not adjusted for age-related morbidity.

14. OTHER POST-EMPLOYMENT BENEFITS (CONTINUED)

Cadillac Tax **-** The OPEB Plan valuation includes an explicit calculation of the high-cost plan excise tax ("Cadillac Tax") that will be imposed beginning in 2020 under NHCR.

The tax is 40% of the excess of (a) over (b) where (a) is the cost of medical coverage and (b) is the statutory limits ($10,200 for single coverage and $27,500 for family coverage), adjusted for the following:

- For Pre-Medicare retirees above the age of 55, the limit will be further increased by $1,650 for single coverage and $3,450 for family coverage.
- For 2019, the limits are increased by CPI + 1% (e.g., 3.5%). For each year after 2019, the limits are further increased by CPI (e.g., 2.5%). The indexing of limits starts in 2018; the tax is first applied in 2020.

The impact of the Cadillac Tax for the NYCHBP benefits is calculated based on the following assumptions about the cost of medical coverage:

- The cost for each benefit option without age adjustment (GHI, HIP, or Other HMO, combined with the average cost of Medicare Part B premium reimbursement, if applicable) was separately compared to the applicable limit.
- The additional Cadillac Tax due to the riders or optional benefit arrangements is assumed to be reflected in the contribution required for the rider or optional benefit.
- Pre-Medicare retirees under age 55 are not assumed to have the higher limits that apply to employees engaged in high-risk professions because the majority of employees included in this valuation are not in such professions.

In cases where the Authority provides only a portion of the OPEB Plan benefits, which give rise to the Cadillac Tax, the calculated Cadillac Tax is allocated to the appropriate paying entity in proportion to the OPEB liabilities for relevant OPEB Plan benefits.

Active/Inactive Liabilities – 40% of the measured liability of the Active/Inactive population. This is roughly equivalent to assuming that 60% of the Active/Inactive members will terminate membership prior to vesting and not receive OPEB.

Sensitivity of the Net OPEB Plan Liability to Changes in the Discount Rate

Sensitivity of the Authority's Proportionate Share of the Net OPEB Plan Liability to Changes in the Discount Rate—The following table presents the Authority's proportionate share of the net OPEB Plan liability using the discount rate of 3.13 percent, as well as what the Authority's proportionate share of the net OPEB Plan liability would be if it were calculated using a discount rate that is one-percentage point lower (2.13 percent) or one-percentage point higher (4.13 percent) than the current rate (in thousands):

14. OTHER POST-EMPLOYMENT BENEFITS (CONTINUED)

	Sensitivity Analysis Net OPEB Liability as of June 30, 2017		
	1% Decrease (2.13%)	Current Discount Rate (3.13%)	1% Increase (4.13%)
Total OPEB Plan Liability	$1,703	$1,412	$1,189

Sensitivity of the Net OPEB Plan Liability to Changes in the Healthcare Cost Trend Rate

The following presents the total OPEB Plan liability of the Authority, as well as what the Authority's total OPEB Plan liability would be if it were calculated using healthcare cost trend rates that are 1-percent-point lower or 1-percent-point higher than the current healthcare cost trend rates:

	Sensitivity Analysis Net OPEB Liability as of June 30, 2017		
	1% Decrease (6.84% decreasing to 4.0%)	Healthcare Cost Trend Rates (7.84% decreasing to 5.0%)	1% Increase (8.84% decreasing to 6.0%)
Total OPEB Plan Liability	$1,127	$1,412	$1,827

Deferred Outflows of Resources and Deferred Inflows of Resources Related to the OPEB Plan

For the years ended June 30, 2017 and 2016, the Authority recognized pension expense of $108.9 thousand and $178.1 thousand, respectively. At June 30, 2017, the Authority reported deferred outflows of resources and deferred inflows of resources related to the OPEB Plan from the following sources:

	Deferred Outflows of Resources	Deferred Inflows of Resources
Difference between expected and actual experience	$ -	$ 93
Changes of assumptions or other inputs	-	198
Total	$ -	$ 291

15. POLLUTION REMEDIATION OBLIGATIONS

The System reports pollution remediation obligations ("PROs") as required by the GASB. The System's PROs may arise as a result of: (1) federal, State, and local laws and regulations, (2) violations of pollution-related permits or licenses, (3) a determination by the System that there is an imminent endangerment to public health and safety as a result of an existing pollution condition, (4) the System's being named in a lawsuit to compel remediation or being identified by a regulator as a party responsible or potentially responsible for remediation, and/or (5) the System's voluntarily commencement of remediation. As of June 30, 2017 and 2016, the System reported $29.5 million and $32.4 million of liabilities for known PROs, respectively.

The System has estimated these amounts based on the current value of outlays expected to be incurred for pollution remediation, which it is currently obligated to perform. Actual future outlays will differ from the estimated amounts if the prices or techniques for remediation measures change or differ from estimates, if and when additional information about existing pollution conditions becomes known to the System in the future and/or if applicable laws or regulations change.

Remediation outlays for certain pollution conditions currently known to the System are not included in the reported liabilities because they are not yet reasonably estimable. These include certain locations that the System has been informed have been designated under federal law as Superfund sites to address alleged hazardous substances, pollutants, or contaminants at these sites and for which the System may be named as a potentially responsible party for the remediation because there are the System's facilities operated at these locations.

16. SUBSEQUENT EVENTS

- On July 11, 2017, the Authority issued $163 million of fixed rate refunding Second Resolution Bonds, Fiscal 2018 AA. Proceeds of the bonds were used to refund outstanding General Resolution Bonds, Fiscal 2008 Series A and to pay for bond issuance costs.

- On July 13, 2017, the Authority drew down $125.2 million and $23.5 million of Fiscal 2015 Series 1 BANs and Fiscal 2017 Series 2 BANs respectively to pay for the costs of improvements to the System.

- On August 10, 2017, the Authority drew down on $111.6 million of Fiscal 2017 Series 2 BANs to pay for the cost of improvements to the System.

- On October 12, 2017, the Authority issued $384.0 million of fixed rate new money and refunding Second Resolution Bonds, Fiscal 2018 Series BB. Proceeds of the bonds were uses to pay for the costs of improvements to the System, refund portions of Second Resolution Bonds, Fiscal 2006 Series AA, and to pay for bond issuance costs.

* * * * * *

REQUIRED SUPPLEMENTARY INFORMATION

Required Supplementary Information (Unaudited)

Schedule of changes for total OPEB liability and related ratios
June 30, 2017 and 2016 (in thousands):

	2017	2016
Total OPEB Liability		
Service cost	$ 101	$ 136
Interest	43	43
Differences between expected and actual experience	(96)	(8)
Changes of assumptions	(222)	-
Benefits payments	(15)	(17)
Net change in total OPEB liability	**(189)**	**154**
Total OPEB liability - beginning	1,601	1,447
Total OPEB liability - ending	**$ 1,412**	**$ 1,601**
Covered-employee payroll	$ 1,039	$ 1,148
Total OPEB liability as a percentage of covered-employee payroll	135.9%	139.5%

Notes to the Schedule:
Changes of assumption: Changes of assumption and other inputs reflect the effects of changes in the discount rate each period. The following are the discount rates used in each period:

2017	3.13%
2016	2.71%

The Authority funds OPEB benefits on a pay-as-you-go basis and contributions are not actuarially determined. Therefore, the required supplementary information related to actuarially determined contributions for the 10 most current fiscal years is not applicable.

*This data is presented for those years for which information is available.

NEW YORK CITY WATER AND SEWER SYSTEM

Required Supplementary Information (Unaudited)

SCHEDULE OF THE AUTHORITY'S PROPORTIONATE SHARE OF THE NET PENSION LIABILITY
Last 10 Fiscal Years* (in thousands):

		2017	2016	2015	2014	2013
Authority's proportion of the net pension liability	%	0.004	0.005	0.005	0.005	0.005
Authority's proportionate share of the net pension liability	$	828	1,215	1,012	901	1,154
Authority's covered-employee payroll	$	1,038	1,235	1,289	1,181	1,124
Authority's proportionate share of the net pension liability as percentage of its covered employee payroll	%	79.77	98.381	78.51	76.29	102.7
Plan fiduciary net position as a percentage of the total pension liability	%	74.8	69.6	73.1	75.3	67.2

*This data is presented for those years for which information is available.

NEW YORK CITY WATER AND SEWER SYSTEM

Required Supplementary Information (Unaudited)

SCHEDULE OF THE AUTHORITY'S PENSION CONTRIBUTIONS
Last 10 Fiscal Years* (in thousands):

	2017	2016	2015	2014	2013	2012	2011	2010	2009
Actuarially determined contribution	$ 136	$ 170	$ 161	$ 141	$ 136	$ 157	$ 113	$ 121	$ 55
Contribution in relation to the actuarially determined contribution	$ (136)	$ (170)	$ (161)	$ (141)	$ (136)	$ (157)	$ (113)	$ (121)	$ (55)
Contribution deficiency (excess)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Authority's covered -employee payroll[1]	$1,038	$ 1,235	$ 1,289	$ 1,181	$ 1,124	$ 919	$ 1,026	$ 676	$ 729
Contribution as a percentage of covered-employee payroll	13.10%	13.77%	12.49%	11.94%	12.10%	17.08%	11.01%	17.90%	7.54%

*This data is presented for those years for which information is available.

[1] Covered-employee payroll data from the actuarial valuation date with one-year lag.

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APPENDIX E

FORM OF OPINIONS OF CO-BOND COUNSEL
(Fiscal 2019 Series BB Bonds)

September , 2018

New York City Municipal
Water Finance Authority
New York, New York 10007

Ladies and Gentlemen:

We have acted as bond counsel and examined a record of proceedings relating to the issuance of $100,000,000 aggregate principal amount of Water and Sewer System Second General Resolution Revenue Bonds, Adjustable Rate Fiscal 2019 Series BB (the "2019 Series BB 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 2019 Series BB Bonds are issued under and pursuant to the Act and a resolution of the Authority adopted March 30, 1994 entitled "Water and Sewer System Second General Revenue Bond Resolution," as amended and supplemented to the date hereof (the "Second Resolution"), and have been authorized to be issued by a resolution adopted September 7, 2018 entitled "Supplemental Resolution No. 138 Authorizing the Issuance of up to $100,000,000 Water and Sewer System Second General Resolution Revenue Bonds, Adjustable Rate Fiscal 2019 Series BB" ("Supplemental Resolution No. 138"). Capitalized terms used herein and not otherwise defined have the respective meanings given to them in the Second 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"), related to, among other things, the financing of Water Projects.

The 2019 Series BB Bonds are part of an issue of bonds of the Authority (the "Bonds") which the Authority has created under the terms of the Second Resolution and is authorized to issue from time to time for the purposes authorized by the Act and the Second Resolution, as then in effect, and without limitation as to amount except as provided in the Second Resolution or as may be limited by law. The 2019 Series BB Bonds are being issued for the purposes set forth in the Second Resolution.

The Authority is authorized to issue Bonds, in addition to the 2019 Series BB Bonds, only upon the terms and conditions set forth in the Second Resolution, and such Bonds, when issued, shall, with the 2019 Series BB Bonds and with all other such Bonds theretofore and hereafter issued, be entitled to the equal benefit, protection and security of the provisions, covenants and agreements of the Second Resolution.

The Internal Revenue Code of 1986 (the "Code") sets forth certain requirements which must be met subsequent to the issuance and delivery of the 2019 Series BB 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 2019 Series BB Bonds to be included in gross income for federal income tax purposes retroactive to the date of issue of the 2019 Series BB Bonds. Pursuant to the Second Resolution and the Tax Certificate as to Arbitrage and the Provisions of Sections 103 and 141-150 of the Internal Revenue Code of 1986 (the "Tax Certificate"), the Authority has covenanted to comply with the applicable requirements of the Code in order to maintain the exclusion of the interest on the 2019 Series BB Bonds from gross income for federal income tax purposes pursuant to Section 103 of the Code. In addition, the Authority has made certain representations and certifications in the Second Resolution and the Tax Certificate. We have not independently verified the accuracy of those certifications and representations.

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 Second Resolution and Supplemental Resolution No. 138 and to issue the 2019 Series BB Bonds.

2. The Second Resolution and Supplemental Resolution No. 138 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 respective terms. The Second Resolution and Supplemental Resolution No. 138 create the valid, binding and perfected pledges they purport to create of the Revenues and any moneys or securities on deposit in the Funds and Accounts created thereby for the repayment of the Bonds, subject only to the provisions of the Second Resolution, Supplemental Resolution No. 138 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 2019 Series BB Bonds have been duly and validly authorized and issued. The 2019 Series BB Bonds are valid and binding special obligations of the Authority payable as provided in the Second Resolution, are enforceable in accordance with their terms and the terms of the Second Resolution and are entitled, together with all other Bonds issued under the Second Resolution, to the benefits of the Second Resolution and the Act.

4. The 2019 Series BB Bonds are payable solely from the Revenues and other amounts pledged to such payment under the Second Resolution. The 2019 Series BB 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 Second 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. Under existing law, assuming compliance with the tax covenants described herein and the accuracy of the aforementioned representations and certifications, interest on the 2019 Series BB Bonds is excluded from gross income for federal income tax purposes pursuant to Section 103 of the Code. We are also of the opinion that such interest is not treated as a preference item in calculating the alternative minimum tax imposed under the Code.

9. Under existing law, interest on the 2019 Series BB Bonds is exempt from personal income taxes imposed by the State of New York or any political subdivision of the State of New York (including The City of New York).

Except as stated in paragraphs 8 and 9 above, we express no opinion as to any other federal, state or local tax consequences of the ownership or disposition of, or the accrual or receipt of interest on, the 2019 Series BB Bonds. Furthermore, we express no opinion as to any federal, state or local tax law consequences with respect to the 2019 Series BB Bonds, or the interest thereon, if any action is taken with respect to 2019 Series BB Bonds or the proceeds thereof upon the advice or approval of other counsel.

We have examined an executed 2019 Series BB 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 2019 Series BB 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,

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APPENDIX F

ADJUSTABLE RATE DEMAND BONDS

The Authority has entered into credit and liquidity agreements with the financial institutions listed below to support its First Resolution Bonds and Second Resolution Bonds. Reference is made to the disclosure relating to the individual series of obligations for information relating to the respective financial institutions and the terms and provisions of the related credit and liquidity agreements.

Series	Outstanding Principal Amount	Provider	Expiration or Optional Termination by Provider
2013 AA-1	$ 50,000,000	PNC Bank, NA	10/02/18
2003 F-2	$ 101,655,000	Citibank, N.A.	10/26/18
2016 AA-2	$ 100,000,000	PNC Bank, NA	10/26/18
2011 DD-2	$ 75,000,000	JPMorgan Chase Bank, N.A.	11/14/18
2010 CC	$ 200,000,000	Barclays Bank PLC	12/14/18
2001-F1	$ 100,000,000	Mizuho Bank, Ltd.	04/11/19
2001-F2	$ 84,130,000	JPMorgan Chase Bank, N.A.	04/11/19
2015 BB-2	$ 100,000,000	Mizuho Bank, Ltd.	06/14/19
2014 AA-5	$ 100,435,000	Mizuho Bank, Ltd.	08/19/19
2014 AA-6	$ 100,435,000	Mizuho Bank, Ltd.	08/19/19
2012 A-1	$ 100,000,000	Mizuho Bank, Ltd.	09/27/19
2012 A-2	$ 100,000,000	Mizuho Bank, Ltd.	09/27/19
2011 DD-3A	$ 50,000,000	US Bank, N.A.	10/16/19
2011 DD-3B	$ 50,000,000	State Street Bank and Trust Company	10/16/19
2008 BB-2	$ 101,000,000	Bank of America, N.A.	10/22/19
2008 BB-5	$ 50,000,000	Bank of America, N.A.	10/22/19
2016 AA-1	$ 100,000,000	Bank of America, N.A.	10/28/19
2008 B-3	$ 135,000,000	Bank of America, N.A.	03/17/20
2011 FF-1	$ 100,000,000	Bank of America, N.A.	03/17/20
2003 F-1-B	$ 50,000,000	US Bank, N.A.	03/27/20
2000-C	$ 107,500,000	Sumitomo Mitsui Banking Corporation	06/04/20
2014 AA-4	$ 100,000,000	Bank of Montreal	08/11/20
2007 CC-2	$ 50,000,000	Bank of Montreal	10/05/20
2017 BB-2	$ 50,000,000	Bank of Montreal	10/05/20
2006 AA-1A	$ 100,000,000	State Street Bank and Trust Company	10/07/20
2006 AA-1B	$ 100,000,000	State Street Bank and Trust Company	10/07/20
2008 B-1A	$ 100,000,000	Sumitomo Mitsui Banking Corporation	03/03/21
2012 B-1	$ 100,000,000	US Bank, N.A.	03/06/21
2012 B-2	$ 100,000,000	State Street Bank and Trust Company	03/06/21
2012 B-3	$ 75,000,000	State Street Bank and Trust Company	03/06/21
2012 B-4	$ 50,000,000	State Street Bank and Trust Company	03/06/21
2009 BB-1	$ 100,435,000	Landesbank Hassen-Thuriger Girozentrale	06/15/21
2009 BB-2	$ 100,435,000	Landesbank Hassen-Thuriger Girozentrale	06/15/21
2011 FF-2	$ 100,000,000	Landesbank Hassen-Thuriger Girozentrale	06/15/21
2015 BB-1	$ 100,000,000	Bank of America, N.A.	07/09/21
2008 BB-1	$ 100,000,000	Bank of Tokyo-Mitsubishi UFJ, Ltd.	09/13/21
2013 AA-2	$ 150,000,000	Bank of Tokyo-Mitsubishi UFJ, Ltd.	09/13/21
2014 AA-1	$ 125,000,000	JPMorgan Chase Bank, N.A.	09/17/21
2014 AA-2	$ 125,000,000	JPMorgan Chase Bank, N.A.	09/17/21
2007 CC-1	$ 160,500,000	Sumitomo Mitsui Banking Corporation	10/05/21
2017 BB-1A	$ 100,000,000	State Street Bank and Trust Company	10/05/21
2017 BB-1B	$ 100,000,000	State Street Bank and Trust Company	10/05/21
2017 BB-3	$ 39,500,000	Sumitomo Mitsui Banking Corporation	10/05/21
2003 F-1-A	$ 50,000,000	Barclays Bank PLC	06/17/22
2015 BB-4	$ 100,000,000	Barclays Bank PLC	06/17/22
2015 BB-3	$ 100,000,000	Sumitomo Mitsui Banking Corporation	07/07/23
2014 AA-3	$ 100,000,000	TD Bank, N.A.	09/17/23
2011 DD-1	$ 100,000,000	TD Bank, N.A.	11/16/23
	$4,531,025,000		

INDEX RATE BONDS [1]

Series	Outstanding Principal Amount	Step Up Date
2008 BB-3	$100,000,000	August 14, 2023
2008 BB-4	$ 50,000,000	August 14, 2023
2016 AA-3	$ 50,000,000	August 14, 2023

(1) The Authority's index rate bonds pay interest based on a specified index. Such bonds also provide for an increased rate of interest commencing on an identified step up date if such bonds are not converted or refunded.

APPENDIX G

BOOK-ENTRY-ONLY FORM

The Depository Trust Company ("DTC"), New York, NY. will act as securities depository for the Fiscal 2019 BB Bonds. The Fiscal 2019 BB Bonds will be issued as fully-registered securities registered in the name of Cede & Co. (DTC's partnership nominee) or such other name as may be requested by an authorized representative of DTC. One fully-registered bond certificate will be issued for each maturity of the Fiscal 2019 BB Bonds, each in the aggregate principal amount of such maturity, and will be deposited with DTC, in the aggregate principal amount of the Fiscal 2019 BB Bonds.

DTC, the world's largest securities depository, is a limited-purpose trust company organized under the New York Banking Law, a "banking organization" within the meaning of the New York Banking Law, a member of the Federal Reserve System, a "clearing corporation" within the meaning of the New York Uniform Commercial Code, and a "clearing agency" registered pursuant to the provisions of Section 17A of the Securities Exchange Act of 1934. DTC holds and provides asset servicing for over 3.5 million issues of U.S. and non-U.S. equity issues, corporate and municipal debt issues, and money market instruments (from over 100 countries) that DTC's participants (the "Direct Participants") deposit with DTC. DTC also facilitates the post-trade settlement among Direct Participants of sales and other securities transactions in deposited securities, through electronic computerized book-entry transfers and pledges between Direct Participants' accounts. This eliminates the need for physical movement of securities certificates. Direct Participants include both U.S. and non-U.S. securities brokers and dealers, banks, trust companies, clearing corporations, and certain other organizations. DTC is a wholly-owned subsidiary of The Depository Trust & Clearing Corporation ("DTCC"). DTCC is the holding company for DTC, National Securities Clearing Corporation and Fixed Income Clearing Corporation, all of which are registered clearing agencies. DTCC is owned by the users of its regulated subsidiaries. Access to the DTC system is also available to others such as both U.S. and non-U.S. securities brokers and dealers, banks, trust companies, and clearing corporations that clear through or maintain a custodial relationship with a Direct Participant, either directly or indirectly (the "Indirect Participants"). DTC has a Standard & Poor's rating of AA+. The DTC Rules applicable to its Participants are on file with the Securities and Exchange Commission. More information about DTC can be found at www.dtcc.com or www.dtc.org.

Purchases of Fiscal 2019 BB Bonds under the DTC system must be made by or through Direct Participants, which will receive a credit for the Fiscal 2019 BB Bonds on DTC's records. The ownership interest of each actual purchaser of each Fiscal 2019 BB Bonds ("Beneficial Owner") is in turn to be recorded on the Direct and Indirect Participants' records. Beneficial Owners will not receive written confirmation from DTC of their purchase. Beneficial Owners are, however, expected to receive written confirmations providing details of the transaction, as well as periodic statements of their holdings, from the Direct or Indirect Participant through which the Beneficial Owner entered into the transaction. Transfers of ownership interests in the Fiscal 2019 BB Bonds are to be accomplished by entries made on the books of Direct and Indirect Participants acting on behalf of Beneficial Owners. Beneficial Owners will not receive certificates representing their ownership interests in Fiscal 2019 BB Bonds, except in the event that use of the book-entry system for the Fiscal 2019 BB Bonds is discontinued.

To facilitate subsequent transfers, all Fiscal 2019 BB Bonds deposited by Direct Participants with DTC are registered in the name of DTC's partnership nominee, Cede & Co., or such other name as may be requested by an authorized representative of DTC. The deposit of Fiscal 2019 BB Bonds with DTC and their registration in the name of Cede & Co. or such other DTC nominee do not effect any change in beneficial ownership. DTC has no knowledge of the actual Beneficial Owners of any Fiscal 2019 BB Bonds; DTC's records reflect only the identity of the Direct Participants to whose accounts the Fiscal 2019 BB Bonds are credited, which may or may not be the Beneficial Owners. The Direct and Indirect Participants will remain responsible for keeping account of their holdings on behalf of their customers.

Conveyance of notices and other communications by DTC to Direct Participants, by Direct Participants to Indirect Participants, and by Direct Participants and Indirect Participants to Beneficial

Owners will be governed by arrangements among them, subject to any statutory or regulatory requirements as may be in effect from time to time.

Redemption notices shall be sent to DTC. If less than all of the Fiscal 2019 BB Bonds within a maturity are being redeemed, DTC's practice is to determine by lot the amount of the interest of each Direct Participant in such maturity to be redeemed.

Neither DTC nor Cede & Co. (nor any other DTC nominee) will consent or vote with respect to the Fiscal 2019 BB Bonds unless authorized by a Direct Participant in accordance with DTC's MMI Procedures. Under its usual procedures, DTC mails an Omnibus Proxy to the Authority as soon as possible after the record date. The Omnibus Proxy assigns Cede & Co.'s consenting or voting rights to those Direct Participants to whose accounts the Fiscal 2019 BB Bonds are credited on the record date (identified in a listing attached to the Omnibus Proxy).

Payment of redemption proceeds and principal and interest payments on the Fiscal 2019 BB Bonds will be made to Cede & Co., or such other nominee as may be requested by an authorized representative of DTC. DTC's practice is to credit Direct Participants' accounts, upon DTC's receipt of funds and corresponding detail information from the Authority or Trustee, on the payable date in accordance with their respective holdings shown on DTC's records. Payments by Participants to Beneficial Owners will be governed by standing instructions and customary practices, as is the case with securities held for the accounts of customers in bearer form or registered in "street name," and will be the responsibility of such Participant and not of DTC, the Trustee, or the 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 on the Fiscal 2019 BB Bonds to Cede & Co. (or such other nominee as may be requested by an authorized representative of DTC) is the responsibility of the Trustee, disbursement of such payments to Direct Participants will be the responsibility of DTC, and disbursement of such payments to the Beneficial Owners will be the responsibility of Direct and Indirect Participants.

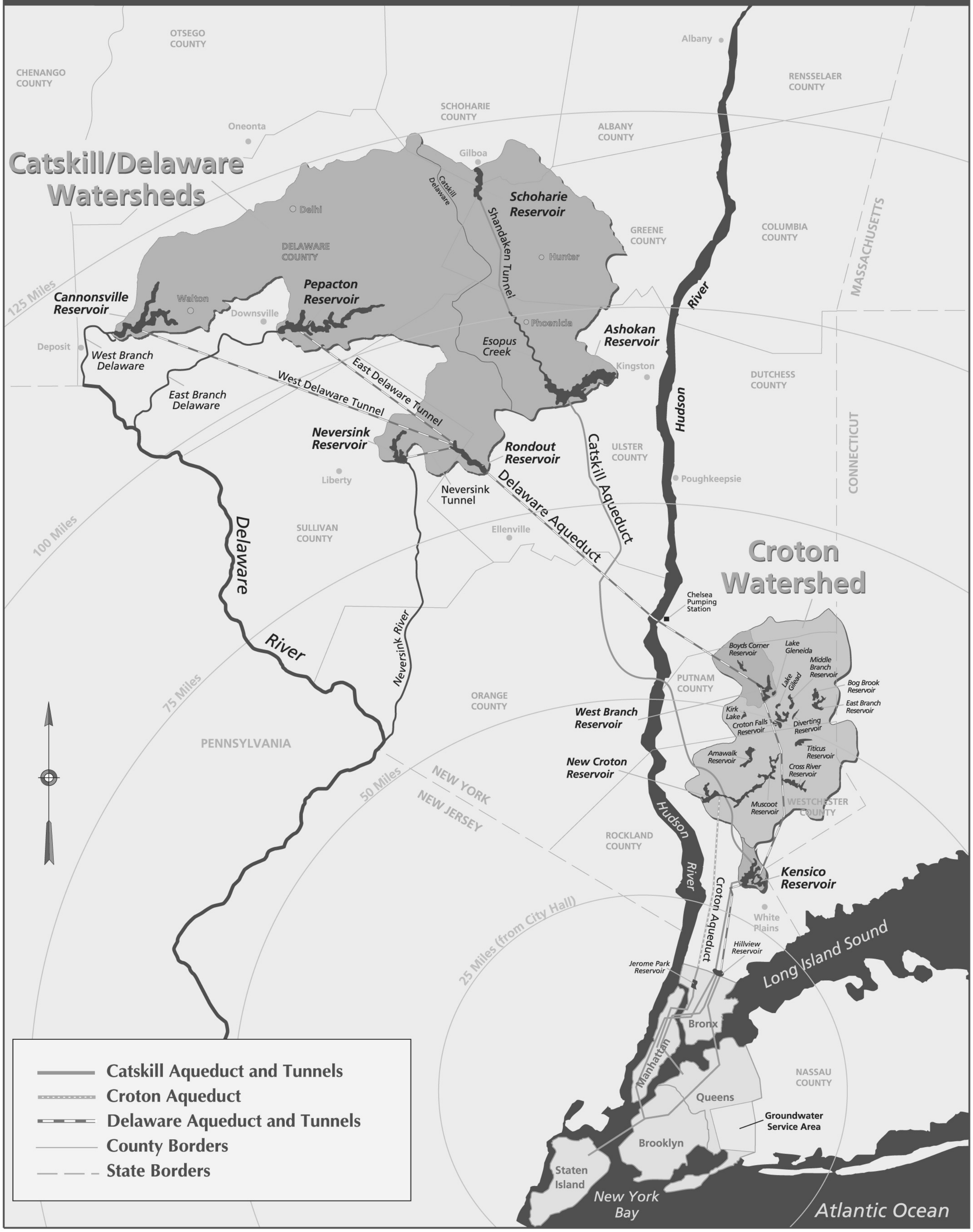
DTC may discontinue providing its services as depository with respect to the Fiscal 2019 BB Bonds at any time by giving reasonable notice to the Authority or the Trustee. Under such circumstances, in the event that a successor securities depository is not obtained, bond certificates are required to be printed and delivered.

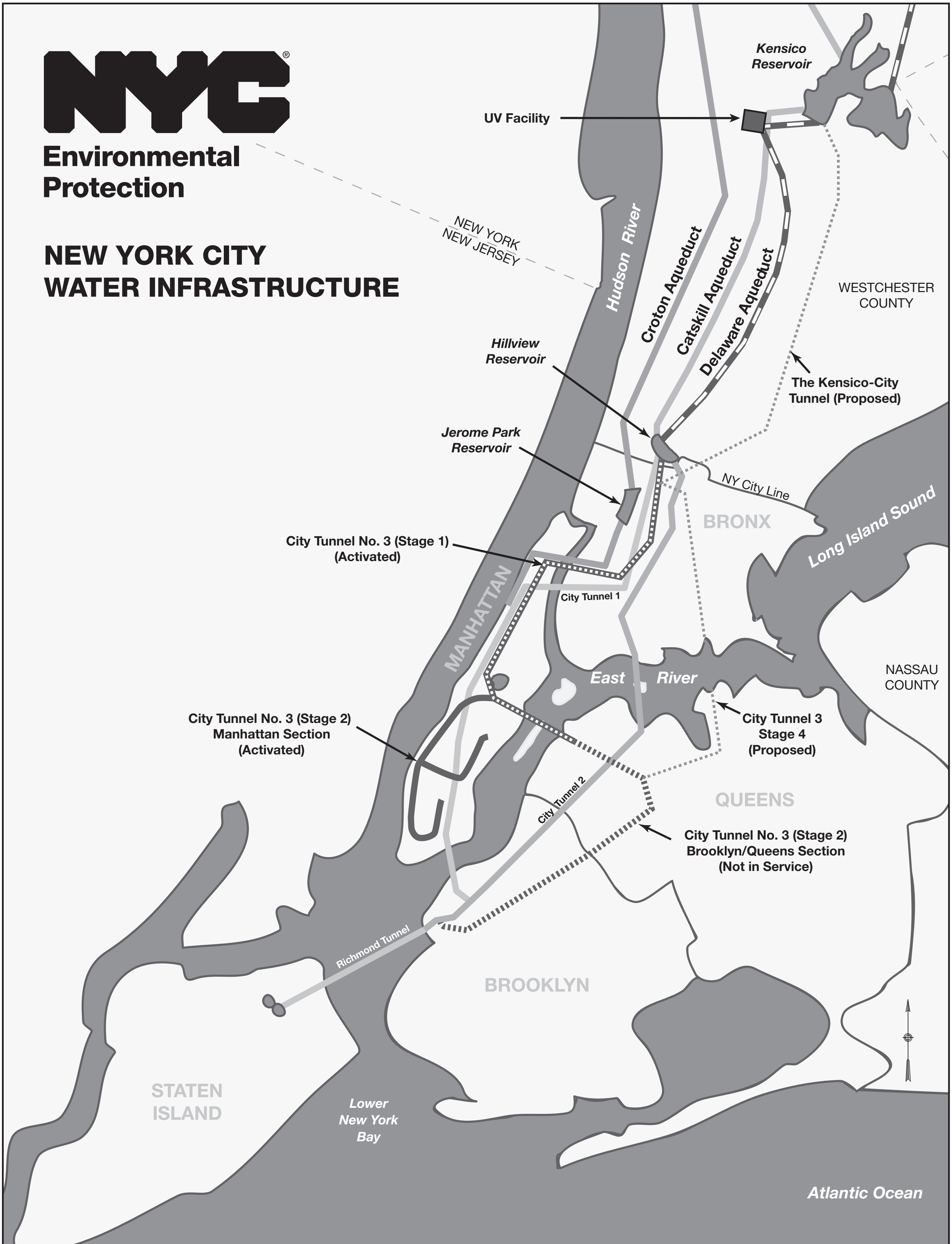
The Authority may decide to discontinue use of the system of book-entry-only transfers through DTC (or a successor securities depository). In that event, bond certificates will be printed and delivered to DTC.

Unless otherwise noted, the information contained in the preceding paragraphs of this subsection "Book-Entry-Only Form" has been extracted from information given by DTC. Neither the Authority, the Trustee nor the Underwriters make 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 OBLIGATIONS 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.

New York City Water Supply System

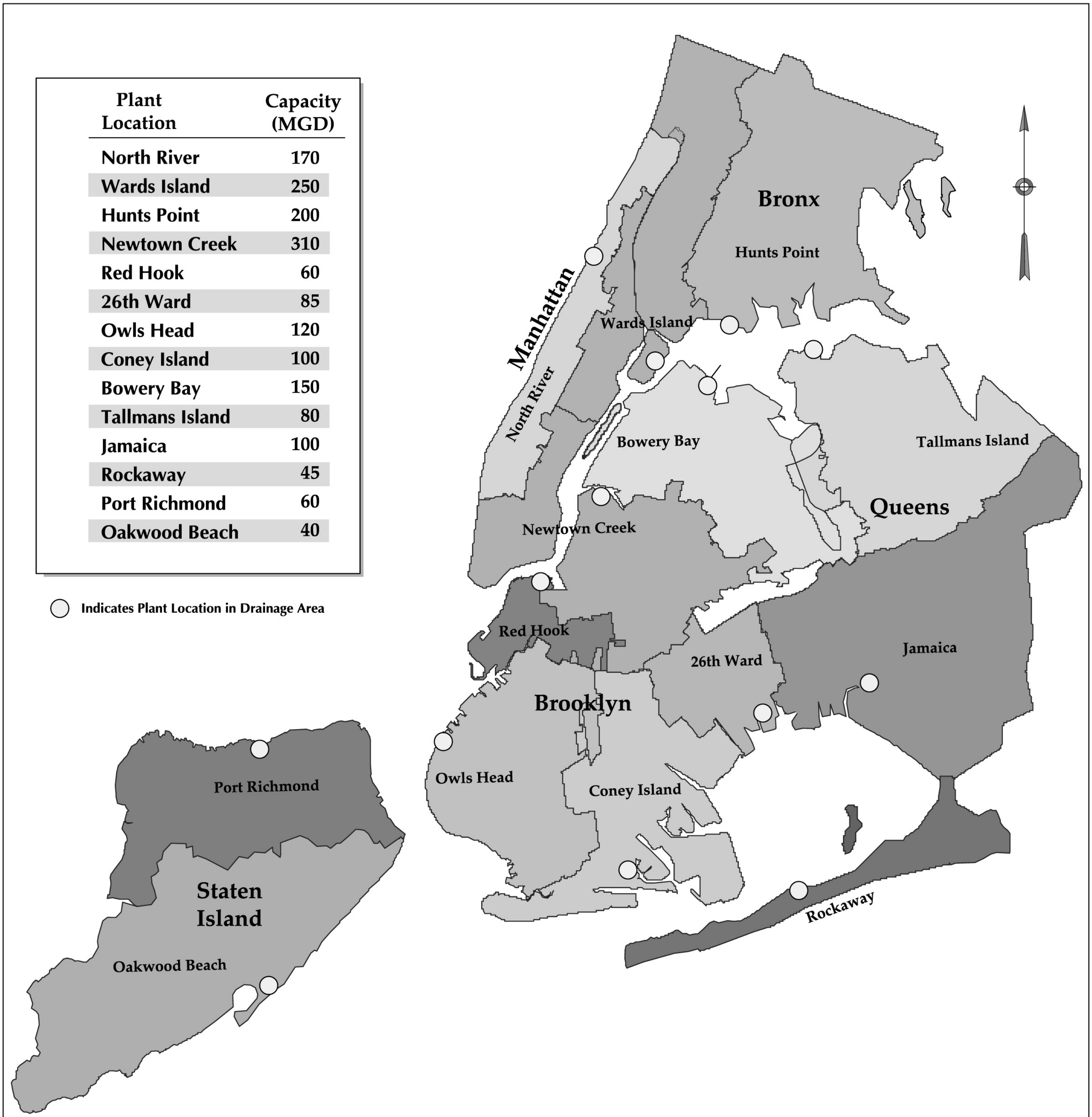



NYC
Environmental Protection
NEW YORK CITY
WATER INFRASTRUCTURE
NEW YORK
NEW JERSEY
Hudson River
Croton Aqueduct
Catskill Aqueduct
Delaware Aqueduct
Kensico Reservoir
UV Facility
WESTCHESTER COUNTY
Hillview Reservoir
The Kensico-City Tunnel (Proposed)
Jerome Park Reservoir
NY City Line
BRONX
Long Island Sound
City Tunnel No. 3 (Stage 1) (Activated)
City Tunnel 1
MANHATTAN
East River
NASSAU COUNTY
City Tunnel 3 Stage 4 (Proposed)
City Tunnel No. 3 (Stage 2) Manhattan Section (Activated)
QUEENS
City Tunnel 2
City Tunnel No. 3 (Stage 2) Brooklyn/Queens Section (Not in Service)
Richmond Tunnel
BROOKLYN
STATEN ISLAND
Lower New York Bay
Atlantic Ocean

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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APPENDIX I

DESCRIPTION OF THE LIQUIDITY PROVIDER AND SUMMARY OF THE LIQUIDITY FACILITY

Liquidity Provider – Industrial and Commercial Bank of China Limited, New York Branch

The following information concerning the Liquidity Provider has been provided by representatives of the Liquidity Provider and has not been independently confirmed or verified by the Authority or the Underwriter. No representation is made herein as to accuracy or adequacy of such information or as to the absence of material adverse changes in such information subsequent to the date hereof or that the information given below is correct as of any time subsequent to its date.

CERTAIN INFORMATION CONCERNING INDUSTRIAL AND COMMERCIAL BANK OF CHINA LIMITED, NEW YORK BRANCH

Industrial and Commercial Bank of China Limited ("ICBC") is a joint stock limited company incorporated in the People's Republic of China ("PRC"). Industrial and Commercial Bank of China was established on January 1, 1984 and was wholly restructured to a joint-stock limited company on October 28, 2005. On October 27, 2006, ICBC successfully listed on both the Shanghai Stock Exchange and Hong Kong Stock Exchange.

ICBC is headquartered in Beijing and maintains operations in 42 countries and regions as of December 31, 2016. With total assets of RMB 26,087,043 million (approximately USD 4.01 trillion) as of December 31, 2017, ICBC has developed into one of the largest listed banks in the world by assets. ICBC possesses what it believes is an excellent customer base, a diversified business structure, strong innovation capabilities and market competitiveness, and provides comprehensive financial products and services to 6.2 million corporate customers and 567 million personal customers. ICBC primarily operates in the PRC and provides an extensive range of commercial banking, investment banking, cash management, settlement and related products and services. Over the course of the last several years, ICBC has consistently been recognized as one of the strongest service brands in the PRC. ICBC is subject to regulation and supervision in the PRC, with the China Banking Regulatory Commission (the "CBRC") and the People's Bank of China ("PBOC") acting as its principal regulatory authorities.

ICBC's New York Branch (the "New York Branch") began operations in February 2009 and is licensed by the New York State Department of Financial Services. The New York Branch is subject to the supervision, examination, and regulation by the New York State Banking Department and by the Federal Reserve Board. The New York Branch engages in wholesale deposit-taking, lending and other banking services primarily for business clients and also serves as the U.S. dollar clearing center for ICBC and its subsidiary institutions outside the United States.

Additional information, including audited financial statements and the related notes and other financial information, is available at www.icbc-ltd.com.

The information relating to this Appendix is furnished solely to provide limited introductory information regarding ICBC in connection with the delivery of this Official Statement. The delivery hereof shall not create any implication that the information contained is complete or that there has been no change in the state of affairs at or condition of ICBC since the date hereof, or that the information contained or referenced herein is correct as of any time subsequent to its date. Any conversions of RMB amounts into USD amounts are approximate and not necessarily reflective of any official exchange range, and were included solely for the convenience of readers outside of the PRC and were made at the rate of 1 Chinese Yuan Renminbi (CNY) to USD .1537, the approximate rate of exchange at December 29, 2017. Such conversions should not be construed as representations that the RMB amounts could be converted into U.S. dollars at that or any other rate. **Except for the contents of this section, ICBC assumes no responsibility for the nature, contents, accuracy or completeness of the information set forth in this Official Statement.**

Summary of Certain Provisions of the Liquidity Facility

General

The Liquidity Provider has agreed to provide support for the Fiscal 2019 BB Bonds in the form of a standby bond purchase agreement with respect to the Fiscal 2019 BB Bonds (the "Liquidity Facility"). The following summary of certain provisions of the Liquidity Facility does not purport to be comprehensive or definitive and is subject to all of the terms and provisions of the Liquidity Facility to which reference is made hereby. Investors should obtain and review a copy of the Liquidity Facility in order to understand all of the terms of that document. A redacted version of the Liquidity Facility will be available on the Electronic Municipal Market Access website of the Municipal Securities Regulatory Board (www.emma.msrb.org) ("EMMA"). The provisions of any substitute liquidity facility may be different from those summarized below.

The Liquidity Facility provides coverage for the principal of tendered Fiscal 2019 BB Bonds and up to 35 days accrued interest on such Fiscal 2019 BB Bonds at a maximum interest rate of 9% based upon a year of 365 days. The Scheduled Termination Date for the Liquidity Facility is September 10, 2021. The Liquidity Facility supports only the payment of the purchase price of the Fiscal 2019 BB Bonds bearing interest at a Two-Day Rate or Weekly Rate (the "Eligible Rate") optionally tendered for purchase during the Purchase Period as described below (other than in connection with a mandatory tender of the Fiscal 2019 BB Bonds on an optional redemption date) and does not otherwise support the payment of the principal of or interest on the Fiscal 2019 BB Bonds.

"Purchase Period" means, with respect to each Tranche (i.e., each of the maturities) the period from and including the effective date of the Liquidity Facility to and including the earliest to occur of (i) the Scheduled Termination Date (or, if such date is not a Business Day, the Business Day immediately preceding such date), (ii) the earlier of the date on which the Liquidity Provider honors a drawing thereunder in connection with the delivery of a substitute Credit Facility (as defined in the Second Resolution) or one (1) Business Day following the date of delivery of a substitute Credit Facility in accordance with the provisions of the Liquidity Facility and the Supplemental Resolution (as defined in the Liquidity Facility), (iii) the date on which all Fiscal 2019 BB Bonds of such Tranche have been paid in full (not including a defeasance in which such Fiscal 2019 BB Bonds continue to be subject to optional or mandatory tender for purchase) or redeemed, (iv) the earlier of the date on which the Liquidity Provider honors a drawing thereunder in connection with the interest rate on all of the Fiscal 2019 BB Bonds of such Tranche being converted to a rate other than an Eligible Rate or one (1) Business Day following the date of such conversion in accordance with the terms of such Fiscal 2019 BB Bonds (the Purchase Period for all Tranches to include the date of conversion to a rate other than an Eligible Rate), and (v) the date on which the Available Allocated Commitment with respect to such Tranche is terminated pursuant to the terms of the Liquidity Facility.

The Liquidity Facility contains various provisions, covenants and conditions, certain of which are summarized below. Various words or terms used in the following summary are defined in this Official Statement or, to the extent not defined in this Official Statement, in the Liquidity Facility, and reference thereto is made for a full understanding of their import.

Under certain circumstances described below, the obligation of the Liquidity Provider to purchase the Fiscal 2019 BB Bonds tendered or deemed tendered by the owners thereof pursuant to an optional or mandatory tender may be automatically and immediately terminated or suspended without notice to the bondholders. In such event, sufficient funds may not be available to purchase Fiscal 2019 BB Bonds tendered or deemed tendered by the owners thereof pursuant to an optional or mandatory tender. In addition, the Liquidity Facility does not provide support or security for the payment of principal of, premium, if any, or interest on the Fiscal 2019 BB Bonds.

Events of Termination

The following events are Events of Terminations under the Liquidity Facility. Upon the occurrence of an Event of Termination, the Available Allocated Commitments for all Tranches and the obligation of the Liquidity Provider under the Liquidity Facility to purchase Fiscal 2019 BB Bonds immediately shall terminate without notice or demand to any person, and thereafter the Liquidity Provider shall be under no obligation to purchase the Fiscal 2019 BB Bonds.

(a) (i) the Authority shall fail to pay when due any principal of or premium, if any, or interest on the Fiscal 2019 BB Bonds or Purchased Bonds (as defined in the Liquidity Facility) (regardless of any waiver thereof by the holders of such Fiscal 2019 BB Bonds) (*provided*, *however*, that any failure of the Authority to pay any Purchased Bonds due solely as a result of an acceleration caused by the Liquidity Provider shall not constitute an Event of Termination), or (ii) any default by the Authority shall occur and be continuing in the payment of principal of or premium, if any, or interest on any bond, note or other similar evidence of indebtedness issued or assumed by the Authority that is secured by or payable from the Revenues (as defined in the Second Resolution) on a basis that is senior to or on a parity with the Fiscal 2019 BB Bonds and Purchased Bonds (*provided*, *however*, that any failure of the Authority to pay any bond, note or other similar evidence of indebtedness issued or assumed by the Authority that is secured by or payable from Revenues on a basis that is senior to or on a parity with the Fiscal 2019 BB Bonds and Purchased Bonds due solely as a result of an acceleration caused by a provider of credit and/or liquidity support for such debt shall not constitute an Event of Termination), or (iii) pursuant to the provisions of any resolution, indenture, contract or other instrument, the maturity of any bond, note or other similar evidence of indebtedness issued or assumed by the Authority that is secured by or payable from the Revenues on a basis that is senior to or on a parity with the Fiscal 2019 BB Bonds and Purchased Bonds, as the result of the occurrence of any default with respect to the payment of any principal or interest thereunder, shall be accelerated or required to be paid prior to the stated maturity thereof; *provided, however,* that no such failure to pay under clauses (i), (ii) or (iii) hereof will constitute an Event of Default under the Liquidity Facility if (A) such failure to pay was caused solely by an error or omission of an administrative or operational nature, (B) funds were available to enable the Authority to make such payment when due, (C) the Authority files a notice on EMMA within one Business Day of such failure stating that such failure to pay was caused solely by an error or omission of an administrative or operational nature, funds were available to enable the Authority to make such payment when due and payment will be within the time period set forth in subclause (D) and (D) such payment is made within two (2) Business Days after the Authority's actual knowledge of such failure to pay; or

(b) each of Moody's, S&P and Fitch shall assign a rating to any indebtedness of the Authority secured by or payable from the Revenues on a basis that is on a parity with the Fiscal 2019 BB Bonds and Purchased Bonds below "Baa3" in the case of Moody's and below "BBB-" in the case of S&P and Fitch, or withdraw or suspend any such rating, in each case, for a credit-related reason; or

(c) (i) (A) the Authority shall impose a debt moratorium, debt restructuring, debt adjustment or comparable extraordinary restriction on repayment when due and payable of the principal of or interest on the Fiscal 2019 BB Bonds or any bonds, notes or other similar evidence of indebtedness issued or assumed by the Authority that is secured by a lien on Revenues senior to or on a parity with the Fiscal 2019 BB Bonds or the Purchased Bonds or (B) the State or any other governmental authority having jurisdiction over the Authority shall, as a result of a finding or ruling or any other official action of the State or such governmental authority, impose a debt moratorium, debt restructuring, debt adjustments or comparable extraordinary restriction on repayment when due and payable of the principal of or interest on the Fiscal 2019 BB Bonds or all debt obligations of the Authority secured by a lien on Revenues senior to or on parity with the Fiscal 2019 BB Bonds or (ii) the Authority shall (A) apply for or consent to the appointment of, or there shall occur the taking or possession by, a receiver, custodian, trustee, liquidator or sequestrator (or other similar official) of itself or of all or of a substantial part of its property or assets, (B) admit in writing its inability to pay its debts as they become due or shall become insolvent within the meaning of Section 101(32) of the Bankruptcy Code, (C) make a general assignment for the benefit of creditors, (D) file a petition seeking to take advantage of any other law relating to bankruptcy, insolvency, reorganization, liquidation, winding-up or composition or adjustment of debts or (E) take any action for the purpose of effecting any of the acts set forth in clauses (A) through (D) above or (iii) an involuntary case or other proceeding shall be commenced against the Authority seeking liquidation, reorganization or other relief with respect to it or its debts under any bankruptcy, insolvency or other similar law now or hereafter in effect or seeking the appointment of a trustee, receiver, liquidator, custodian or other similar official for it or any substantial part of its property, and such involuntary case shall remain undismissed and unstayed for a period of 60 days; or (iv) an order for relief shall be entered against the Authority under the federal bankruptcy laws as now or hereafter in effect; or

(d) a final, nonappealable judgment shall be issued by a court of competent jurisdiction that the Fiscal 2019 BB Bonds (including Purchased Bonds) or any provision of the Liquidity Facility or of the Second Resolution relating to (A) the payment of principal or interest on any Tranche of Fiscal 2019 BB Bonds (including Purchased Bonds) or (B) the pledge of the Revenues supporting the Fiscal 2019 BB Bonds and Purchased Bonds shall cease for any reason to be valid and binding; or

(e) the Authority shall initiate legal proceedings or assert in legal proceedings or otherwise publicly contest, acting through an official of the Authority having authority to do so, that the Fiscal 2019 BB Bonds or any provision of the Liquidity Facility or of the Second Resolution relating to (A) the payment of principal or interest on any Tranche of Fiscal 2019 BB Bonds (including Purchased Bonds) or (B) the pledge of the Revenues supporting the Fiscal 2019 BB Bonds and Purchased Bonds is invalid or that the Authority has no liability thereon; or

(f) a final, non-appealable money judgment shall be entered by a court or other regulatory body of competent jurisdiction against the Authority in an amount in excess of $25,000,000 and the Authority shall have failed to satisfy said money judgment within 90 days from the first date when said judgment shall have become enforceable and subject to collection in accordance with its terms.

Events of Default Permitting Mandatory Tender or Conversion of Interest Rate

In the case of a Mandatory Tender or Conversion Event, the Liquidity Provider, in its sole discretion, may (x) give written notice of such Mandatory Tender or Conversion Event to the applicable Remarketing Agent(s) and to the Tender Agent requesting a mandatory tender of all or any portion of the Fiscal 2019 BB Bonds pursuant to the Second Resolution and stating that the obligation of the Liquidity Provider to purchase such Fiscal 2019 BB Bonds shall terminate 30 days after such notice is received by the Tender Agent, and on such date the Available Allocated Commitment for all Tranches shall terminate and the Liquidity Provider shall be under no obligation under the Liquidity Facility to purchase such Fiscal 2019 BB Bonds after such date or (y) give a written notice to the Authority directing the Authority to convert the interest rate on all or any portion of the Fiscal 2019 BB Bonds to an interest rate other than an Eligible Rate in accordance with the terms of the Liquidity Facility. Upon conversion to a rate other than an Eligible Rate, the Liquidity Provider agrees to purchase the Fiscal 202019 BB Bonds so converted and not remarketed, subject to and in accordance with the Liquidity Facility and thereafter shall bear interest at the Default Rate (as defined in the Liquidity Facility) so long as the Bank is the owner of such Fiscal 2019 BB Bonds.

The following are Mandatory Tender or Conversion Events:

(a) the Authority shall fail to pay when due any amount payable with respect to fees or certain other amounts (excluding debt service on any Purchased Bonds) payable to the Liquidity Provider under the Liquidity Facility or Fee Agreement (as defined in the Liquidity Facility) and such failure shall continue for seven (7) days; *provided*, *however*, that no such failure to pay shall constitute an Event of Default under the Liquidity Facility if (A) such failure to pay was caused solely by an error or omission of an administrative or operational nature, (B) funds were available to enable the Authority to make such payment when due and (C) such payment is made within two (2) Business Days after the Authority's actual knowledge of such failure to pay; or

(b) the Authority shall fail to observe one or more affirmative or negative covenants specified in the Liquidity Facility; or

(c) the Authority shall fail to pay when due any principal of or premium, if any, or interest on any Fiscal 2019 BB Bonds or Purchased Bonds, *but solely resulting from* a failure of the Authority to pay any Purchased Bonds due solely as a result of an acceleration caused by the Liquidity Provider; or

(d) any default by the Authority shall occur and be continuing in the payment of principal of or premium, if any, or interest on any bond, note or other similar evidence of indebtedness issued or assumed by the Authority that is secured by or payable from the Revenues (as defined in the Second Resolution) on a basis that is senior to or on a parity with Fiscal 2019 BB Bonds and Purchased Bonds, *but solely resulting from* a failure of the Authority to pay any bond, note or other similar evidence of indebtedness issued or assumed by the Authority that is secured by or payable from the Revenues on a basis that is senior to or on a parity with the Fiscal 2019 BB Bonds and Purchased Bonds due solely as a result of an acceleration caused by a provider of credit and/or liquidity support for such debt; or

(e) the occurrence and continuance of an Event of Default under the Second Resolution described under clauses (iii) or (iv) of "Summary of the Second Resolution – Defaults and Remedies" in Appendix C incorporated by reference; or

(f) any of Moody's, S&P or Fitch shall assign a rating to any indebtedness of the Authority secured by or payable from the Revenues on a basis that is on a parity with the Fiscal 2019 BB Bonds and Purchased Bonds below "Baa1" in the case of Moody's or "BBB+" in the case of S&P or Fitch, or withdraw or suspend any such rating, in each case, for a credit-related reason; or

(g) any material provision of the Liquidity Facility, the Second Resolution, the Fee Agreement or the Fiscal 2019 BB Bonds, other than a provision described in clause (d) under the heading "Events of Termination" above, shall at any time for any reason cease to be valid and binding on the Authority as a result of a ruling, finding, decree, order, legislative act or similar action by a governmental authority having jurisdiction over the Authority, or shall be declared in a final non-appealable judgment by any court having jurisdiction over the Authority to be null and void, invalid, or unenforceable, or the validity or enforceability thereof shall be publicly contested by the Authority, acting through an official of the Authority having the authority to do so.

Nonfinal Invalidity Judgment

In the event of the issuance of any judgment that is appealable or not final but is otherwise described in clause (d) above under "Events of Termination" (such judgment a "Nonfinal Invalidity Judgment"), if such Nonfinal Invalidity Judgment has not been overturned or stayed upon appeal within 30 days after issuance thereof, the Available Allocated Commitments for all Tranches and the obligation of the Liquidity Provider under the Liquidity Facility to purchase Fiscal 2019 BB Bonds each shall be suspended without notice or demand to any person, and thereafter the Liquidity Provider shall be under no obligation to purchase Fiscal 2019 BB Bonds from the thirtieth (30th) day after issuance of such Nonfinal Invalidity Judgment until such obligation is reinstated as specified below. The Liquidity Provider's obligation to purchase Fiscal 2019 BB Bonds following the stay of any Nonfinal Invalidity Judgment shall be suspended immediately (without the lapse of another thirty day time period) if such stay is lifted pursuant to a subsequent Nonfinal Invalidity Judgment. Following any such suspension, the Available Allocated Commitments and the obligation of the Liquidity Provider to purchase the Fiscal 2019 BB Bonds under the Liquidity Facility each immediately shall terminate and the Liquidity Provider shall be under no further obligation to purchase the Fiscal 2019 BB Bonds thereunder (i) from the date on which a court of competent jurisdiction shall enter a final, nonappealable judgment that the Fiscal 2019 BB Bonds or any provision of the Liquidity Facility or of the Resolution relating to (A) the payment of principal of or interest on the Fiscal 2019 BB Bonds or Purchased Bonds, as applicable, or (B) the pledge of Revenues supporting the Fiscal 2019 BB Bonds and Purchased Bonds shall cease for any reason to be valid and binding and (ii) from the date that is the earlier to occur of the Scheduled Termination Date and the date that is three years after the date of issuance of the relevant Nonfinal Invalidity Judgment, if on such date the relevant litigation is still pending and a final and nonappealable judgment related thereto has not been obtained. The Available Allocated Commitments and the obligation of the Liquidity Provider to purchase the Fiscal 2019 BB Bonds under the Liquidity Facility immediately shall be reinstated and the terms of the Liquidity Facility will continue in full force and effect (unless the Liquidity Facility shall otherwise have terminated by its terms) as if there had been no such suspension on the date on which a court of competent jurisdiction shall issue a judgment that the Fiscal 2019 BB Bonds or any provision of the Liquidity Facility or of the Second Resolution, as applicable, relating to (A) the payment of principal of or interest on the Fiscal 2019 BB Bonds or Purchased Bonds or (B) the pledge of Revenues supporting the Fiscal 2019 BB Bonds and Purchased Bonds, as applicable, is valid and binding.

Other Remedies Under the Liquidity Facility

Upon the occurrence of any Event of Default under the Liquidity Facility, the Liquidity Provider may deliver a notice (a "Default Rate Notice") to the Authority for purposes of increasing the Bank Rate (as defined in the Liquidity Facility) payable on the Fiscal 2019 BB Bonds to the Default Rate (as defined in the Liquidity Facility) or take any other actions permitted by applicable law. The Liquidity Provider may, at any time, in its discretion, revoke a Default Rate Notice by written notice to the Authority. Upon any such revocation of a Default Rate Notice or upon cure of an Event of Default pursuant to which a Default Rate Notice was delivered, such Default Rate Notice shall be deemed no longer to be in effect. Additionally, upon the occurrence of any Event of Default, the Liquidity Provider may exercise all available remedies under the Related Documents or otherwise available at law or in equity.

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