NEW ISSUE – BOOK-ENTRY ONLY

$1,316,204,456
PUERTO RICO AQUEDUCT AND SEWER AUTHORITY
Revenue Bonds, Series A (Senior Lien)

The Revenue Bonds, Series A of Puerto Rico Aqueduct and Sewer Authority (the "Authority"), the sole provider of public water and wastewater service in Puerto Rico, are being issued pursuant to a Master Agreement of Trust, dated as of March 1, 2008 (the "Trust Agreement"), with Banco Popular de Puerto Rico, trustee (the "Trustee"). The Series A Bonds will be issued, in part, to raise funds to be used by the Authority to refinance certain outstanding bond anticipation notes and lines of credit and to pay a portion of the cost of its Capital Improvement Program. Concurrently with the issuance of the Series A Bonds, the Authority is issuing (only to residents of the Commonwealth of Puerto Rico) its $22,445,000 Revenue Bonds, Series B (Senior Lien) (the "Series B Bonds" and together with the Series A Bonds, the "2008 Senior Bonds") for the same purposes. A glossary of terms not otherwise defined in this Official Statement can be found in *Appendix III*.

The 2008 Senior Bonds and any additional Senior Indebtedness that the Authority may incur from time to time under the Trust Agreement are payable solely from the Net Revenues of the Authority's Water and Wastewater Systems. The Trust Agreement also allows the Authority to issue Bonds and incur other obligations payable from such Net Revenues but with a claim thereon subordinate to the claim of Senior Indebtedness on such Net Revenues.

The Series A Bonds maturing July 1, 2024 will be issued as deferred income bonds (the "Convertible Capital Appreciation Bonds") with principal and interest accruing to July 1, 2011 (the "Current Interest Commencement Date"). The remainder of the Series A Bonds will pay interest currently until their payment in full (the "Current Interest Bonds").

The Series A Bonds will have the following characteristics:

- They will be dated their date of delivery.
- They will be registered under the book-entry only system of The Depository Trust Company ("DTC"). Purchasers will not receive definitive Bonds.
- Interest on the Current Interest Bonds will be payable on July 1, 2008 and on each January 1 and July 1 thereafter. Interest on the Convertible Capital Appreciation Bonds will be compounded from their date of delivery to and including the Current Interest Commencement Date, and such compounded interest will be payable only at maturity, in the manner set forth herein. No payments are due to the owners of the Convertible Capital Appreciation Bonds during the period from the date of delivery to the Current Interest Commencement Date. After the Current Interest Commencement Date, interest on the Convertible Capital Appreciation Bonds will be payable on January 1, 2012 and on each January 1 and July 1 thereafter.
- The Current Interest Bonds maturing after July 1, 2024 are subject to redemption at the option of the Authority, the earliest redemption date being July 1, 2018, as described herein.
- The inside cover page contains information concerning their maturity schedules, interest rates and price or yields.
- In the opinion of Nixon Peabody LLP, Bond Counsel, under existing law and assuming compliance with the tax covenants described herein, and the accuracy of certain representations and certifications made by the Authority described herein, interest on the Series A 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"). Bond Counsel is also of the opinion that such interest is not treated as a preference item in calculating the alternative minimum tax imposed under the Code with respect to individuals and corporations. Interest on the Series A Bonds is, however, included in the adjusted current earnings of certain corporations for purposes of computing the alternative minimum tax imposed on such corporations. Bond Counsel is further of the opinion that the Series A Bonds and interest thereon are exempt from state, Commonwealth and local income taxation. See *Tax Matters* herein regarding certain other tax considerations.
- The Authority expects that the Series A Bonds will be available for delivery to DTC on or about March 18, 2008.

The scheduled payment of principal of and interest on the Series A Bonds maturing on July 1 of the years 2015, 2016, 2025, 2028 and 2047 totaling $384,115,000 in principal amount will be guaranteed under a financial guaranty insurance policy to be issued concurrently with the delivery of the Series A Bonds by ASSURED GUARANTY CORP.

The issuance of the Series A Bonds and their purchase by the Underwriters are subject to the approval of legality by Nixon Peabody LLP, New York, New York, Bond Counsel, and certain other conditions. Sidley Austin LLP, New York, New York will pass upon certain legal matters for the Underwriters, and Cancio Covas & Santiago, LLP, San Juan, Puerto Rico, will pass upon certain legal matters for the Authority.

The above-mentioned Bonds are not a debt of the Commonwealth of Puerto Rico or any of its municipalities or other political subdivisions, other than the Authority, and neither the Commonwealth of Puerto Rico nor any such municipalities or other political subdivisions, other than the Authority, shall be liable for the payment of the principal of or interest on said Bonds.

CITI **MORGAN STANLEY**

BEAR, STEARNS & CO. INC.

Banc of America Securities LLC	**BBVAPR MSD**	**DEPFA First Albany Securities LLP**	**Eurobank MSD**
Goldman, Sachs & Co.	**JP Morgan**	**Lehman Brothers**	**Loop Capital Markets**
Merrill Lynch & Co.	**Oppenheimer & Co. Inc.**	**Oriental Financial Services**	**Popular Securities**
RBC Capital Markets	**Samuel Ramirez & Co.**	**Santander Securities**	**Scotia Capital**
UBS Investment Bank			**Wachovia Capital Markets, LLC**

March 7, 2008

$1,316,204,456
Puerto Rico Aqueduct and Sewer Authority
Revenue Bonds, Series A (Senior Lien)

$93,155,000 Serial Bonds

Year	Amount	Interest Rate	Yield	CUSIP No.†	Year	Amount	Interest Rate	Yield/Price	CUSIP No.†
2012	$12,290,000	5%	4.10%	745160PS4	2015*	$14,230,000	5%	3.90%	745160PV7
2013	12,905,000	5	4.25	745160PT2	2016*	14,940,000	5	4.06	745160PW5
2014	13,550,000	5	4.40	745160PU9	2025*	25,240,000	5	100	745160PY1

$127,924,456 Convertible Capital Appreciation Term Bonds 6⅛% due July 1, 2024, Price 100%; CUSIP No.† 745160PX3**

$83,555,000 Term Bonds 5% due July 1, 2028*, Yield 5.09%; CUSIP No.† 745160PZ8

$381,945,000 Term Bonds 6% due July 1, 2038, Yield 6.10%; CUSIP No.† 745160QA2

$383,475,000 Term Bonds 6% due July 1, 2044, Yield 6.15%; CUSIP No.† 745160QB0

$246,150,000 Term Bonds 5⅛% due July 1, 2047*, Yield 5.27%; CUSIP No.† 745160QC8

Table of Appreciated Values of Convertible Capital Appreciation Bonds
(per $5,000 at July 1, 2011)

Date	Accreted Value
March 18, 2008	$ 4,100.80
July 1, 2008	4,172.20
January 1, 2009	4,299.95
July 1, 2009	4,431.65
January 1, 2010	4,567.35
July 1, 2010	4,707.25
January 1, 2011	4,851.40
July 1, 2011	5,000.00

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† CUSIP data herein are provided by Standard & Poor's, CUSIP Service Bureau, a division of The McGraw-Hill Companies, Inc. CUSIP numbers have been assigned by an independent company not affiliated with the Authority and are included solely for the convenience of the holders of the Series A Bonds. The Authority is not responsible for the selection or uses of these CUSIP numbers, and no representation is made as to their correctness on the Series A Bonds as a result of various subsequent actions, including, but not limited to, a refunding in whole or in part of the Series A Bonds.

* Insured by Assured Guaranty Corp. See *Bond Insurance* herein.

** As described under "General − Convertible Capital Appreciation Bonds" in *The Series A Bonds*, the Convertible Capital Appreciation Bonds will begin to accrue current interest at this rate per annum beginning on July 1, 2011.

No dealer, broker, sales representative or other person has been authorized to give any information or to make any representations, other than those contained in this Official Statement, and, if given or made, such information or representations must not be relied upon. This Official Statement does not constitute an offer to sell, or the solicitation of an offer to buy, nor shall there be any sale of the Series A Bonds offered hereby by any person in any jurisdiction in which it is unlawful for such person to make such offer, solicitation or sale. The information set forth herein has been obtained from Puerto Rico Aqueduct and Sewer Authority, the Commonwealth of Puerto Rico and other sources which are believed to be reliable but is not guaranteed as to accuracy or completeness and is not to be construed as a representation by the Underwriters. The information and expressions of opinion herein are subject to change without notice, and neither the delivery of this Official Statement nor any sale made hereunder shall under any circumstances create any implication that there has been no change in the information or opinions set forth herein after the date of this Official Statement. The Underwriters have provided the following sentence and the next paragraph for inclusion in this Official Statement. The Underwriters have reviewed the information in this Official Statement in accordance with, and as part of, their respective responsibilities to investors under the federal securities laws as applied to the facts and circumstances of this transaction, but the Underwriters do not guarantee the accuracy or completeness of such information.

IN CONNECTION WITH THIS OFFERING, THE UNDERWRITERS MAY EFFECT TRANSACTIONS WHICH STABILIZE OR MAINTAIN THE MARKET PRICES OF THE BONDS OFFERED HEREBY AT LEVELS ABOVE THOSE WHICH MIGHT OTHERWISE PREVAIL IN THE OPEN MARKET. SUCH STABILIZING, IF COMMENCED, MAY BE DISCONTINUED AT ANY TIME.

Assured Guaranty makes no representation regarding the Series A Bonds or the advisability of investing in the Series A Bonds. In addition, Assured Guaranty makes no representation regarding, nor does it accept any responsibility for the accuracy or completeness of this Official Statement or any information or disclosure contained herein, or omitted herefrom, other than with respect to the accuracy of the information regarding Assured Guaranty supplied by Assured Guaranty and presented under the heading *Bond Insurance* and *Exhibit V* – Specimen Financial Guaranty Insurance Policy.

TABLE OF CONTENTS

	Page
SUMMARY STATEMENT	v
INTRODUCTORY STATEMENT	1
RISK FACTORS AND INVESTMENT CONSIDERATIONS	4
PLAN OF FINANCING	7
General	7
Application of Proceeds of 2008 Senior Bonds	8
SECURITY FOR THE BONDS	9
Source of Payment	9
Flow of Funds	9
Reserve Funds	10
Rate Covenant	12
Additional Bonds	13
Events of Default	14
THE SERIES A BONDS	14
General	14
Book-Entry Only System	15
Transfers	17
Discontinuance of the Book-Entry Only System	17
Redemption	17
Notice of Redemption	18
Concerning the Policy for the Insured Series A Bonds	19
BOND INSURANCE	19
The Policy	19
Assured Guaranty	20
THE AUTHORITY	21
Powers	21
Management	22
Employees and Labor Relations	24
Pension Plan	25
Conclusions of Consulting Engineer Regarding Management and Staffing	25
AUTHORITY CONSULTANTS	25
THE WATER AND WASTEWATER SYSTEMS	26
Introduction	26
The Water System	27
The Wastewater System	30
Operation and Maintenance	33

Summary of Certain Conclusions of the Consulting Engineer....34
RATES, BILLINGS AND COLLECTIONS....35
Rate Setting Powers....35
Authority Budgeting Process....37
Rate Structure and Current Rates....37
Billings and Collections....38
ENVIRONMENTAL MATTERS....38
Water System Regulation....39
Wastewater System Regulation....40
Regulatory Compliance....41
Other Regulatory and Compliance Matters....44
CAPITAL IMPROVEMENT PROGRAM....44
General....44
Summary of CIP....45
Water System CIP....46
Wastewater System CIP....46
Sources of Funds....47
DEBT....47
Commonwealth Guaranteed Indebtedness....48
Commonwealth Supported Obligations....49
Operating Reserve Fund Line of Credit....50
Term Loan....50
Bond Anticipation Notes....50
ANNUAL DEBT SERVICE....50
FINANCIAL OPERATIONS....52
Management's Discussion of Historical Operating Results....53
Management's Discussion of Forecasted Operating Results....54
PUERTO RICO INFRASTRUCTURE FINANCING AUTHORITY....57
The PRIFA-PRASA Agreement....57
LITIGATION....57
TAX MATTERS....58
Federal Income Taxes....58
State Taxes....58
Original Issue Discount....58
Original Issue Premium....58
Ancillary Tax Matters....59
Changes in Federal Tax Law and Post Issuance Events....59
CONTINUING DISCLOSURE....60
ELIGIBILITY OF 2008 SENIOR BONDS....61
UNDERWRITING....61
COMMONWEALTH COVENANT....62
GOVERNMENT DEVELOPMENT BANK FOR PUERTO RICO....62
LEGAL MATTERS....62
EXPERTS....63
INDEPENDENT AUDITORS....63
RATINGS....63
MISCELLANEOUS....63

APPENDIX I - Audited Financial Statements of the Authority for Fiscal Years ended June 30, 2006 and 2007

APPENDIX II - Consulting Engineer's Report

APPENDIX III - Summary of the Trust Agreement

APPENDIX IV - Form of Opinion of Bond Counsel

APPENDIX V - Specimen Financial Guaranty Insurance Policy

SUMMARY STATEMENT

The following summary statement is subject in all respects to the additional information contained in this Official Statement, including the appendices attached hereto. Defined terms have the same meanings here as elsewhere in this Official Statement.

The Authority:

The Authority, a governmental instrumentality of the Commonwealth of Puerto Rico, was established in 1945 for the purpose of owning and operating the public water supply and wastewater systems and is the sole provider of public water and wastewater services in Puerto Rico. The Authority's management has recently organized its service area into five regions to decentralize the management and administration of many operational matters and has taken and is continuing to take other steps designed to strengthen and improve the operation and financial condition of the Authority.

The Systems:

The Systems provide water and wastewater service in Puerto Rico to 97% and 55% of Puerto Rico's population, respectively. The Water System provides an estimated average of 591 million gallons per day ("mgd") of water to 1,259,415 accounts, of which 1,178,677 are residential accounts, representing 94% of the Water System customers. The Wastewater System consists of several collection systems that discharge into 62 wastewater treatment plants. The Wastewater System serves 729,413 accounts, of which 678,437 are residential accounts, representing 93% of the Authority's Wastewater System customers. The Wastewater System treats on average 245 mgd of wastewater. All information in this paragraph is as of June 30, 2007.

Capital Improvement Program:

The Capital Improvement Program for the five year period ending June 30, 2012 (the "CIP") is designed to modernize the Systems, protect public health, safeguard environmental quality, permit continued economic development and meet the requirements of a 2006 EPA Consent Decree and the 2006 Drinking Water Settlement Agreement negotiated with the United States Environmental Protection Agency ("EPA") and Puerto Rico Department of Health ("DOH"), respectively. The CIP is projected to cost $1.98 billion. The Authority's governing board reviews and adjusts (if needed) the CIP annually.

Financing Plan:

The 2008 Senior Bonds are being issued to provide funds for a portion of the Authority's CIP and a deposit into the Senior Debt Service Reserve Account and to repay in full certain bond anticipation notes, a substantial portion of which is held by Citigroup Global Markets Inc., an underwriter of the 2008 Senior Bonds. In addition, a portion of the proceeds of the 2008 Senior Bonds will be used to repay certain lines of credit provided by Government Development Bank for Puerto Rico to the Authority as interim

financing for a portion of its CIP and for working capital purposes. Additional financing for the CIP is expected to be provided chiefly through the issuance of Additional Senior Bonds, federal and other grants and internally generated funds. On the date of delivery of the 2008 Senior Bonds, the Authority intends to issue its $159,055,000 Revenue Refunding Bonds, 2008 Series A and $125,700,000 Revenue Refunding Bonds, 2008 Series B (each Guaranteed by the Commonwealth of Puerto Rico) (collectively, the "2008 Guaranteed Bonds"), for the purpose of refinancing all of the Authority's outstanding Revenue Bonds, Series 1995 (Guaranteed by the Commonwealth of Puerto Rico) (the "1995 Commonwealth Guaranteed Bonds"), in order to achieve cash flow benefits. The 2008 Guaranteed Bonds will be issued under a separate bond resolution, and the pledge of Revenues securing the 2008 Guaranteed Bonds is subordinate to any Bonds issued under the Trust Agreement.

The table below shows the Authority's debt as of October 31, 2007, and as adjusted to give effect to the issuance of the 2008 Senior Bonds and the 2008 Guaranteed Bonds, the repayment of certain Guaranteed RUS Bonds and the incurrence of additional Revolving Funds loans. The Operating Reserve Fund Line of Credit will allow the Authority to draw up to $150 million for the working capital and other purposes, as set forth in the Trust Agreement, but has no drawn amount outstanding.

	October 31, 2007	**As Adjusted**
	(in thousands)	
Revenue Bonds:		
Series A Bonds (Senior).....	$ --	$1,316,204
Series B Bonds (Senior)	--	22,445
Guaranteed Obligations:		
1995 Guaranteed Bonds.....	262,825	--
2008 Guaranteed Bonds.....	--	284,755
Guaranteed RUS Bonds	246,314	244,355
Revolving Funds Loans	251,483	281,720
Superaqueduct Obligations.....	360,610	360,610
	$1,121,232	$2,510,089
Notes:		
Term Loan (Senior Subordinate lien)	$250,000	$250,000
Bond Anticipation Notes.....	850,000	--
Lines of Credit	129,198	53,146
Operating Reserve Fund Line of Credit (undrawn)	--	--
Total Indebtedness payable.....	$2,350,430	$2,813,235

Security for 2008 Senior Bonds:

Revenue Pledge ..... The 2008 Senior Bonds are payable solely from and secured by a pledge of the Net Revenues of the Systems. As Senior Bonds, the 2008 Senior Bonds have the first pledge of Net Revenues under the Trust Agreement after payment of Current Expenses.

Debt Service Reserve ..... The Authority will deposit into the 2008 Senior Debt Service Reserve Account from the proceeds of the 2008 Senior Bonds an amount equal to the lesser of the maximum Annual Debt Service on the 2008 Senior Bonds,

125% of average Annual Debt Service and 10% of the principal amount of the 2008 Senior Bonds.

Rates ..... Rates, fees and charges are set and imposed solely by the Authority, pursuant to a public hearing procedure required by law, and are not subject to regulatory approval by the Commonwealth of Puerto Rico or any of its agencies.

Rate Covenant ..... The Authority has covenanted to establish and collect rates, fees and charges so that in each Fiscal Year (A) its Revenues will be sufficient to pay Current Expenses, Annual Debt Service on Indebtedness, restore deficiencies in reserves therefor and set aside moneys for capital improvements and a rate stabilization fund and (B) its Net Revenues will be at least equal to the greater of (i) 120% of aggregate Annual Debt Service for such Fiscal Year on Outstanding Senior Indebtedness, (ii) 110% of aggregate Annual Debt Service for such Fiscal Year on Outstanding Senior and Senior Subordinate Indebtedness, and (iii) 100% of Annual Debt Service for such Fiscal Year on Outstanding Indebtedness of the Authority plus required deposits, if any, to meet debt service, operating and capital improvement reserve requirements.

Additional Indebtedness ..... *Senior Indebtedness.* Additional Senior Indebtedness, secured on a parity with the 2008 Senior Bonds, may be issued or incurred for any lawful purpose, including capital improvements to the Systems, and to refund or otherwise refinance any Outstanding Indebtedness and other Authority obligations, subject to compliance with certain financial tests in the Trust Agreement.

Other Indebtedness. Additional Senior Subordinate and Subordinate Indebtedness may also be issued or incurred for any lawful purpose, subject to compliance with certain other financial tests in the Trust Agreement.

2006 EPA Consent Decree:

The Wastewater System is subject to consent decrees arising from enforcement actions by the EPA under the federal Clean Water Act to settle penalty claims against the Authority, establish compliance schedules for plant improvements, and impose certain planning and operating requirements on the Authority. The most recent decree, entered into with EPA after a federal grand jury in 2006 indicted and charged the Authority with violations of the Clean Water Act for illegally discharging pollutants from nine sanitary wastewater treatment plants and sludge treatment systems at five drinking water treatment plants, was filed with the federal court in Puerto Rico in June 2006 (the "2006 EPA Consent Decree"). Under the 2006 EPA Consent Decree, the Authority paid $1 million to the United States as a civil penalty and has budgeted approximately $461 million in the CIP for 2006 EPA Consent Decree projects. As a penalty stemming from the Authority's criminal indictment and guilty plea agreement, the Authority was placed on probation for five years and is required to pay $9 million to the U.S. Treasury in five annual installments. Until the $9 million criminal fine is satisfied in full, all of the Authority's real property will be subject to a statutory lien held by the federal government entitling it to foreclose on such property in order to satisfy that monetary obligation of the Authority. The Authority has recorded a reserve on its financial statements for the full amount owed to EPA.

2006 Drinking Water Settlement Agreement:

In December 2006, the Authority settled litigation brought by the Puerto Rico Department of Health seeking enforcement of administrative orders of the Department under the Safe Water Drinking Act and violations by the Authority of previous consent agreements addressing violations to monitoring and turbidity regulatory requirements (the "2006 Drinking Water Settlement Agreement"). The 2006 Drinking Water Settlement Agreement obligates the Authority to pay a $1 million civil penalty to the Commonwealth Treasury, which was paid on April 4, 2007, and to establish an escrow account for certain accumulated stipulated penalties, if incurred by the Authority, which account will be used to finance the Authority's compliance projects under the 2006 Drinking Water Settlement Agreement and under local and federal laws applicable to the Water System. Under the 2006 Drinking Water Settlement Agreement, the Authority has budgeted approximately $360 million in the CIP for 2006 Drinking Water Settlement Agreement projects.

Consulting Engineer and Report:

MP Engineers of Puerto Rico, PSC ("MPPR") and its subcontractor, Malcolm Pirnie, Inc., have prepared a report on the Authority (attached as Appendix II). MPPR and Malcolm Pirnie are also team members of one of the Authority's regional program management consultants assisting the Authority with CIP planning, design and management.

Litigation:

There is currently no litigation pending or threatened that will affect the issuance or validity of the 2008 Senior Bonds or any other outstanding Indebtedness of the Authority.

Risk Factors:

An investment in the 2008 Senior Bonds involves a degree of risk. A purchaser of such Bonds is advised to read *Risk Factors and Investment Considerations* herein for a discussion of certain risk factors which should be considered in connection with an investment in the 2008 Senior Bonds.

$1,316,204,456
PUERTO RICO AQUEDUCT AND SEWER AUTHORITY
Revenue Bonds, Series A (Senior Lien)

INTRODUCTORY STATEMENT

The purpose of this Official Statement, which includes the cover page, the summary statement and the appendices and the information incorporated by reference below, is to provide certain information in connection with the issuance and sale by Puerto Rico Aqueduct and Sewer Authority (the "Authority") of $1,316,204,456 principal amount of its Revenue Bonds, Series A (Senior Lien) (the "Series A Bonds"). Certain capitalized terms used in this Official Statement are defined in "Definitions of Certain Terms" in Appendix III - Summary of the Trust Agreement. Concurrently with the issuance of the Series A Bonds, the Authority is issuing (only to residents of the Commonwealth of Puerto Rico) its $22,445,000 Revenue Bonds, Series B (Senior Lien) (the "Series B Bonds" and together with the Series A Bonds, the "2008 Senior Bonds"). The scheduled payment of principal of and interest on the Series A Bonds maturing on July 1 of the years 2015, 2016, 2025, 2028 and 2047 (the "Insured Bonds") totaling $384,115,000 in principal amount will be guaranteed under a financial guaranty insurance policy to be issued concurrently with the delivery of the Series A Bonds by Assured Guaranty Corp. ("Assured Guaranty"). See *Appendix V* for a specimen of the financial guaranty insurance policy (the "Policy") of Assured Guaranty.

The Authority. The Authority is a governmental instrumentality of the Commonwealth of Puerto Rico (the "Commonwealth") created by Act No. 40 of the Legislature of Puerto Rico, approved May 1, 1945, as amended and reenacted (the "Act"), for the purpose of owning and operating the public water supply and wastewater systems in the Commonwealth (the "Systems") and is the sole provider of public water and wastewater services in Puerto Rico.

The Authority's water supply system (the "Water System") serves most (approximately 97%) of Puerto Rico's population. The Authority's wastewater system (the "Wastewater System") serves more than half (approximately 55%) of Puerto Rico's population. The latest Puerto Rico Planning Board population estimate for Puerto Rico (2006) was approximately four million. Detailed demographic and economic information concerning Puerto Rico is incorporated by reference as set forth below.

The Authority has contracted MP Engineers of Puerto Rico, PSC ("MPPR") and its subcontractor, Malcolm Pirnie, Inc. (together, the "Consulting Engineer"), to prepare a report (the "Consulting Engineer's Report") on the condition of the Authority's Systems, on its capital improvement program for the five fiscal year period ending June 30, 2012 (the "CIP") and on its financial condition/projections (attached hereto as *Appendix II*) and to provide the services of the Consulting Engineer under the Trust Agreement (hereinafter mentioned). The Consulting Engineer is also a team member of the Authority's regional program management consultants providing planning, design and management for the portion of the Authority's CIP in its North region. As set forth in Section 8 of the Consulting Engineer's Report and in "Summary of Certain Conclusions of the Consulting Engineer" under *The Water and Wastewater Systems* below, the Consulting Engineer has concluded that the CIP meets the operational and regulatory needs of the Systems.

As set forth in more detail in this Official Statement, the Authority faces significant operating, regulatory compliance, rate setting and financial challenges. Management, which has been running the Authority since early 2004 upon its transition from private sector management, has demonstrated the willingness to confront these challenges and has achieved success in the four years in which it has been in control. There remain, however, many hurdles to overcoming these challenges, some of which are described herein, and it may not be possible for the Authority to accomplish its goals of regulatory compliance, completion of major Systems' improvements and sustaining its financial independence. See *Risk Factors and Investment Considerations*.

Purpose of the 2008 Senior Bonds. The 2008 Senior Bonds are being issued in part to provide funds for a portion of the Authority's CIP. The CIP is estimated to cost, in current dollars, $1.98 billion. In the current CIP, approximately $461 million is budgeted for projects covering portions of the Water and Wastewater Systems

specifically required to comply with a court order approving a comprehensive and all inclusive consent decree (the "2006 EPA Consent Decree") resulting from negotiations between the Authority and the United States Environmental Protection Agency ("EPA") to resolve criminal sanctions and certain claims under prior administrative enforcement actions and consent decrees based on federal effluent violations, operation and maintenance violations, and unlawful discharge violations (the "PRASA Clean Water Act Litigation"). The CIP also requires the investment of $142 million to comply with various prior decrees that were not superseded by the 2006 EPA Consent Decree. The 2006 EPA Consent Decree was approved by the United States District Court for the District of Puerto Rico on January 11, 2007. Also in 2006, the Authority entered into a comprehensive agreement with Puerto Rico Department of Health ("DOH") to resolve alleged violations by the Authority under the federal Safe Drinking Water Act and two prior settlement agreements (the "2006 Drinking Water Settlement Agreement"). In the current CIP, approximately $360 million is budgeted for projects required to comply with the terms of the 2006 Drinking Water Settlement Agreement. See *Environmental Matters*. The remainder of the CIP is devoted to Systems' improvements and modernization.

Security for the 2008 Senior Bonds. The 2008 Senior Bonds will be issued under and secured by a Master Agreement of Trust, dated as of March 1, 2008 (the "Trust Agreement"), between the Authority and Banco Popular de Puerto Rico, trustee (the "Trustee"), one or more series supplements thereto fixing their details (the "2008 Series Supplement") and a resolution of the Governing Board of the Authority (the "Bond Resolution"). The 2008 Senior Bonds and any Additional Bonds issued on a parity therewith under the Trust Agreement are collectively referred to in this Official Statement as the "Senior Bonds". Under the Trust Agreement, the Authority is also permitted to incur other Indebtedness on a parity with the Senior Bonds, and such Indebtedness together with the Senior Bonds are referred to as "Senior Indebtedness". In addition, the Authority is permitted under the Trust Agreement to issue two additional types of Bonds with a claim on Net Revenues subordinate to the claim on Net Revenues of the Senior Indebtedness. "Senior Subordinate Bonds" are issuable for any lawful purpose of the Authority upon the Authority's satisfying the various financial tests for their issuance (see *Security for the Bonds*) and together with other Indebtedness permitted to be incurred by the Authority on a parity with the Senior Subordinate Bonds in satisfaction of the same tests (collectively, "Senior Subordinate Indebtedness") will have a first claim on Net Revenues, after the claim of the Senior Indebtedness has been satisfied. "Subordinate Bonds" are issuable also for any lawful purpose of the Authority upon the Authority's satisfying the various other financial tests for their issuance (see *Security for the Bonds*) and together with other Indebtedness permitted to be incurred by the Authority on a parity with the Subordinate Bonds in satisfaction of the same tests (collectively, "Subordinate Indebtedness") will have a claim on Net Revenues subordinate to the claim of the Senior Indebtedness and the Senior Subordinate Indebtedness. Collectively, the Senior Bonds, Senior Subordinate Bonds and Subordinate Bonds are referred to herein as the "Bonds". Under the Trust Agreement, the Revenues derived by the Authority from the Systems, after payment of the Systems' Current Expenses ("Net Revenues"), are pledged in the priority set forth therein to the payment of the principal of and premium, if any, and interest on the Bonds and other Indebtedness on a parity therewith and maintaining reserves therefor. Net Revenues remaining after the payment of the Bonds and such parity Indebtedness (and maintaining such reserves) will be used to maintain the required balance in the Operating Reserve Fund (initially to be satisfied through a $150 million, five-year, line of credit to be granted to the Authority concurrently with the issuance of the 2008 Senior Bonds by Government Development Bank for Puerto Rico ("Development Bank") and under which the Authority will be allowed to draw funds to cover any Current Expenses that are not otherwise paid due to Revenue shortfalls, among other situations set forth in the Trust Agreement) and in the Capital Improvement Fund and thereafter will be used to pay debt service on the Authority's outstanding Commonwealth Guaranteed Indebtedness and Commonwealth Supported Obligations. See *Security for the Bonds*.

The Authority has currently outstanding $262,825,000 principal amount of Revenue Refunding Bonds, Series 1995, Guaranteed by the Commonwealth of Puerto Rico (the "1995 Commonwealth Guaranteed Bonds"), that were issued under Resolution No. 1583, adopted by the Authority on December 7, 1995. On the date of delivery of the 2008 Senior Bonds, the Authority will issue its Revenue Refunding Bonds, 2008 Series A and 2008 Series B (each Guaranteed by the Commonwealth of Puerto Rico) (collectively, "the 2008 Commonwealth Guaranteed Bonds") to refinance all of the outstanding 1995 Commonwealth Guaranteed Bonds. In connection with the issuance of the 2008 Commonwealth Guaranteed Bonds, the Authority will amend and restate, as of March 7, 2008, said Resolution No. 1583 (as so amended and restated, "Resolution 1583"). The Authority also has currently outstanding $243,801,000 total principal amount of multiple series of Revenue Bonds, Guaranteed by the Commonwealth of Puerto Rico, issued to Rural Utilities Service of the United States Department of Agriculture (the "Guaranteed RUS Bonds" and together with the 2008 Commonwealth Guaranteed Bonds and any other bonds

issued before July 1, 2010 under Resolution 1583 or Resolution 1224, hereinafter mentioned, the "Guaranteed Bonds") that were issued under Resolution No. 1224, adopted by the Authority on August 12, 1986, as amended ("Resolution 1224" and together with Resolution 1583, the "Guaranteed Bond Resolution"). Under the Guaranteed Bond Resolution, after the release of the Trust Agreement, all of the Authority's revenues are deposited into a revenue fund held by the fiscal agent thereunder (also Banco Popular de Puerto Rico) to be used to pay debt service on the Guaranteed Bonds.

This Official Statement includes as *Appendix I* the Authority's audited financial statements as of and for the fiscal years ended June 30, 2006 and 2007.

Incorporation of Certain Information by Reference. This Official Statement also includes the following documents, which have been filed with each nationally recognized municipal securities information repository ("NRMSIR") and are incorporated herein by reference:

> (i) the Comprehensive Annual Financial Report of the Commonwealth of Puerto Rico for the fiscal year ended June 30, 2006, as amended (the "Commonwealth Annual Financial Report"), which includes the basic financial statements of the Commonwealth as of and for the fiscal year ended June 30, 2006, together with the independent auditor's report thereon, dated August 1, 2007, of KPMG LLP, certified public accountants. KPMG LLP did not audit the financial statements of the Public Buildings Authority capital project fund or The Children's Trust special revenue fund (major funds), and certain activities, funds and component units separately identified in its report. Those financial statements were audited by other auditors whose reports have been furnished to KPMG LLP, and its opinions, insofar as they relate to the amounts included for activities, funds, and component units separately identified in its report, are based solely on the reports of the other auditors. The report of KPMG LLP contains an explanatory paragraph referring to the Commonwealth's adoption of Governmental Accounting Standards Board ("GASB") Statement No. 42, *Accounting and Financial Reporting for Impairment of Capital Assets and for Insurance Recoveries*, as of June 30, 2006; and
>
> (ii) the Commonwealth of Puerto Rico Financial Information and Operating Data Report, dated January 1, 2008 (the "Commonwealth Report").

Any Appendix of an Official Statement of the Commonwealth or any instrumentality of the Commonwealth containing the same information as the Commonwealth Annual Financial Report, filed with each NRMSIR and the Municipal Securities Rulemaking Board ("MSRB") or any new or revised Commonwealth Report or Commonwealth Annual Financial Report or other document containing information that modifies or supersedes the information contained in the Commonwealth Report or in the Commonwealth Annual Financial Report that is filed with each NRMSIR, in each case after the date hereof and prior to the termination of the offering of the 2008 Senior Bonds, shall be deemed to be incorporated by reference into this Official Statement and to be part of this Official Statement from the date of filing of such document. Any statement contained in such Commonwealth Annual Financial Report or Commonwealth Report or contained elsewhere herein shall be deemed to be modified or superseded for purposes of this Official Statement to the extent that a statement contained herein or in any other subsequently filed document modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this Official Statement.

In addition, any information regarding the Authority that modifies or supersedes the information contained in this Official Statement that is filed with each NRMSIR after the date hereof and prior to the termination of the offering of the 2008 Senior Bonds shall be deemed to be incorporated by reference into this Official Statement and to be part of this Official Statement from the date of filing of such information. Any information contained herein regarding the Authority shall be deemed to be modified or superseded for purposes of this Official Statement to the extent that information contained in any other subsequently filed document modifies or supersedes such information. Any information so modified or superseded shall be deemed to constitute part of this Official Statement only as so modified or superseded.

Copies of the Commonwealth Annual Financial Report and the Commonwealth Report may be obtained by contacting a NRMSIR. The address of each NRMSIR is set forth in "CONTINUING DISCLOSURE" below. The

address of the MSRB is 1900 Duke Street, Suite 600, Alexandria, Virginia 22314, telephone number (703) 797-6600.

Forward Looking Statements. This Official Statement, including information incorporated in this Official Statement by reference, contains certain "forward-looking statements" concerning the Authority's and the Commonwealth's operations and financial condition. These statements are based upon a number of assumptions and estimates which are subject to significant uncertainties, many of which are beyond the control of the Authority and the Commonwealth. The words "may," "would," "could," "will," "expect," "anticipate," "believe," "intend," "plan," "estimate" and similar expressions are meant to identify these forward-looking statements. Actual results may differ materially from those expressed or implied by these forward-looking statements.

What Follows. There follow in this Official Statement brief descriptions of the Act, the 2008 Senior Bonds and the Trust Agreement. Such descriptions do not purport to be complete and are qualified in their entirety by reference to such documents. All references to the 2008 Senior Bonds are qualified in their entirety by reference to the definitive form thereof contained in the 2008 Series Supplement. Copies of all such documents and agreements, including the documents incorporated herein by reference, are available for inspection during regular business hours at the offices of Development Bank, Roberto Sánchez Vilella Government Center, Avenida de Diego, Parada 22, San Juan, Puerto Rico 00940, telephone number (787) 722-2525, or at the principal corporate trust office of the Trustee, San Juan, Puerto Rico.

RISK FACTORS AND INVESTMENT CONSIDERATIONS

AN INVESTMENT IN THE 2008 SENIOR BONDS INVOLVES A DEGREE OF RISK. A PURCHASER OF THE 2008 SENIOR BONDS IS ADVISED TO READ THIS SECTION FOR A DISCUSSION OF CERTAIN RISK FACTORS WHICH SHOULD BE CONSIDERED IN CONNECTION WITH AN INVESTMENT IN THE 2008 SENIOR BONDS. THE FACTORS LISTED BELOW, AMONG OTHERS, COULD ADVERSELY AFFECT THE AUTHORITY'S OPERATIONS AND REVENUES AND EXPENSES OF THE SYSTEMS TO AN EXTENT WHICH CANNOT BE DETERMINED AT THIS TIME. ANY PURCHASER OF THE 2008 SENIOR BONDS MUST MAKE A DECISION AS TO THE CREDIT-WORTHINESS OF THE AUTHORITY.

The following represents a summary of certain of the risks associated with the 2008 Senior Bonds. Each prospective investor should carefully examine its financial condition in order to make a judgment as to its ability to bear the risk of an investment in the 2008 Senior Bonds. The following discussion of risk factors is intended only as a summary and does not purport to identify all the risk factors that may affect the Authority's ability to pay debt service on the 2008 Senior Bonds.

1. *The Authority's ability to charge and collect rates sufficient to provide for debt service on the Bonds and other Indebtedness.* The imposition and collection by the Authority of rates, fees and charges for services of the Systems provide the only security for payment of the 2008 Senior Bonds. Although the Authority will set aside moneys in various reserve and other funds, these funds will not be sufficient to provide long-term coverage should the Authority encounter prolonged financial difficulty. The Revenues of the Authority are dependent on the rates which it charges its customers. The inability of or failure by the Authority to charge rates and collect sufficient Revenues could result in the Authority being unable to meet coverage requirements or debt service payments on its Bonds. The revenue and expense projections prepared by the Authority and reviewed by the Consulting Engineer that show the Authority is able to meet the coverage requirements of the Trust Agreement are premised in part on annual rate adjustments under the current rate resolution (see *Rates, Billings and Collections*), as well as upon maintaining collection rates at or above 93.3% (the average rate achieved by the Authority for the period encompassing the beginning of the two-stage, 128% rate increase in October 2005 to October 31, 2007). The Authority has no history of such frequent changes in rates. Prior to the two-stage rate increase, the last time the Authority had changed its rates was in 1986. If the Authority's financial results do not meet the above assumptions regarding rates and collections, its ability to generate sufficient Net Revenues to pay debt service on the 2008 Senior Bonds may be adversely affected.

In addition, the Authority has a $250 million term loan outstanding with various commercial banks. Payment on this loan (the "Term Loan") is subordinate to the payment of the 2008 Senior Bonds. The Term Loan comes due in 2011 at which time the Authority will be required to refinance or repay approximately $240 million of such loan. If it is unable to do so, this failure is an event of default in respect of the Term Loan, but no acceleration of the payment of the Term Loan may occur without the written consent of the holders of the Senior Indebtedness, including the 2008 Senior Bonds. It is also an event of default under the Trust Agreement, and the holders of Senior Indebtedness, including the 2008 Senior Bonds, have the right to declare the principal of such Indebtedness to be immediately due and payable should such failure occur.

2. *The Authority's ability to comply with environmental and public health standards and to maintain self-sufficiency in a highly regulated industry.* The environmental aspects of the Authority's operations are regulated primarily by (a) EPA, (b) DOH and (c) Puerto Rico Environmental Quality Board ("EQB") under federal and Commonwealth statutes and associated rules and regulations. There are no assurances that these agencies will not tighten their environmental standards, which could require additional, unexpected capital and/or operating expenditures. While the Authority would seek to increase its rates and charges to support such additional costs, there can be no assurance that such rate increases would be implemented successfully.

Additionally, the Authority is bound by the terms of comprehensive consent decrees and settlement agreements that collectively require the Authority to implement remedial plans to eliminate treatment plant bypasses and unpermitted discharges of untreated sewage and sanitary sewer system overflows and to improve the quality of potable water and the handling of sludge disposal by the Water System. See "Regulatory Compliance" under *Environmental Matters*. Such remedial plans must be implemented over a 15-year period beginning in mid-2006 with stipulated penalties (and possible criminal sanctions) if the Authority fails to meet applicable deadlines. The economic impact of these decrees and agreements on the Authority and the Systems will be significant. The Authority currently estimates that the total cost of compliance with the various decrees will be approximately $1.26 billion, and the total cost of compliance with the 2006 Drinking Water Settlement Agreement will be $832 million, over the next 15 years. The actual cost of compliance and the Authority's total capital expenditures may vary substantially depending on, among other things, (i) the availability of an adequate pool of qualified contractors to carry out needed projects, (ii) the inflationary environment with respect to the costs of labor and supplies needed to implement the compliance program, (iii) weather conditions that could adversely affect construction schedules and consumption patterns, (iv) population trends and political and economic developments in Puerto Rico that could adversely impact the collection of Revenues, (v) the willingness of the U.S. Justice Department, EPA, EQB and DOH to cooperate with respect to various issues that may arise as the Authority implements its remedial plan, (vi) the possibility of new environmental legislation or regulations affecting the Systems, (vii) unanticipated costs or potential modifications to projects resulting from requirements and limitations imposed by environmental laws and regulations and (viii) the inherent uncertainty involved in capital improvement projects of the magnitude undertaken by the Authority. There can be no assurance that the actual cost of compliance will not be significantly higher than the Authority's current estimate, nor can any assurances be given that the Authority will be able to comply fully with the terms of the various consent decrees and settlement agreements and avoid the imposition of additional monetary penalties.

Furthermore, the Authority's obligation to pay $9 million in monetary penalties to the United States government (in five equal annual installments) is secured by a statutory lien on the Authority's real property. The Authority has fully reserved this amount in its financial statements but has not set aside a cash reserve for this purpose. If the Authority does not make the required penalty payments, EPA has the right to foreclose on so much of the Authority's property as may be needed to satisfy this monetary obligation. During June 2007, the Authority made the first payment of $1.8 million. There can be no assurance that the Authority will make all of the required remaining penalty payments of $7.2 million related to this obligation or that EPA will not, in such situation, foreclose on the Authority's real property in order to satisfy that obligation. Any such actions may adversely affect the ability of the Authority to generate sufficient Net Revenues to pay debt service on the 2008 Senior Bonds.

In addition to the aforementioned possibility of additional environmental legislation or regulation, the Authority is also subject to any other legislation or regulatory action passed or promulgated from time to time with respect to its operations. Currently, for example, a bill is pending in the Legislature of Puerto Rico that would establish a review commission with the power to review and approve the rates and charges set by the Authority (among other public corporations). See *Rates, Billings and Collections*. Although the Constitution of Puerto Rico

provides protection against enactment of post-bond issuance legislation that would have the effect of substantially impairing the Authority's obligations under the Trust Agreement and the 2008 Senior Bonds, no assurance can be given that such proposed bill will not be enacted into law or that future legislative or regulatory actions will not occur, which actions may adversely affect the ability of the Authority to establish the rates and charges it believes are necessary to generate sufficient Net Revenues to pay debt service on the 2008 Senior Bonds.

3. *The Authority's ability to manage and improve operating practices.* If Current Expenses of the Authority should experience a significant increase without a corresponding increase in rates and charges, the Authority's debt service coverage could be negatively affected. These expenses will be significantly influenced by the performance of management and by external circumstances, such as the existence of litigation, changes in regulatory policy or legislation, changes in uncontrollable costs such as electricity, chemicals or insurance, or the necessity to carry out unexpected repairs or replacements, any of which could have a material adverse financial effect on the Authority. The Authority's current management has been in place since early 2004. As such, management's track record in running the Authority is limited, although it has undertaken certain operational initiatives, including better management of operating expenses in the areas of payroll and electricity costs, as well as revenue enhancing measures related to controlling leaks and unaccounted-for water, as set forth in Sections 2 and 4 of the Consulting Engineer's Report in *Appendix II*, that in the opinion of the Consulting Engineer should result in improving the performance of the Authority's Systems and its fiscal condition. There can be no assurances given, however, that the Authority's estimate of Current Expenses will not be substantially exceeded.

4. *The Authority's ability to manage substantial construction efforts related to its CIP.* The Authority's CIP for the five fiscal years ending June 30, 2012, including the items required by the various consent decrees and settlement agreements, is estimated to total approximately $1.98 billion. Additional capital expenditures will be required beyond this five-year period in order to comply with regulatory requirements, agreements and decrees as described herein and in the Consulting Engineer's Report. The CIP is significantly larger than the Authority's historical experience. The estimated cost of the CIP, however, may vary depending on the effect of increasing costs of labor, energy and raw materials. In order to comply with the various consent decrees and to implement the Authority's ongoing CIP, the Authority may need to issue additional Senior Indebtedness beyond the amounts currently projected to be issued. The burden of such additional debt and other obligations may require increases in the rates currently being charged to Authority customers. See *Rates, Billings and Collections*. No assurances can be given that rate increases will be implemented on a timely basis to support any such additional obligations.

5. *The Authority's ability to withstand weather or other uncontrollable events.* Puerto Rico is an island located in an area subject to tropical storms and hurricanes. If a major storm were to strike Puerto Rico, the Systems and customers' homes may experience substantial damage and a resulting interruption in service. Such events may materially adversely affect the Authority's ability to provide service and collect Revenues. Repair and maintenance of the Systems are also subject to availability of key raw materials and on the continued operations of other ports, including ports in the Gulf Coast of the United States. Storms and hurricanes in the Gulf have affected the price and availability of materials such as chemicals and oil increasing the Authority's costs of operations in the past. In addition, although rare, the island is not immune from droughts that have caused the Authority to consider rationing and other measures to conserve its water sources.

The Authority has taken steps to mitigate the impact of tropical storms, including implementation of a hurricane preparedness plan and securing insurance coverage where available and contracts with suppliers of chemicals providing for emergency inventories of key raw materials, and to mitigate the effect of such drought conditions, including the construction of the NCS (as defined in "The Water System" under *The Water and Wastewater Systems*).

If all, substantially all or any portion of the Systems are damaged or destroyed by any casualty or condemned by a governmental authority, there is no assurance that casualty insurance proceeds or pollution liability insurance proceeds (if available) will be sufficient to repair or replace such property. Even if applicable insurance coverages are adequate, there is no assurance that such damage or destruction would not have a material adverse effect on the ability of the Authority to provide water and wastewater service to its customers or on the Revenues of the Authority.

6. *Labor and Management Factors.* Currently, the Authority's relations with its chief labor unions are considered satisfactory. The Authority has, however, experienced prior episodes of labor unrest that included work stoppages (the most recent occurred for 84 days during late 2004) and occasional incidents of sabotage to its facilities. The ability of the Authority and its labor unions to continue the current spirit of cooperation and consultation will facilitate the Authority's meeting its financial and operating objectives and projections. Should these relations deteriorate, however, and work stoppages recur, it is possible that this may have an adverse effect on the ability of the Authority to provide water and wastewater services to its customers or on the Revenues of the Authority. In addition, current management of the Authority has been in place for four years, and the Authority's senior officers are under contracts through the middle of 2010. There can be no assurance given as to how long senior management personnel will remain in their current positions nor whether the current policies and programs being implemented by this management team in response to various regulatory and other imperatives will continue should management positions change. Any such changes may have an adverse effect on the ability of the Authority to provide water and wastewater services to its customers or on the Revenues of the Authority.

The holders of the Bonds will have no mortgage or other lien on the physical assets of the Authority and will have no rights to direct management changes, continuity or decisions except in the case of bringing suit to compel compliance with the Rate Covenant as described under "Rate Covenant" in *Security for the Bonds*.

7. *General Risk Factors.*

This Official Statement contains certain assumptions and forecasts, which are subject to change. Actual results are likely to differ, perhaps materially, from those projected. Accordingly, the projections contained in this Official Statement are not necessarily indicative of future performance, and the Authority assumes no responsibility for the failure to meet such projections. If actual results are less favorable than the results projected or the assumptions used in preparing such projections prove to be incorrect, the ability to make timely payments of debt service on the 2008 Senior Bonds from Net Revenues may be materially adversely affected. See "Forward-Looking Statements" under *Introductory Statement* in this Official Statement.

In the event of a default by the Authority, the ability of the Trustee to raise sufficient funds to pay the principal of and interest on the 2008 Senior Bonds will depend upon the exercise of various remedies specified by the Trust Agreement. Under existing law, those remedies are often subject to discretion and delay and may not be readily available or may be limited. Equity principles may also delay or otherwise adversely affect the enforcement of Bondholders' rights.

There can be no assurance that there will be a secondary market for the 2008 Senior Bonds, which market is dependent upon prevailing market conditions, the financial condition or market position of firms who may make a secondary market and the financial condition and results of operations of the Authority.

PLAN OF FINANCING

General

The Authority has developed a comprehensive plan to finance the CIP through the issuance of Indebtedness (chiefly Senior Bonds), federal, Commonwealth and other grants and contributions and internally generated funds. The 2008 Senior Bonds are being issued, in part, to finance a portion of the CIP. See "Sources of Funds" under *Capital Improvement Program*.

Application of Proceeds of 2008 Senior Bonds

The proceeds of the 2008 Senior Bonds will be used as follows:

Deposit in Construction Fund (including $40,337,412.12 for capitalized interest)*	$ 128,584,667.20
Payment of bond anticipation notes issued by Authority as interim financing for capital improvements†	989,068,102.49
Payment to swap counterparties for termination of forward starting interest rate exchange agreements	75,274,680.00
Deposit in Senior Debt Service Reserve Account	90,607,755.00
Underwriting discount, bond insurance premium and estimated legal, printing and financing expenses	37,882,189.26
Total	$1,321,417,393.95

In addition to the Guaranteed Bonds, the Authority currently has notes outstanding held by Puerto Rico Public Finance Corporation ("PFC") securing $360,610,000 of outstanding PFC bonds (collectively, the "PFC Bonds"). The Guaranteed Bonds are considered Commonwealth Guaranteed Indebtedness under the Trust Agreement, and the PFC Bonds are considered Commonwealth Supported Obligations under the Trust Agreement. Until 2006, the Commonwealth had made virtually all of the debt service payments on the Guaranteed Bonds. Until 2006, the PFC Bonds, which are contractually payable from the Authority's payments on the aforementioned notes derived "solely" from Commonwealth appropriations, were also made from General Fund appropriations received by the Authority from the Commonwealth. In 2006, in order to help alleviate its budget constraints, the Commonwealth requested that the Authority, as part of its actions to restore its operations to financial self-sufficiency, recommence, in respect of the Guaranteed Bonds and begin, in respect of the PFC Bonds, to make debt service payments on said obligations, and the Authority agreed. The projections included in this Official Statement of the Authority's revenues and expenses include line items (subordinate to the payment of the Senior, Senior Subordinate and Subordinate Indebtedness of the Authority) for this debt service. The payment of this debt service is included in the calculations the Authority must undertake to show compliance with its Rate Covenant under the Trust Agreement.

With respect to the Guaranteed Bonds, the Authority will refinance its 1995 Commonwealth Guaranteed Bonds by issuing its 2008 Commonwealth Guaranteed Bonds, in order to reduce, to the extent practicable, the annual debt service on these obligations and improve the Authority's cash flow. The projections of Authority revenues, expenses and debt service contained in the Consulting Engineer's Report take such expected refinancing into account by making certain assumptions of the savings produced thereby in debt service (albeit debt service that is payable by the Authority after its payment of debt service on the 2008 Senior Bonds).

In lieu of a deposit of 2008 Senior Bond proceeds or other funds into the Operating Reserve Fund under the Trust Agreement, the Authority will procure, concurrently with the issuance of the 2008 Senior Bonds, a $150 million line of credit from Development Bank. Under this line, the Authority will be authorized to draw funds in situations described in the Trust Agreement. See *Debt* and *Summary of the Trust Agreement* in *Appendix III*.

In June 2007, the Authority entered into two forward starting, interest rate exchange agreements with affiliates of Morgan Stanley & Co. Inc. and Bear, Stearns & Co. Inc., each an underwriter of the Series A Bonds. The agreements covered a notional amount of $930 million, and their purpose was to allow the Authority to hedge part of its exposure to the adverse effects that rising interest rates would have on the Authority's ability to finance its

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* As permitted under the Trust Agreement, the Authority expects to invest all or a portion of the moneys on deposit to the credit of the Construction Fund in one or more investment agreements to be entered into with highly rated financial institutions.

† A portion of this amount will be deposited into an escrow account, invested in certain eligible securities and applied on April 3, 2008 to the retirement of certain bond anticipation notes held by Citigroup Global Markets Inc., the senior managing underwriter for the Series A Bonds. In the opinion of Bond Counsel, upon such deposit, said notes will no longer be deemed outstanding Indebtedness for purposes of the Trust Agreement and, as a consequence, said notes are not included in the "As Adjusted" column in the table under *Debt* below.

CIP. The agreements were terminated by the parties on February 14, 2008, and the Authority is obligated to make a payment to the counterparties on the date of delivery of the 2008 Senior Bonds in an amount equal to approximately the amount shown in the above table. The Authority intends to make such termination payment from the proceeds of the 2008 Senior Bonds. The Authority will record the termination amount as a non-operating expense in the fiscal year 2008 Statement of Revenues, Expenses, and Changes in Net Assets. See also notes 20(e) and 21(b) in the Audited Financial Statements of the Authority for the fiscal years ended June 30, 2006 and 2007 in *Appendix I*.

SECURITY FOR THE BONDS

Source of Payment

The principal of and premium, if any, and interest on the Bonds (including the 2008 Senior Bonds) are payable solely from the Revenues of the Systems after payment of their Current Expenses (such remaining amount defined as "Net Revenues"). The Trust Agreement provides that the Authority may incur debt to finance its capital expenditures, which debt may be secured with different liens on the Authority's Net Revenues. The 2008 Senior Bonds will be issued as Senior Indebtedness under the Trust Agreement, which Indebtedness includes Senior Bonds and other Indebtedness incurred on a parity with Senior Bonds. Senior Indebtedness has a first claim on Net Revenues. The Authority contemplates that most of its Indebtedness to finance the CIP will be incurred as Senior Indebtedness.

In addition, the Authority is able to incur "Senior Subordinate Indebtedness", which has a claim on Net Revenues subordinate to the claim of Senior Indebtedness and "Subordinate Indebtedness", which has a claim on Net Revenues subordinate to the claim of Senior Subordinate Indebtedness. The Authority's outstanding Term Loan is payable on a parity with other Senior Subordinate Indebtedness of the Authority. Other than as disclosed in the previous sentence, there is no other Senior Subordinate Indebtedness or Subordinate Indebtedness currently Outstanding under the Trust Agreement.

Additionally, the Authority is able to incur Commonwealth Guaranteed Indebtedness and Commonwealth Supported Indebtedness, which in each case has a lien on Net Revenues subordinate to the claim of Subordinate Indebtedness. Failure to pay principal of or interest on such Commonwealth Guaranteed Indebtedness or Commonwealth Supported Indebtedness is not an Event of Default under the Trust Agreement. The Authority also will sign an agreement with Development Bank under which Development Bank will provide a revolving line of credit to the Authority in the amount of $150 million that will initially satisfy the balance that the Authority is required to maintain in the Operating Reserve Fund under the Trust Agreement. See *Debt.*

Flow of Funds

Under the Trust Agreement, all Revenues are deposited into the Revenue Fund upon receipt. Moneys in the Revenue Fund are held by the Authority and not by the Trustee. Moneys in the Revenue Fund are applied to pay the Authority's Current Expenses. On the last business day of each month, the Authority is required to withdraw all moneys in the Revenue Fund after such payment and transfer the amount so withdrawn to the Trustee for application in the following order of priority:

First, to the credit of the various accounts in the Senior Bond Fund, an amount equal to one-sixth of the interest due on all Outstanding Senior Indebtedness on the next interest payment date and one-twelfth of the principal (or sinking fund) installments due on all Outstanding Senior Indebtedness on the next principal payment (or mandatory sinking fund redemption) date (with appropriate adjustment to the amount so deposited if the period between interest payment dates is less than six months and the period between principal payment (or mandatory sinking fund redemption) dates is less than 12 months);

Second, to the credit of the various accounts in the Senior Debt Service Reserve Fund, the respective amounts necessary in order to cause the amounts then on deposit in said accounts to equal the corresponding Senior Reserve Requirements (if a deposit is made to one of said accounts because the required balance therein has increased on account of the issuance of additional Senior Bonds, the required monthly deposit amount will equal one-sixtieth of the increase in the applicable Senior Reserve Requirement on account of said issuance);

Third, to the credit of the various accounts in the Senior Subordinate Bond Fund, an amount equal to one-sixth of the interest due on all Outstanding Senior Subordinate Indebtedness on the next interest payment date and one-twelfth of the principal (or sinking fund) installments due on all Outstanding Senior Subordinate Indebtedness on the next principal payment (or mandatory sinking fund redemption) date (with appropriate adjustment to the amount so deposited if the period between interest payment dates is less than six months and the period between principal payment (or mandatory sinking fund redemption) dates is less than 12 months);

Fourth, to the credit of the various accounts in the Senior Subordinate Debt Service Reserve Fund, the respective amounts necessary in order to cause the amounts then on deposit in said accounts to equal the corresponding Senior Subordinate Reserve Requirements (if a deposit is made to one of said accounts because the required balance therein has increased on account of the issuance of additional Senior Subordinate Bonds, the required monthly deposit amount will equal one-sixtieth of the increase in the applicable Senior Subordinate Reserve Requirement on account of said issuance);

Fifth, to the credit of the various accounts in the Subordinate Bond Fund, an amount equal to one-sixth of the interest due on all Outstanding Subordinate Indebtedness on the next interest payment date and one-twelfth of the principal (or sinking fund) installments due on all Outstanding Subordinate Indebtedness on the next principal payment (or mandatory sinking fund redemption) date (with appropriate adjustment to the amount so deposited if the period between interest payment dates is less than six months and the period between principal payment (or mandatory sinking fund redemption) dates is less than 12 months);

Sixth, to the credit of the various accounts in the Subordinate Debt Service Reserve Fund, the respective amounts necessary in order to cause the amounts then on deposit in said accounts to equal the corresponding Subordinate Reserve Requirements (if a deposit is made to one of said accounts because the required balance therein has increased on account of the issuance of additional Subordinate Bonds, the required monthly deposit amount will equal one-sixtieth of the increase in the applicable Subordinate Reserve Requirement on account of said issuance);

Seventh, to the credit of the Operating Reserve Fund, an amount necessary in order to cause the amount on deposit in said Fund to equal the Operating Reserve Fund Requirement (including any amounts owing by the Authority under the $150 million Development Bank line of credit referred to under *Plan of Financing* or under any other Operating Reserve Facility held for the benefit of the Operating Reserve Fund);

Eighth, to the credit of the Capital Improvement Fund, an amount necessary in order to cause the amount then on deposit in said Fund to equal within the next twelve months (in equal monthly installments) the Capital Improvement Fund Requirement;

Ninth, to the credit of the Commonwealth Payments Fund, first, an amount equal to one-sixth of the interest due on all Outstanding Commonwealth Guaranteed Indebtedness on the next interest payment date and one-twelfth of the principal (or sinking fund) installment due on all Outstanding Commonwealth Guaranteed Indebtedness on the next principal payment (or mandatory sinking fund redemption) date and second, an amount equal to one-sixth of the interest due on all Outstanding Commonwealth Supported Obligations on the next interest payment date and one-twelfth of the principal (or sinking fund) installment due on all Outstanding Commonwealth Supported Obligations on the next principal payment (or mandatory sinking fund redemption) date (with, in each case, appropriate adjustment to the amount so deposited if the period between interest payment dates is less than six months and the period between principal payment (or mandatory sinking fund redemption) dates is less than 12 months); and

Tenth, all remaining Revenues, to the credit of the Rate Stabilization Account of the Surplus Fund in equal monthly deposits until the balance therein equals the balance set forth in the then current Annual Budget and thereafter, any such remaining amount will be deposited in the Surplus Fund.

Reserve Funds

Under the Trust Agreement, separate debt service reserve funds are established for each lien created thereunder (and within such funds separate debt service reserve accounts are allowed to be set up for individual

Series of Bonds). The Authority is not obligated, however, to establish a debt service reserve account for a Series of Bonds and may elect that multiple Series of Bonds have the benefit of the same debt service reserve account. If not otherwise specified in a Supplemental Agreement authorizing the issuance of a particular Series of Bonds, the Debt Service Reserve Requirement applicable to its corresponding Debt Service Reserve Account shall be the lesser of (x) maximum Annual Debt Service on the Outstanding Bonds secured by such Account, (y) 10% of the proceeds, calculated in accordance with the Code, of the Outstanding Bonds secured by such Account and (z) 125% of average Annual Debt Service for the payment of the principal of and interest on the Outstanding Bonds secured by such Account.

Senior Debt Service Reserve Accounts. The Authority will deposit $90,607,755 to the credit of the Senior Debt Service Reserve Account from the proceeds of the 2008 Senior Bonds. The Senior Debt Service Reserve Account has been established under the Trust Agreement as security for the Senior Bonds, including the 2008 Senior Bonds. Upon the occurrence of any deficiency in any Senior Debt Service Reserve Account, the Authority must cure the deficiency within 12 months. In addition, from the date of issuance of Additional Senior Bonds, the Authority has 60 months to fund any increase in the Senior Reserve Requirement as provided in "Flow of Funds" above. Subject to certain conditions in the Trust Agreement, in lieu of the required deposits, the Authority may cause a Debt Service Reserve Facility to be deposited into any Senior Debt Service Reserve Account. Moneys in the Senior Debt Service Reserve Account, including moneys drawn under any such Debt Service Reserve Facility, are available to pay principal of and interest on the Series of Senior Bonds to which it relates on any interest payment date whenever moneys in the Senior Sinking Fund, the Surplus Fund, the Commonwealth Payments Fund, the Capital Improvement Fund and the Operating Reserve Fund are insufficient for such purpose.

Senior Subordinate Debt Service Reserve Accounts. Upon the issuance of Senior Subordinate Bonds, the Authority may establish one or more Senior Subordinate Debt Service Reserve Accounts related thereto. Each Senior Subordinate Debt Service Reserve Account will be established under the Trust Agreement as security for the Outstanding Senior Subordinate Bonds to which such Account relates. Upon the occurrence of any deficiency in any Senior Subordinate Debt Service Reserve Account, the Authority must cure the deficiency within 12 months. In addition, from the date of issuance of Additional Senior Subordinate Bonds, the Authority has 60 months to fund any increase in the Senior Subordinate Reserve Requirement as provided in "Flow of Funds" above. Subject to certain conditions in the Trust Agreement, in lieu of the required deposits, the Authority may cause a Debt Service Reserve Facility to be deposited into any Senior Subordinate Debt Service Reserve Account. Moneys in the Senior Subordinate Debt Service Reserve Account, including moneys drawn under any such Debt Service Reserve Facility, are available to pay principal of and interest on the Series of Senior Subordinate Bonds to which it relates on any interest payment date whenever moneys in the Senior Subordinate Sinking Fund, the Surplus Fund, the Commonwealth Payments Fund, the Capital Improvement Fund and the Operating Reserve Fund are insufficient for such purpose.

Subordinate Debt Service Reserve Accounts. Upon the issuance of Subordinate Bonds, the Authority may establish one or more Subordinate Debt Service Reserve Accounts related thereto. Each Subordinate Debt Service Reserve Account will be established under the Trust Agreement as security for the Outstanding Subordinate Bonds to which such Account relates. Upon the occurrence of any deficiency in any Subordinate Debt Service Reserve Account, the Authority must cure the deficiency within 12 months. In addition, from the date of issuance of Additional Subordinate Bonds, the Authority has 60 months to fund any increase in the Subordinate Reserve Requirement as provided in "Flow of Funds" above. Subject to certain conditions in the Trust Agreement, in lieu of the required deposits, the Authority may cause a Debt Service Reserve Facility to be deposited into any Subordinate Debt Service Reserve Account. Moneys in the Subordinate Debt Service Reserve Account, including moneys drawn under any such Debt Service Reserve Facility, are available to pay principal of and interest on the Series of Subordinate Bonds to which it relates on any interest payment date whenever moneys in the Subordinate Sinking Fund, the Surplus Fund, the Commonwealth Payments Fund, the Capital Improvement Fund and the Operating Reserve Fund are insufficient for such purpose.

Other Reserves. As the above discussion of the flow of funds shows, immediately after monthly deposits are made for debt service and associated reserves on the Authority's Indebtedness (other than Commonwealth Guaranteed Indebtedness and Commonwealth Supported Obligations), the Authority makes deposits into an Operating Reserve Fund and a Capital Improvement Fund. The moneys in these funds will be used by the Authority to provide reserves for covering normal operating expenses of the Systems as well as for providing "internally

generated funds" for a portion of its ongoing CIP. Moneys in these two funds are also available, prior to the use of any moneys in the various debt service reserve funds (see "Reserve Funds" above), to cover debt service shortfalls relating to the Senior, Senior Subordinate and Subordinate Indebtedness, and serve as additional reserves for those purposes.

Rate Covenant

The Authority covenants that it will fix, charge and collect rates, fees and other charges for the use of and the services furnished by the Systems and shall, from time to time and as often as necessary, revise such rates, fees and other charges so as to meet the following three independent requirements (which will be calculated annually no later than six months after the end of the each Fiscal Year based upon the Authority's most recent audited financial statements);

(1) Net Revenues for each Fiscal Year shall be sufficient to pay (A) Annual Debt Service on Indebtedness, (B) the amounts, if any, necessary to be deposited in any Debt Service Reserve Account to restore the amount on deposit therein to the amount of the applicable Debt Service Reserve Requirement (provided that each such Account will be deemed to be funded at its applicable Debt Service Reserve Requirement for so long as the deposits required by the Trust Agreement are being made), (C) the amount, if any, necessary to be deposited in the Operating Reserve Fund to maintain the balance therein at the Operating Reserve Requirement and (D) the amount, if any, necessary to be deposited in the Capital Improvement Fund and the Rate Stabilization Account of the Surplus Fund in accordance with the Annual Budget for such Fiscal Year; and

(2) Net Revenues shall be in each Fiscal Year at least equal to 120% of the Annual Debt Service with respect to Senior Indebtedness for such Fiscal Year, and

(3) Net Revenues shall be in each Fiscal Year at least equal to 110% of the Annual Debt Service with respect to Senior Indebtedness and Senior Subordinate Indebtedness for such Fiscal Year.

The Authority shall immediately retain a Consultant to submit a written report and recommendations with respect to increases in the Authority's rates, fees and other charges and improvements in the operations of and the services rendered by the Systems and the Authority's accounting and billing procedures necessary to bring the Authority into compliance with the Rate Covenant if (i) at the end of any Fiscal Year the Authority is not in compliance with the Rate Covenant, (ii) the Authority fails for three consecutive months to make the required deposits to any Bond Fund, (iii) there is a deficiency in any Debt Service Reserve Account for longer than three consecutive months (provided no such deficiency shall be deemed to exist so long as the deposits required by the Trust Agreement are being made), or (iv) there is a deficiency in the Operating Reserve Fund for longer than six consecutive months. The report and recommendations shall be filed with the Trustee and the Authority within 120 days from the date the Consultant is retained, and the Authority shall promptly revise its rates, fees and charges, and alter its operations and services to conform with the report and recommendations of the Consultant to the extent permitted by law.

If the Authority promptly revises its rates, fees, charges, operations, services and procedures in conformity with the report and recommendations of the Consultant and otherwise follows such recommendations to the extent permitted by law so that the Authority is expected to be, when its actions become fully effective, in compliance with the Rate Covenant, then any failure to meet the Rate Covenant will not constitute an Event of Default under the Trust Agreement.

In the event that the Authority shall fail to pursue diligently an adjustment of the schedule of rates, fees and charges in accordance with the provisions of the preceding paragraph, the Trustee shall, upon the request of the Holders of not less than 10% in principal amount of all Senior Bonds then Outstanding and upon being indemnified to its satisfaction, institute and prosecute an appropriate suit, action or proceeding to compel the Authority to adjust such schedule in accordance with the requirements of the Trust Agreement, and the Authority has covenanted in the Trust Agreement that it will adopt and charge rates and charges in compliance with any judgment, order or decree entered in any such suit, action or proceeding.

Additional Bonds

General. The Authority may issue Bonds in addition to the 2008 Senior Bonds under the Trust Agreement for any lawful purpose, such as to finance Improvements to the Systems or to refinance other Authority Indebtedness and for making deposits to the corresponding Debt Service Reserve Fund, and paying any costs of issuance so long as the Authority satisfies the following tests:

Senior Bonds. Additional Senior Bonds may be issued under the Trust Agreement, provided that, among other conditions, the amount of the Net Revenues for any twelve consecutive calendar months out of the eighteen calendar months immediately preceding the date of issuance of such Senior Bonds, adjusted to give effect to any increase or decrease in rates, fees, rentals or other charges for which all legal conditions to effectiveness have been met as of the date of issuance of such additional Senior Bonds, shall be not less than (A) 120% of the maximum aggregate Annual Debt Service for any Fiscal Year thereafter on the Outstanding Senior Indebtedness and the Senior Bonds then to be issued (and other Senior Indebtedness incurred together with said Senior Bonds), and (B) 100% of the maximum aggregate Annual Debt Service for any Fiscal Year thereafter on all Bonds and Other System Indebtedness then Outstanding, the Additional Senior Bonds to be issued and any other Bonds and Other System Indebtedness to be issued or incurred simultaneously therewith, plus the amounts required to be deposited in the Senior Debt Service Reserve Fund, the Senior Subordinate Debt Service Reserve Fund and the Subordinate Debt Service Reserve Fund pursuant to the Trust Agreement.

Senior Subordinate Bonds. Senior Subordinate Bonds may also be issued under the Trust Agreement, provided that, among other conditions, the amount of the Net Revenues for any twelve consecutive calendar months out of the eighteen calendar months immediately preceding the date of issuance of such Senior Subordinate Bonds, adjusted to give effect to any increase or decrease in rates, fees, rentals or other charges for which all legal conditions to effectiveness have been met as of the date of issuance of such additional Senior Subordinate Bonds, shall be not less than (A) 110% of the maximum aggregate Annual Debt Service for any Fiscal Year thereafter on the Outstanding Senior and Senior Subordinate Indebtedness and the Senior Subordinate Bonds then to be issued (and other Senior or Senior Subordinate Indebtedness incurred together with said Senior Subordinate Bonds), and (B) 100% of the maximum aggregate Annual Debt Service for any Fiscal Year thereafter on the Bonds and Other System Indebtedness then Outstanding, the Additional Senior Subordinate Bonds to be issued and any other Bonds and Other System Indebtedness to be issued or incurred simultaneously therewith, plus amounts required to be deposited in the Senior Debt Service Reserve Fund, the Senior Subordinate Debt Service Reserve Fund and the Subordinate Debt Service Reserve Fund pursuant to the Trust Agreement.

Subordinate Bonds. Subordinate Bonds may be issued under and secured by the Trust Agreement provided that, among other conditions (i) the amount of the Net Revenues for any twelve consecutive calendar months out of the eighteen calendar months immediately preceding the date of issuance of such Subordinate Bonds, adjusted to give effect to any increase or decrease in rates, fees, rentals or other charges for which all legal conditions to effectiveness have been met as of the date of issuance of such additional Subordinate Bonds, shall be not less than 100% of the maximum aggregate Annual Debt Service for any Fiscal Year thereafter on the Senior Indebtedness, Senior Subordinate Indebtedness and Subordinate Indebtedness then Outstanding, the additional Subordinate Bonds to be issued and any other Bonds and Other System Indebtedness to be issued or incurred simultaneously therewith plus amounts required to be deposited in the Senior Debt Service Reserve Fund, the Senior Subordinate Debt Service Reserve Fund, and the Subordinate Debt Service Reserve Fund pursuant to the Trust Agreement or (ii) the projected Net Revenues for each of the three Fiscal Years after the issuance of such Subordinate Bonds shall be not less than 100% of the maximum aggregate Annual Debt Service for any Fiscal Year thereafter on the Bonds and Other System Indebtedness then Outstanding, the Additional Subordinate Bonds to be issued and Other System Indebtedness to be issued or incurred simultaneously therewith, plus amounts required to be deposited in the Senior Debt Service Reserve Fund, the Senior Subordinate Debt Service Reserve Fund, and the Subordinate Debt Service Reserve Fund pursuant to the Trust Agreement

Refunding Bonds. In addition to issuing Bonds, as aforesaid, for financing Improvements to the Systems and related purposes, the Authority is also permitted under the Trust Agreement to issue Bonds to refinance all or any part of its then outstanding obligations. If, after the issuance of such Refunding Bonds and the provision for the refunding of the obligations in question, (A) Annual Debt Service on such Refunding Bonds for each applicable Fiscal Year following the issuance thereof is not greater than the Annual Debt Service for such Fiscal Year on the

obligations to be refunded or (B) maximum aggregate Annual Debt Service for any Fiscal Year thereafter on Indebtedness Outstanding after the issuance of such Refunding Bonds is not greater than the maximum aggregate Annual Debt Service for any Fiscal Year thereafter on the Indebtedness Outstanding prior to the issuance of such Refunding Bonds, then the Authority need not establish compliance with the financial tests that it must meet in order otherwise to issue a particular class of Bonds under the Trust Agreement as described under "Additional Bonds" above. If, however, such is not the case, then the Authority – prior to issuing any such refunding Bonds – must demonstrate to the Trustee written compliance with the applicable financial tests outlined above under "Additional Bonds" (treating, for purposes of demonstrating such compliance, the obligations being refunded as not Outstanding under the Trust Agreement). For purposes of this paragraph, applicable Fiscal Year means any Fiscal Year in which such Refunding Bonds are outstanding.

Other. The Authority may enter into agreements with issuers of any credit facility or liquidity facility securing any Series of Bonds which involve parity liens on Net Revenues to the extent that the Series of Bonds or portion thereof which is supported by such credit facility or liquidity facility is issued under the conditions described above. The Authority may also incur Other System Indebtedness secured on a parity with the claim of Bonds (Senior, Senior Subordinate or Subordinate, as the case may be) on Net Revenues, provided the applicable conditions above for the issuance of Additional Bonds are met, including obligations to counterparties under interest rate exchange agreements and similar derivative instruments.

Term Loan Tests. For so long as the Term Loan is outstanding, in addition to the Authority's compliance with the above additional bonds' tests, it is also required, prior to issuing or incurring any Indebtedness under or secured by the Trust Agreement, to satisfy the following test. The Authority must certify that the ratio (computed using the definitions in the Term Loan documents) of Net Revenues to debt service on all of its Senior and Senior Subordinate Indebtedness is at least 1.20 and that the ratio of Net Revenues to debt service on all of its Indebtedness (excluding the Commonwealth Guaranteed Indebtedness) is at least one times for, in each case, the twelve-month period leading up to the date of issuance/incurrence of said Indebtedness. The issuance of the 2008 Senior Bonds will satisfy the above tests.

Events of Default

Under the Trust Agreement, certain actions or inactions of the Authority, such as not paying its Indebtedness when due (including Indebtedness incurred under contracts other than the Trust Agreement, such as the Term Loan), not meeting covenants and instituting bankruptcy or insolvency proceedings, are Events of Default that will subject the Authority to breach of contract and similar lawsuits and, in certain cases (involving non-payment of debt or its initiation of insolvency proceedings) to having the principal of its Bonds being declared due and payable immediately upon the happening of such default. The failure, however, by the Authority to make payments in respect of any Commonwealth Guaranteed Indebtedness or Commonwealth Supported Obligations will not be considered Events of Default under the Trust Agreement, and the above remedies, absent such failure also being such an event of default (as would be the case if such failure also caused a violation of a Trust Agreement covenant), would not be available to the Trustee or Bondholders upon any such nonpayment. See *Summary of the Trust Agreement* in *Appendix III*.

THE SERIES A BONDS

General

The Series A Bonds maturing July 1, 2024 will be issued as deferred income bonds (the "Convertible Capital Appreciation Bonds") with principal and interest accruing to, but not including, July 1, 2011 (the "Current Interest Commencement Date"). The remainder of the Series A Bonds will pay interest currently until their payment in full (the "Current Interest Bonds"). The Series A Bonds are subject to redemption at the times and in the manner set forth below under "Redemption".

Convertible Capital Appreciation Bonds. Those Series A Bonds which are Convertible Capital Appreciation Bonds will be issued in denominations of $5,000 aggregate principal and interest accruing to the Current Interest Commencement Date and any multiple thereof. Interest on the Convertible Capital Appreciation Bonds will be compounded from their date of delivery to but not including the Current Interest Commencement

Date, and such compounded interest will be payable only at maturity in the manner set forth herein. No payments are due to the beneficial owners of the Convertible Capital Appreciation Bonds during the period from their date of delivery to the first interest payment date after the Current Interest Commencement Date. After the Current Interest Commencement Date, interest on the Convertible Capital Appreciation Bonds on a current basis will be payable on each January 1 and July 1, commencing January 1, 2012 (each, a "CAB Interest Payment Date"), as shown on the inside cover of this Official Statement.

The Convertible Capital Appreciation Bonds shall appreciate in value from their date of delivery to the Current Interest Commencement Date. The inside cover of this Official Statement contains the Table of Appreciated Values for the Convertible Capital Appreciation Bonds. After the Current Interest Commencement Date, the Convertible Capital Appreciation Bonds shall bear interest, payable on a current basis, based on a 360-day year of twelve 30-day months, to maturity, on each CAB Interest Payment Date, at the respective interest rates per annum set forth on the inside cover of this Official Statement.

The Convertible Capital Appreciation Bonds shall bear interest from the most recent Interest Payment Date for which the interest has been paid or duly provided for, or if no interest has been paid, from the Current Interest Commencement Date. Any Convertible Capital Appreciation Bond issued upon registration of transfer or exchange for another Convertible Capital Appreciation Bond shall retain the same Appreciated Value of the Convertible Capital Appreciation Bond that was registered as transferred or exchanged. "Appreciated Value" means: (a) as of any Valuation Date (hereinafter defined), the amount per $5,000 aggregate principal and interest accruing to the Current Interest Commencement date set forth as the Appreciated Value for such date in the Table of Appreciated Values on the inside cover of this Official Statement and (b) as of any date other than a Valuation Date, the sum of (i) the Appreciated Value on the preceding Valuation Date and (ii) the product of (1) a fraction, the numerator of which is the number of days having elapsed from the preceding Valuation Date and the denominator of which is the number of days from such preceding Valuation Date to the next succeeding Valuation Date, calculated based on the assumption that Appreciated Value accrues during any semi-annual period in equal daily amounts on the basis of a year of twelve 30-day months, and (2) the difference between the Appreciated Values for such Valuation Dates; and (c) from the Current Interest Commencement Date, the Appreciated Value on the Current Interest Commencement Date. "Valuation Date" means the date or dates prior to and including the Current Interest Commencement Date on which specific Appreciated Values are assigned as reflected in the Table of Appreciated Values on the inside cover of this Official Statement.

Current Interest Bonds. The Series A Bonds other than the Convertible Capital Appreciation Bonds will be dated and bear interest at the rates, payable on January 1 and July 1 in each year, beginning July 1, 2008, and will mature on the dates and in the principal amounts set forth on the inside cover of this Official Statement.

Book-Entry Only System

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

DTC, the world's largest depository, is a limited-purpose trust company organized under the New York Banking Law, a "banking organization" within the meaning of the New York Banking Law, a member of the Federal Reserve System, a "clearing corporation" within the meaning of the New York Uniform Commercial Code, and a "clearing agency" registered pursuant to the provisions of Section 17A of the Securities Exchange Act of 1934. DTC holds and provides asset servicing for over 2.2 million issues of U.S. and non-U.S. equity, corporate and municipal debt issues, and money market instruments from over 85 countries that DTC's participants ("Direct Participants") deposit with DTC. DTC also facilitates the post-trade settlement among Direct Participants of sales and other 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. Direct Participants include both U.S. and non-U.S. securities brokers and dealers, banks, trust companies, clearing corporations, and certain other organizations. DTC is a wholly-owned subsidiary of The Depository Trust & Clearing Corporation ("DTCC"). DTCC, in turn, is owned by a number of Direct Participants of DTC and Members

of the National Securities Clearing Corporation, Fixed Income Clearing Corporation, and Emerging Markets Clearing Corporation (NSCC, FICC and EMCC are also subsidiaries of DTCC), as well as by the New York Stock Exchange, Inc., the American Stock Exchange LLC, and the National Association of Securities Dealers, Inc. Access to the DTC system is also available to others such as both U.S. and non-U.S. securities brokers and dealers, banks, trust companies, and clearing corporations that clear through or maintain a custodial relationship with a Direct Participant, either directly or indirectly ("Indirect Participants"). DTC has Standard & Poor's Rating Services, a division of The McGraw-Hill Companies, Inc. ("S&P"), highest rating: AAA. The DTC Rules applicable to its Participants are on file with the Securities and Exchange Commission (the "SEC"). More information about DTC can be found at www.dtcc.com and www.dtc.org.

Purchases of the Series A Bonds under the DTC system must be made by or through Direct Participants, which will receive a credit for their Series A Bonds on DTC's records. The ownership interest of each actual purchaser of each Series A Bond ("Beneficial Owner") is in turn to be recorded on the Direct and Indirect Participants' records. Beneficial Owners will not receive written confirmation from DTC of their purchase. Beneficial Owners are, however, expected to receive written confirmations providing details of their purchase, 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 Series A Bonds are to be accomplished by entries made on the books of Direct and Indirect Participants acting on behalf of Beneficial Owners. Beneficial Owners will not receive definitive Series A Bonds, except in the event that use of the book-entry system for such Series A Bonds is discontinued, as discussed below.

To facilitate subsequent transfers, all Series A Bonds are registered in the name of DTC's partnership nominee, Cede & Co., or such other name as may be requested by an authorized representative of DTC. The deposit of the Series A Bonds with DTC and their registration in the name of Cede & Co. or such other nominee do not effect any change in beneficial ownership. DTC has no knowledge of the actual Beneficial Owners of the Series A Bonds; DTC's records reflect only the identity of the Direct Participants to whose accounts the Series A 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. Beneficial Owners of the Series A Bonds may wish to take certain steps to augment transmission to them of notices of significant events with respect to such Series A Bonds, such as redemptions, tenders, defaults, and proposed amendments to the security documents. For example, Beneficial Owners may wish to ascertain that the nominee holding the Series A Bonds for their benefit has agreed to obtain and transmit notices to Beneficial Owners. In the alternative, Beneficial Owners may wish to provide their names and addresses to the Trustee and request that copies of the notices be provided directly to them.

Redemption notices shall be sent to DTC. If less than all of the Series A Bonds within a maturity and Series are being redeemed, DTC's practice is to determine by lot the amount of the interest of each Direct Participant in such issue to be redeemed.

Neither DTC nor Cede & Co. (or any other DTC nominee) will consent or vote with respect to the Series A Bonds unless authorized by a Direct Participant in accordance with DTC's Procedures. Under its usual procedures, DTC mails an Omnibus Proxy to the Authority as soon as possible after the applicable record date. The Omnibus Proxy assigns Cede & Co.'s consenting or voting rights to those Direct Participants to whose accounts the Series A Bonds are credited on the record date (identified in a listing attached to the Omnibus Proxy).

Redemption proceeds, distributions, and other payments on Series A Bonds will be made to Cede & Co., or such other nominee as may be requested by an authorized representative of DTC. DTC's practice is to credit Direct Participants' accounts, upon DTC's receipt of funds and corresponding detail information from the Authority or the 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 redemption proceeds, distributions, and other payments to Cede & Co. (or such other nominee as may be requested by an authorized representative of DTC) is the responsibility of the Authority or 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 securities depository with respect to the Series A Bonds at any time by giving reasonable notice to the Authority or the Trustee. Under such circumstances, in the event that a successor securities depository is not obtained, definitive Series A Bonds 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 also, definitive Series A Bonds will be printed and delivered.

The information in this section concerning DTC and DTC's book-entry system has been obtained from sources that the Authority believes to be reliable, but the Authority takes no responsibility for the accuracy thereof.

Transfers

For every transfer and exchange of the Series A Bonds, the Beneficial Owners may be charged a sum sufficient to cover any tax, fee or other charge that may be imposed in relation thereto.

Discontinuance of the Book-Entry Only System

In the event that such book-entry only system is discontinued, the following provisions will apply: principal of and redemption premium, if any, on the Series A Bonds shall be payable in lawful money of the United States of America at the corporate trust office of the Trustee in San Juan, Puerto Rico. Interest on the Series A Bonds will be payable by check mailed to the respective addresses of the registered owners thereof as shown on the registration books of the Authority maintained by the Trustee as of the record date therefor (June 15 and December 15). The Series A Bonds will be issued only as registered bonds without coupons in denominations of $5,000 ($5,000 aggregate principal and interest accruing to the Current Interest Commencement Date in the case of Convertible Capital Appreciation Bonds) or any multiple thereof. The transfer of the Series A Bonds will be registrable and they may be exchanged at the corporate trust office of the Trustee in San Juan, Puerto Rico upon the payment of any taxes or other governmental charges required to be paid with respect to such transfer or exchange.

Redemption

Optional Redemption

The Convertible Capital Appreciation Bonds will not be subject to optional redemption prior to maturity.

The Current Interest Bonds maturing after July 1, 2018 may be redeemed at the option of the Authority prior to maturity, upon not less than 30 days prior notice, either in whole, or in part, in such order of maturity as directed by the Authority, from any available moneys, but not from moneys held by the Trustee in respect of a Sinking Fund Requirement, on any date not earlier than July 1, 2018, at the principal amount of the Series A Bonds to be redeemed, plus accrued interest to the redemption date, without premium.

Sinking Fund Requirements

The Series A Term Bonds maturing July 1, 2024, July 1, 2028, July 1, 2038, July 1, 2044 and July 1, 2047 shall be redeemed in part on July 1, 2017, July 1, 2026, July 1, 2029, July 1, 2039 and July 1, 2045, respectively, and each July 1 thereafter in the principal amounts equal to the respective Sinking Fund Requirements (less the principal amount of any Series A Term Bonds retired by purchase) from moneys in the Senior Bond Account at par plus accrued interest in the years and amounts set forth below:

	Annual Sinking Fund Requirements for Series A Bonds due July 1,				
Year	**2024**	**2028**	**2038**	**2044**	**2047**
	(dollars in thousands)				
2017	$ 15,690				
2018	16,650				
2019	17,670				
2020	18,750				
2021	19,900				
2022	21,120				
2023	22,410				
2024	23,785*				
2025					
2026		$ 26,505			
2027		27,830			
2028		29,220*			
2029			$ 30,680		
2030			32,520		
2031			34,470		
2032			36,540		
2033			38,735		
2034			41,055		
2035			43,520		
2036			46,130		
2037			48,900		
2038			29,395*		
2039				$ 54,975	
2040				58,275	
2041				61,770	
2042				65,480	
2043				69,405	
2044				73,570*	
2045					$ 77,985
2046					81,980
2047					86,185*
Total	$155,975	$83,555	$381,945	$383,475	$246,150
Average life (years)	13.097	19.319	26.028	33.956	38.319

* Final maturity.

Notice of Redemption

At least thirty (30) days prior to any redemption, notice thereof will be sent by registered or certified mail or overnight express delivery to the Holder of each Series A Bond to be redeemed at the address as it appears on the registration books kept by the Trustee and all organizations registered with the Securities and Exchange Commission (the "SEC") as securities depositories and to each NRMSIR designated as such by the SEC. If less than all of the Series A Bonds of any one maturity are called for redemption, the particular Series A Bonds or portions thereof to

be redeemed will be selected by the Trustee by such method as it deems fair, except that so long as the book-entry only system shall remain in effect, in the event of any such partial redemption, DTC shall reduce the credit balances of the applicable DTC Participants in respect of such Series A Bonds, and such DTC Participants shall in turn select those Beneficial Owners whose ownership interests are to be extinguished by such partial redemption, each by such method as DTC or such DTC Participants, as the case may be, in its sole discretion deems fair and appropriate. Each notice of redemption shall contain, among other things, the CUSIP identification number and the number of the Series A Bonds (or portion thereof) being called for redemption, the redemption date and price and the address at which Series A Bonds are to be surrendered for payment of the redemption price. Any defect in such notice or the failure so to mail any such notice to registered owner of any Series A Bond will not affect the validity of the proceedings for the redemption of any other Series A Bond. Any defect in such notice or the failure so to mail any such notice to any such national information service will not affect the effectiveness of a call for redemption. Notices of optional redemption are permitted under the Trust Agreement to be given with the condition that the effectiveness of such optional redemption is dependent upon the Trustee having in its possession on the date of redemption moneys sufficient to enable it to pay the applicable redemption price on the corresponding Series A Bonds and in the absence of such possession by the Trustee, such redemption will not take place.

Concerning the Policy for the Insured Series A Bonds

As provided in Bond Resolution, Assured Guaranty shall be deemed to be the owner of the Insured Bonds for purposes of (1) taking remedial actions under the Trust Agreement and (2) as long as Assured Guaranty shall not then be in default on its obligations under the Policy, the giving of consents to the execution of any agreement supplemental to the Trust Agreement.

BOND INSURANCE

The following information is not complete and reference is made to *Appendix V* for a specimen of the Policy of Assured Guaranty.

The Policy

Assured Guaranty has made a commitment to issue the Policy with respect to the scheduled payments of principal of and interest on the Insured Bonds, effective as of the date of issuance of such Insured Bonds. Under the terms of the Policy, Assured Guaranty will unconditionally and irrevocably guarantee to pay that portion of principal of and interest on the Insured Bonds that becomes Due for Payment but shall be unpaid by reason of Nonpayment (the "Insured Payments"). Insured Payments shall not include any additional amounts owing by the Authority solely as a result of the failure by the Trustee to pay such amount when due and payable, including without limitation any such additional amounts as may be attributable to penalties or to interest accruing at a default rate, to amounts payable in respect of indemnification, or to any other additional amounts payable by the Trustee by reason of such failure. The Policy is non-cancelable for any reason, including without limitation the non-payment of premium.

"Due for Payment" means, when referring to the principal of the Insured Bonds, the stated maturity date thereof, or the date on which such Insured Bonds shall have been duly called for mandatory sinking fund redemption, and does not refer to any earlier date on which payment is due by reason of a call for redemption (other than by mandatory sinking fund redemption), acceleration or other advancement of maturity (unless Assured Guaranty in its sole discretion elects to make any principal payment, in whole or in part, on such earlier date) and, when referring to interest on such Insured Bonds, means the stated dates for payment of interest.

"Nonpayment" means the failure of the Authority to have provided sufficient funds to the Trustee for payment in full of all principal and interest Due for Payment on the Insured Bonds. It is further understood that the term Nonpayment in respect of an Insured Bond also includes any amount previously distributed to the holder of such Insured Bond in respect of any Insured Payment by or on behalf of the Authority, which amount has been recovered from such holder pursuant to the United States Bankruptcy Code in accordance with a final, nonappealable order of a court having competent jurisdiction that such payment constitutes an avoidable preference with respect to such holder. Nonpayment does not include nonpayment of principal or interest caused by the failure of the Trustee to pay such amount when due and payable.

Assured Guaranty will pay each portion of an Insured Payment that is Due for Payment and unpaid by reason of Nonpayment, on the later to occur of (i) the date such principal or interest becomes Due for Payment, or (ii) the business day next following the day on which Assured Guaranty shall have received a completed notice of Nonpayment therefor in accordance with the terms of the Policy.

Assured Guaranty shall be fully subrogated to the rights of the holders of the Insured Bonds to receive payments in respect of the Insured Payments to the extent of any payment by Assured Guaranty under the Policy.

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

Assured Guaranty

Assured Guaranty is a Maryland-domiciled insurance company regulated by the Maryland Insurance Administration and licensed to conduct financial guaranty insurance business in all fifty states of the United States, the District of Columbia and Puerto Rico. Assured Guaranty commenced operations in 1988. Assured Guaranty is a wholly owned, indirect subsidiary of Assured Guaranty Ltd. ("AGL"), a Bermuda-based holding company whose shares are publicly traded and are listed on the New York Stock Exchange under the symbol "AGO." AGL, through its operating subsidiaries, provides credit enhancement products to the U.S. and global public finance, structured finance and mortgage markets. Neither AGL nor any of its shareholders is obligated to pay any debts of Assured Guaranty or any claims under any insurance policy issued by Assured Guaranty.

Assured Guaranty is subject to insurance laws and regulations in Maryland and in New York (and in other jurisdictions in which it is licensed) that, among other things, (i) limit Assured Guaranty's business to financial guaranty insurance and related lines, (ii) prescribe minimum solvency requirements, including capital and surplus requirements, (iii) limit classes and concentrations of investments, (iv) regulate the amount of both the aggregate and individual risks that may be insured, (v) limit the payment of dividends by Assured Guaranty, (vi) require the maintenance of contingency reserves, and (vii) govern changes in control and transactions among affiliates. Certain state laws to which Assured Guaranty is subject also require the approval of policy rates and forms.

Assured Guaranty's financial strength is rated "Aaa" by Moody's Investors Service, Inc. ("Moody's"), "AAA" by S&P and "AAA" by Fitch, Inc. ("Fitch"). Each rating of Assured Guaranty should be evaluated independently. An explanation of the significance of the above ratings may be obtained from the applicable rating agency. The above ratings are not recommendations to buy, sell or hold any security, and such ratings are subject to revision or withdrawal at any time by the rating agencies. Any downward revision or withdrawal of any of the above ratings may have an adverse effect on the market price of any security guaranteed by Assured Guaranty. Assured Guaranty does not guaranty the market price of the securities it guarantees, nor does it guaranty that the ratings on such securities will not be revised or withdrawn.

Capitalization of Assured Guaranty

As of December 31, 2007, Assured Guaranty had total admitted assets of $1,361,538,502 (unaudited), total liabilities of $961,967,38 (unaudited), total surplus of $399,571,264 (unaudited) and total statutory capital (surplus plus contingency reserves) of $982,045,695 (unaudited) determined in accordance with statutory accounting practices prescribed or permitted by insurance regulatory authorities. As of December 31, 2006, Assured Guaranty had total admitted assets of $1,248,270,663 (audited), total liabilities of $962,316,898 (audited), total surplus of $285,953,765 (audited) and total statutory capital (surplus plus contingency reserves) of $916,827,559 (audited) determined in accordance with statutory accounting practices prescribed or permitted by insurance regulatory authorities. The Maryland Insurance Administration recognizes only statutory accounting practices for determining and reporting the financial condition and results of operations of an insurance company, for determining its solvency under the Maryland Insurance Code, and for determining whether its financial condition warrants the payment of a dividend to its stockholders. No consideration is given by the Maryland Insurance Administration to financial statements prepared in accordance with accounting principles generally accepted in the United States ("GAAP") in making such determinations.

Incorporation of Certain Documents by Reference

The portions of the following documents relating to Assured Guaranty are hereby incorporated by reference into this Official Statement and shall be deemed to be a part hereof:

- The Annual Report on Form 10-K of AGL for the fiscal year ended December 31, 2007 (which was filed by AGL with the Securities and Exchange Commission (the "SEC") on February 29, 2008); and

- The Current Reports on Form 8-K filed by AGL with the SEC, as they relate to Assured Guaranty.

All consolidated financial statements of Assured Guaranty and all other information relating to Assured Guaranty included in documents filed by AGL with the SEC pursuant to Section 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended, subsequent to the date of this Official Statement and prior to the termination of the offering of the Insured Bonds shall be deemed to be incorporated by reference into this Official Statement and to be a part hereof from the respective dates of filing such consolidated financial statements.

Any statement contained in a document incorporated herein by reference or contained herein under the heading "Assured Guaranty" under "BOND INSURANCE - Assured Guaranty" shall be modified or superseded for purposes of this Official Statement to the extent that a statement contained herein or in any subsequently filed document which is incorporated by reference herein also modifies or supersedes such statement. Any statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this Official Statement.

Copies of the consolidated financial statements of Assured Guaranty incorporated by reference herein and of the statutory financial statements filed by Assured Guaranty with the Maryland Insurance Administration are available upon request by contacting Assured Guaranty at 1325 Avenue of the Americas, New York, New York 10019 or by calling Assured Guaranty at (212) 974-0100. In addition, the information regarding Assured Guaranty that is incorporated by reference in this Official Statement that has been filed by AGL with the SEC is available to the public over the Internet at the SEC's web site at *http://www.sec.gov* and at AGL's web site at *http://www.assuredguaranty.com*, from the SEC's Public Reference Room at 450 Fifth Street, N.W., Room 1024, Washington, D.C. 20549, and at the office of the New York Stock Exchange at 20 Broad Street, New York, New York 10005.

Assured Guaranty makes no representation regarding the Series A Bonds or the advisability of investing in the Series A Bonds. In addition, Assured Guaranty 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 with respect to the accuracy of the information regarding Assured Guaranty supplied by Assured Guaranty and presented under the heading "BOND INSURANCE - Assured Guaranty".

THE AUTHORITY

The Authority is a body corporate and politic constituting a public corporation and governmental instrumentality of the Commonwealth. The Authority owns and operates the public water supply and wastewater systems of the Commonwealth.

The executive offices of the Authority are located at 604 Barbosa Avenue, Hato Rey, Puerto Rico 00916. The telephone number is (787) 620-2277.

Powers

The Authority has broad powers under the Act, including the power to make contracts, to acquire properties by any lawful means, to exercise eminent domain, to hold, operate and administer its properties, to borrow money and issue bonds for any of its corporate purposes, to secure the payment of its bonds and all other obligations by

pledge of its revenues, to determine, revise, charge and collect rates, fees, rentals and other charges for the use of its facilities and to have complete control and supervision of its properties and activities.

Management

The Governing Board of the Authority (the "Board") is composed of nine members, five of whom are private citizens (the "Independent Directors") appointed by the Governor of Puerto Rico and confirmed by the Senate; two of whom are ex-officio members in their capacity as Executive Director of the Electric Power Authority and President of the Planning Board; and two of whom are ex-officio members in their capacity as Executive Directors of the organizations representing Mayors of the Municipalities of the Commonwealth. Members of the Board who are not ex-officio members serve staggered, five-year terms. The members of the Board are:

Members	Occupation	Term Ends
Eng. Jorge Rodríguez Ruiz	Executive Director, Electric Power Authority; Board Chairman	Ex-Officio
Mr. Luis R. Abbott Van Der Horst	Independent Director; Vice Chairman	June 30, 2009
Mr. Rafael L. Stella Ferrer	Independent Director	June 30, 2008
Eng. Harry Rodríguez García	Independent Director	June 30, 2008
Mr. Gilberto Conde Román	Executive Director of the Federation of Mayors	Ex-Officio
Mr. Jaime García García	Executive Director of the Association of Mayors	Ex-Officio
Eng. Ángel D. Rodríguez Quiñones	President of Planning Board	Ex-Officio
Eng. José L. Díaz Cotto	Independent Director	June 30, 2010
Ms. Ángeles Rodríguez D'Andrea	Independent Director	June 30, 2009

The Board is responsible for making or approving all major decisions taken by the Authority, including overall institutional policies, the Authority's strategies and programs, executive and key management manpower recruitments and removals, approval of union contracts, professional services contracts beyond the limits accorded to the Executive President, and all contract changes that are beyond the limits accorded to the Executive President.

The Board is assisted by an Internal Audit Unit which is responsible for conducting institutional audits for the Board, and by a Board Secretary, who maintains Board records, among other responsibilities.

The Board appoints the Executive President, who is the chief executive officer of the Authority responsible for its day-to-day operations. The appointment is for a six-year term. In addition, under the Act, the operations of the Authority are divided into five geographical regions and are run by regional executive directors who report to the Executive President and are also subject to six-year terms. Set forth below are brief biographical descriptions of the Executive President and certain members of the Authority's senior management staff.

Eng. José Ortiz Vázquez, Executive President, was appointed to that position in January 2007. Prior to his appointment, he was the Authority's Executive Director for Infrastructure, from 2004. Before that he spent 14 years in the manufacturing industry, having served as Engineering Director for multinational firms including Colgate-Palmolive and Unilever. He holds a Bachelor's Degree in Electrical Engineering from the Mayagüez Campus of the University of Puerto Rico and a Master's Degree in Business Administration from the University of Turabo.

Andrés García, Executive Vice President, assumed such position in August 2006. From February 2005 until assuming his current position, he worked as Executive Assistant to the Executive President of the Authority. Prior to that, he served as Assistant Advisor to the Governor on Environmental and Infrastructure Affairs and as

Executive Assistant to the Governor's Chief of Staff from 2002-2003 and from 2003-2004, respectively. He holds a Bachelor's Degree in Environmental Sciences from the Río Piedras Campus of the University of Puerto Rico and a Master's Degree in Natural Resources Management from the University of Connecticut.

Eng. Alberto Lázaro, Executive Director for Infrastructure, assumed such position in January 2007 after having served as the Authority's Director of Engineering for two years. Prior to that, he served as Deputy Secretary for Puerto Rico Department of Natural and Environmental Resources for two years and as an environmental engineer consultant in the private sector for seven years, involved with planning, design, construction management and operation of water and sewer facilities. He holds a Bachelor's Degree in Civil Engineering from Cornell University and a Master's Degree in Environmental Engineering from the Massachusetts Institute of Technology (MIT).

Efraín Acosta Reboyras, Executive Director of Administration and Finance, was appointed to such position in April 2004. Prior to that, he served as Deputy Executive Director of Finance for Puerto Rico Industrial Development Company. Before joining the government, Mr. Acosta worked in various senior financial and accounting positions in the private sector for companies such as 3M, Bacardi Corporation, Haskins & Sells and ITT Corporation. Mr. Acosta holds a Bachelor's Degree in Business Administration from the University of Puerto Rico and has pursued his Masters of Business Administration degree from Interamerican University of Puerto Rico.

Raquel Matos, Esq., General Legal Counsel, assumed such position in November 2006 after having served as the Authority's Internal Auditor for almost two years. Prior to that, she served as Legal Counsel to the Office of the Comptroller of the Commonwealth for two years. Ms. Matos holds a Juris Doctor from the University of Puerto Rico School of Law and a Bachelor's Degree in Business Administration, with a major in accounting, from the University of Puerto Rico, Río Piedras Campus. She is also a CPA.

Belkin Nieves, Esq., Human Resources and Labor Relations Director, was appointed to such position in November 2004. Ms. Nieves joined the Authority in February 2003 as Auxiliary Chief Legal Counsel. In April 2004 she became the Labor Relations Director before assuming her current position. From 2001-2003 she worked as an associate in a San Juan law firm. Ms. Nieves obtained a *Juris Doctor* from Interamerican University of Puerto Rico and a Bachelor's Degree in labor relations from the Río Piedras Campus of the University of Puerto Rico.

Eng. José Capeles, Executive Director of Environmental Compliance and Quality Control, was appointed to such position in February 2007, after having served as the Authority's Deputy Executive Director for Infrastructure since 2004. Prior to that, he served as Vice President of Compliance and Planning for the Authority, directing and administering the private operator's service contract related obligations. Eng. Capeles joined the public sector in 2001 after 25 years of service in various technical and executive management positions for multinational manufacturing and marketing firms, including Sunoco and Enron. He holds a Bachelor's Degree in Chemical Engineering from the University of Puerto Rico, Mayagüez Campus, and has taken several post-graduate courses, including an Executive Business Program from Dartmouth College, New Hampshire.

Eng. Gerardo González, Executive Director for the Metro Region, was appointed to such position in December 2005. Eng. González has been with the Authority since 2004. Before 2004, he worked with Ondeo de Puerto Rico (a subsidiary of Suez Environnement) as the liaison between Ondeo and the Authority and during 2000-2003, he worked for Compañía de Aguas de Puerto Rico (a subsidiary of Vivendi) as the liaison between Compañía de Aguas and the Authority, all in connection with the Authority's operating agreements with these entities. Eng. González received his Bachelor's Degree in Civil Engineering from the Mayagüez Campus of the University of Puerto Rico.

Israel Hilerio, Executive Director for the North Region, was appointed to that position in February 2004. From 2003-2004, he served as the Director of Finance and Administration for the North Region. Prior to working with the Authority, Mr. Hilerio worked as Vice-President and General Manager for Cervecería India, Inc. for 22 years. Mr. Hilerio obtained his Bachelor's Degree in Accounting from the University of Puerto Rico and a Master's Degree in Business Administration, specializing in finance, at the Interamerican University of Puerto Rico.

Antonio Matías Rosario, Executive Director for the West Region, was appointed to such position in 2005. Mr. Matías has over 25 years' experience in the electronics manufacturing industry, having worked for Smart

Modular Technologies, Inc. and Digital Equipment Corp. Mr. Matías has pursued studies for a Bachelor's Degree in Business Administration.

Juan Felipe Santos Cedeño, Executive Director for the South Region, has held such position since 2003. Before joining the Authority, Mr. Santos worked for DANA Engine Management Group in Ponce, Puerto Rico for 23 years, where he held various positions. He was Division Manager of the Engine Division before leaving DANA. Mr. Santos obtained a dual Bachelor's Degree in Business Administration and Accounting from the Pontifical Catholic University of Puerto Rico and is currently completing his MBA at the Interamerican University of Puerto Rico.

Eufemio Toucet, Executive Director for the East Region, has held such position since 2005. Before joining the Authority, Mr. Toucet worked for Cemex de Puerto Rico, Inc. as Executive Director of Ready Mix, for four years. Prior to that, he was President and General Manager of Storage Technology, Ponce, Puerto Rico, and Plant Manager of Digital Equipment Corporation, San Germán, Puerto Rico. Mr. Toucet obtained a Bachelor's Degree in Industrial Engineering from the University of Puerto Rico, Mayagüez Campus.

The Consulting Engineer has determined that the Authority's current management structure is well-developed and consistent with those found at similar U.S. utilities of equivalent size.

The Authority has organized its service area into five regions to decentralize the management and administration of many operational matters. Regional executive directors, serving terms of six years and reporting to the Executive President, are responsible for administration and operation of water and wastewater facilities within each region. The Authority's management has taken and is continuing to take steps to strengthen the operation and management of the Authority. These steps include improved billing and collection procedures (including mobile and remote meter readings to reduce the number of estimated bills being produced), consolidation and computerization of the CIP planning process, creation of the office of Environmental Compliance, upgrading of laboratory personnel and facilities, organization of the Pretreatment Area to manage the Authority's pretreatment program, and improved handling of personnel grievances within the Human Resources Area.

Employees and Labor Relations

The Authority had 5,314 regular employees as of September 30, 2007, as compared with 5,332 as of June 30, 2007 and 5,427 as of June 30, 2006. At September 30, 2007, 4,196 employees were represented by two unions, the largest of which was the Independent Authentic Union (the "IAU") with 4,013 members. The Authority's current labor union contracts have expired and are currently under negotiation.

The Authority's relations with its unionized employees have at times been contentious. A prolonged work stoppage, for example, occurred in 2004, and lasted 84 days. Prior to that, multi-day labor stoppages would occur periodically. At present, the collective bargaining agreement with the IAU has expired. Negotiations of a new collective bargaining agreement with the IAU stalled in 2006, primarily because of issues related to an IAU sponsored and controlled medical benefits plan (the "Plan"). The Authority discontinued payments to the Plan in 2004 based upon certain findings by the Puerto Rico Insurance Commissioner that Plan funds were misused. In 2005, concurrently with end of the 84 day work stoppage, the Authority put into effect the economic benefits that had been negotiated with the IAU notwithstanding the fact that the collective bargaining agreement had not been executed.

In 2005, many of the senior officers of the IAU were indicted on charges of misappropriating funds that were earmarked for the Plan. After a three-week trial in 2006, all of the indicted officers were found guilty of the charges against them. They have been sentenced to jail but are appealing certain aspects of their convictions. All of those convicted have been expelled from the IAU.

While a number of economic and other issues had been agreed to during the negotiations for the collective bargaining agreement, which have been ongoing since April 2004, currently there are no significant negotiations between the Authority and the IAU. All economic terms of the new contract have, however, been agreed to, and the

Authority is honoring those terms. Pending final negotiation and execution of a new collective bargaining agreement with IAU, the management of the Authority believes that current labor relations are satisfactory.

On February 14, 2007, the Puerto Rico Insurance Commissioner liquidated the Plan based on its finding that the Plan assets were insufficient to cover outstanding liabilities. Currently, the employees of the Authority are covered by the Authority's private medical plan, which plan is financed by contributions made by the Authority.

Pension Plan

Substantially all of the employees of the Authority are covered under one of two pension plans administered by the Employees Retirement System of the Government of Puerto Rico and its instrumentalities (the "Employees Retirement System") which covers 180,933 employees of the Commonwealth, its municipalities and its instrumentalities. The Employees Retirement System is financed by contributions by the employers (the Commonwealth, public corporations, including the Authority, and municipalities), contributions by the employees and investment income. Retirement and related benefits provided by, and required employee contributions to, the Employees Retirement System are determined by Commonwealth statute and may be changed by statute. Required contributions by employers are determined by the Administrator of the Employees Retirement System. The Authority's monthly contribution to the Employees Retirement System equals 9.275% of the participating employees' salaries, and the Authority's total pension cost for the fiscal year ended June 30, 2007 was $14.1 million.

Conclusions of Consulting Engineer Regarding Management and Staffing

Set forth below are the conclusions of the Consulting Engineer from the Consulting Engineer's Report related to the Authority's management and staffing. They are also contained in Section 8 of the Consulting Engineer's Report in *Appendix II*, which Report should be referred to for a discussion of the assumptions and limitations that apply to these conclusions.

1. Although the size and scale of the Authority is rather unique compared to most water and wastewater utilities in the United States, the current Authority organization has many characteristics that are similar to these utilities. All of the components necessary to operate a well-performing utility are found in the Authority's organization. The objectives and strategies developed and currently being implemented by the new management team to address historical problems and issues are appropriate and a positive step towards achieving the Authority's goal of being a world-class utility.

2. Although some individual facilities have staffing shortages, the Authority's overall staff levels have been historically high compared to industry standards. Through the planned closure of a number of older treatment plants and consolidation to regional treatment plants, it is expected that the Authority will be able to maintain or possibly reduce the existing staffing levels. Currently the Authority has sufficient staff to operate and maintain the Systems.

3. The Authority is continuing to improve the quality of its professional staff and has been successful in attracting well-qualified personnel from the private sector. To improve its recruitment efforts and attract and retain top quality professional staff, the Authority is providing comprehensive benefit packages and exceptions to its official salary scale. With the continuation of these practices, the Authority is continuing to fill key management positions with qualified personnel.

AUTHORITY CONSULTANTS

The Authority has contracted the Consulting Engineer to prepare the Consulting Engineer's Report on the state of the Authority's Systems, on its CIP and on its financial condition/projections and to provide the services of the Consulting Engineer under the Trust Agreement. The Consulting Engineer's Report is attached to this Official Statement as *Appendix II* and should be read in its entirety for a more complete description of the Authority's operations and facilities and for the conclusions reached by them about the state of the Authority's Systems, its CIP

and its financial condition/projections. Certain of these conclusions are set forth in other sections of this Official Statement.

In addition, the Authority has obtained the services of recognized engineering firms and program management consultants (in some cases providing the requested services through financially guaranteed, local affiliates) to assist in the planning, design and management of its CIP in each of the Authority's five regions:

Region	Consultant
West	CDM Caribbean Engineers, PSC
North	CPM-MPPR Infrastructure Managers, PSC
South	Black & Veatch of Puerto Rico
Metro	CH Caribe Engineers
East	CSA Architects and Engineers

As covered more fully in the Consulting Engineer's Report in *Appendix II*, the Authority has embarked on programs to improve its operations and to maintain its financial self-sufficiency. To assist it in these endeavors, the Authority has engaged other recognized consulting firms, including Gregory Morris Engineering, PSC, Watson Wyatt Worldwide, Inc., Accenture, McKinsey & Co., URS Caribe and PCG Corporation.

THE WATER AND WASTEWATER SYSTEMS

Introduction

The island of Puerto Rico is about 100 miles long and 35 miles wide. As of July 1, 2006, its population was estimated by the Planning Board to be approximately four million. The Municipality of San Juan, on the north coast, is Puerto Rico's capital, and is the center of the metropolitan area with approximately 1.2 million residents. Most of the remaining population is located on the coastal plains. The island's central land area is rugged and mountainous and less heavily populated. Smaller cities and towns in these areas are linked with each other and the larger population centers by an extensive highway system.

The Authority operates the public water supply and wastewater systems in the Commonwealth. The central government of the Commonwealth and island-wide public corporations such as the Authority are responsible for providing many services, such as police and fire services, education and public health services, as well as water and wastewater services, which, by contrast, are typically provided by local governments on the United States mainland. The Authority's Systems are island-wide, with an estimated 97% of the population served by the Water System and about 55% of the population served by the Wastewater System.

The Authority's facilities are diverse. Large facilities serve metropolitan San Juan. Major facilities also serve other urban centers, and some large regional facilities have also been constructed or planned to serve several communities in a single area. But in many areas, especially in small municipalities located in mountainous terrain, the Authority's facilities are small and must be operated and maintained separately from the principal urban and regional components of the Systems. The differences in size of the communities the Authority serves, the fact that these communities are widely dispersed throughout the island, and the resulting diversity and disparity in the Authority's facilities, make its Systems atypical when compared to water and wastewater utilities in the United States.

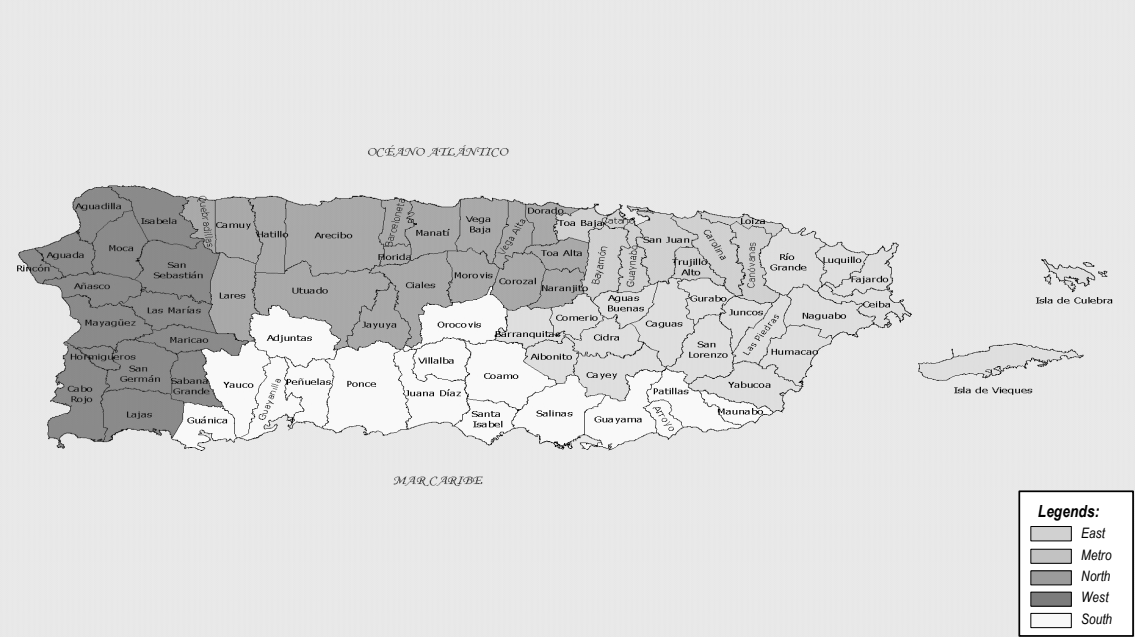
Number of Customers by Type of Service as of June 30, 2007

Type	Water Only	Water and Sewer	TOTAL
Residential	500,240	678,437	1,178,677
Commercial	25,180	42,380	67,560
Industrial	327	1,145	1,472
Government	4,255	7,451	11,706
Total	530,002	729,413	1,259,415

From May 1995 until March 2004, the operation, management, repair and maintenance of the Systems were performed by private companies under operation and management contracts. The most recent agreement for the private management of the Systems was entered into in May 2002 with Ondeo de Puerto Rico, Inc. ("Ondeo"). In January 2004, Ondeo and the Authority agreed to terminate their agreement, and in April 2004, all operation, management, repair and maintenance of the Systems was returned to the Authority.

As part of the return of operations to the Authority, the Authority's management structure was changed by law and additional powers to improve its operational and financial management were enacted. The main areas of this restructuring included: (i) decentralizing the administration of the Authority into five regions to provide greater efficiency in, and financial control of, the day-to-day administration and operational decision-making process and execution; (ii) creating the positions of five Executive Regional Directors and an Executive Director for Infrastructure, who will, respectively, manage each region and be responsible for development, implementation and management of all capital improvement projects; and (iii) providing for six-year appointments for each of the Executive Regional Directors, Executive Director for Infrastructure and Executive President in order to provide longer-term continuity of top management.

As a result, the Systems' operation has been divided into five regions (North, South, East, West and Metro). Set forth below is a map that illustrates the operational regions:



The Systems are highly complex and some of its facilities are in need of significant upgrades, replacement, additions or rehabilitation due to compliance issues, changes in the regulatory requirements or deterioration due to age or insufficient maintenance.

The Authority's goals are to (i) simplify the Systems and improve customer service, (ii) achieve and maintain regulatory compliance and financial self-sufficiency, (iii) prioritize and execute projects in deficient areas, (iv) foresee and manage toward future compliance requirements, (v) maximize financial resources, and (vi) implement corrective management initiatives.

The Water System

The Water System provides drinking water to virtually all (97%) residences, businesses, government and industries throughout Puerto Rico. The Water System is made up of water supply facilities, including reservoirs,

dams, wells and pump stations, 129 water treatment plants and an extensive drinking water distribution system, including about 7,500 miles of pipe.

The Authority's raw water supply is drawn both from surface water sources and wells. There are adequate sources of raw water from groundwater wells, rivers and streams to meet the current and projected needs of the Water System. Surface water sources—small dams, weirs, regulated dams, lakes, rivers and streams—account for approximately 85% of the Authority's raw water supply. While Puerto Rico's average rainfall of over 69 inches a year is not evenly distributed across the island, rainfall levels are adequate (together with the Authority's system of aqueducts) to maintain sufficient raw water resources for the surface water facilities. The balance of the System's raw water supply is drawn from several hundred groundwater wells. For the San Juan metropolitan area, water supply is provided by an interconnected system of reservoirs and rivers. The largest water supply facility is Lake Carraízo, providing approximately 100 million gallons per day ("mgd") of capacity. Although Lake Carraízo was dredged in 1997-1998 (a $60 million investment), approximately 30% of the recovered capacity has again been lost due to high erosion at the watershed and sediments transported into the reservoir (although this erosion has not affected the ability of the Authority to extract its 100 mgd from this facility).

Supply for the San Juan area is augmented by water piped from the Dos Bocas reservoir through the 41.5 mile North Coast Superaqueduct System (the "NCS") completed in 2000. The NCS provides an additional 100 mgd on average from Arecibo to Bayamón, San Juan and other metropolitan area communities. The NCS is operated and maintained by Thames-Dick Superaqueduct Partners ("Thames-Dick") under a master agreement that also covered its construction. The operation and maintenance contract expires in September 2008, subject to extension by the Authority for up to two additional five-year terms and a third extension term of two years. Compensation is based on both an annual fixed fee component (approximately $6.7 million) and certain pass-through costs. Thames-Dick is entitled to receive incentive payments if it reduces electricity and chemicals consumption, which are pass-through costs up to certain maximum amounts beyond which the costs are borne by Thames-Dick.

In contrast to the supply systems in the San Juan area and some of the other large population centers, many smaller systems rely entirely on local water supply sources and, because of distance and terrain, are not linked with any other supply system.

The Authority's drinking water production and treatment facilities treat and filter raw water before it flows into the distribution system. Island-wide, the Authority's treatment plant average water production is approximately 591 mgd, and the Authority has been operating many treatment plants in excess of rated design capacity as a result of an approximately 82 mgd maximum day demand deficit. The two large and four small treatment plants located in the San Juan metropolitan area and the transmission from the NCS and the related Enrique Ortega Water Treatment Plant have a combined production capacity of approximately 275 mgd, about 47% of the Water System total. Altogether there are 129 treatment plants for surface water supplies, all of which provide complete treatment consisting of coagulation, sedimentation and filtration. Well supplies are disinfected with chlorine but not otherwise treated before entering the distribution mains. The operation of the Authority's treatment plants has been affected by the increasing stringency of drinking water quality regulation.

The water supply distribution systems utilize approximately 7,500 miles of transmission and distribution mains to deliver water to consumers from wells and treatment plants. Distribution is generally achieved by gravity. The Authority is committed to improving and expanding the distribution system in rural as well as urban areas.

Water quality generally meets the National Primary Standards established by EPA under the federal Safe Drinking Water Act although the Water System has experienced parameter violations. The Authority has entered into the 2006 Drinking Water Settlement Agreement to address these and other violations. See "Regulatory Compliance" under *Environmental Matters*. The Consulting Engineer has evaluated the Authority's Water System and has concluded that the Authority's treatment plants, while aging, pump stations and storage tanks are generally in adequate condition and its dams and wells are in adequate to good condition. Well, pump station and storage tank deficiencies are mostly related to an inability to optimize operations and maintenance rather than to deficiencies in basic functions and are being addressed through the Authority's renewal and replacement program. Seventeen treatment plants with an aggregate capacity of 48 mgd (approximately 8% of total capacity) are considered to be unacceptable from a compliance standpoint due mainly to exceedances of their combined filter effluent turbidity limits. See Section 4 of the Consulting Engineer's Report in *Appendix II*. The 2006 Drinking Water Settlement

Agreement and the Authority's CIP address the problems at these non-compliant plants, and the Authority expects their performance to be brought up to regulatory requirements either through scheduled capital improvements and additional staff training and operating systems improvements or through decommissioning over the next 15 years. To prevent future deterioration of its plants, the Authority is working closely with EPA, DOH and EQB to identify current capital improvement and process needs.

The portion of the CIP devoted to the Water System is principally directed at (i) compliance with the 2006 EPA Consent Decree, (ii) expanding raw water supply and protecting the capacity of existing reservoirs against loss from silting, (iii) upgrading and expanding treatment plant capacity to increase water production and improve treated water quality, and (iv) improving transmission and distribution systems, especially to reduce unaccounted-for water. The Authority believes that the projects included in the Water System CIP will enable it to meet its necessary goals and compliance requirements and meet its potable water supply demands over the next ten years. After completion of these projects, additional major improvements not included in the CIP may be necessary to maintain and improve reliable operation of the Water System and may be required to meet proposed water quality regulations developed by EPA under the federal Safe Drinking Water Act.

For more information on the projects in the Water System CIP, see *Capital Improvement Program* and the Consulting Engineer's Report in *Appendix II*. For information concerning the principal federal and Commonwealth regulations to which the Water System is subject, see "Water System Regulation" under *Environmental Matters*.

Customers of the Water System. The following table sets forth the number and types of customers served by the Water System during the five fiscal years ended June 30, 2007:

Number of Customers with Water Service

Year	Residential	Commercial	Industrial	Government[(1)]	Total[(2)]
2003.....	1,129,246	65,517	1,530	11,086	1,207,379
2004.....	1,145,963	67,375	1,528	11,033	1,225,899
2005.....	1,161,350	68,093	1,533	11,584	1,242,560
2006.....	1,173,040	68,396	1,526	11,688	1,254,650
2007.....	1,178,677	67,560	1,472	11,706	1,259,415

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(1) Data extracted from the Authority's customer records at June 30, 2003, 2004 and 2005; may not conform to presentation in audited financial statements due to, among other things, changes in the System between the original extraction and the detailed extraction of historical information made in October 2006.

(2) Does not include fire hydrants.

Water Production and Consumption. The following table sets forth the consumption of water by categories of the Authority's customers during the five fiscal years ended June 30, 2007:

Water Production and Sales
(Cubic Meters)

	Water Sales							
Year	Residential	Commercial	Industrial	Government	Total	Estimated Total Water Produced	Volume Unaccounted For	Volume Unaccounted For As Percentage of Total Water Production
2003	255,067,317	41,032,438	13,584,339	38,081,560	347,765,654	797,617,449	449,851,795	56%
2004	261,394,615	47,134,046	14,385,261	35,371,383	358,285,305	813,012,299	454,726,994	56%
2005	260,659,631	46,387,796	12,520,946	35,848,482	355,416,855	871,429,383	516,012,528	59%
2006	265,730,819	45,891,974	12,140,996	35,647,756	359,411,545	887,456,941	528,045,396	60%
2007	263,088,570	42,712,379	11,858,269	32,653,127	350,312,345	934,019,760	583,707,415	62%

The growth in water sales generally resulted from customer growth through fiscal year 2004. The Authority attributes the subsequent decline in water sales (about a three-quarters of a percent compound annual decline since 2004, accompanied by a just under one percent compound annual increase in customers) to greater use

of bottled water, increasing usage of water saving devices in showers, toilets and other places, a major tropical storm and a labor stoppage in fiscal year 2005 and particularly after fiscal year 2005, the large, two-stage rate increase implemented during this period. See *Rates, Billings and Collections*.

As shown in the above table, the Water System has a high percentage of unaccounted-for water (the difference between estimated total water produced and total water sales), although, as is set forth in Section 3 of the Consulting Engineer's Report in *Appendix II*, the information used to calculate unaccounted-for water is not entirely reliable given both the lack of existing or dependable meters at water production facilities (almost half of these facilities and all wells lack adequate meters) and the age and condition of customer meters. During the five fiscal years ended June 30, 2007, the estimated volume of unaccounted-for water has averaged over 506 million cubic meters per year, or approximately 59% of estimated annual water production, substantially higher than U.S. median unaccounted-for water for water utilities. Factors contributing to water system losses include hydrant use, water loss during water main breaks and other leaks, water delivered but not billed, and theft. The Authority believes, however, that its volume of unaccounted-for water may be significantly overstated due to (i) metering deficiencies both at its production facilities and at the point of delivery, (ii) the high level of metering estimates at delivery points and (iii) meter mis-reads by its employees. The Authority, as part of its program to reduce unaccounted-for water, has recently embarked on a comprehensive, system-wide program to reduce its unaccounted-for water and to improve its ability to meter both production and consumption. This program includes (i) replacing meters at its 26 largest water treatment plants by the end of fiscal year 2008 (accounting for 80% of its output), (ii) replacing meters on additional production facilities (accounting for an additional 16% of metered output by the end of fiscal year 2012) and (iii) replacing aged or defective meters at all of its customer locations. From January 2005 through June 2007, approximately 370,000 meters were replaced, and an additional 144,000 of such meters are planned to be replaced by fiscal year 2010.

The Authority has instituted new preventive maintenance practices which allow it to improve its replacement of pipes that are prone to leak or break. During the 15-month period ended in March 2007, the Authority replaced about 20% more pipe than it had forecasted for that period, and the Authority is on pace to replace all pipes over a 61-year cycle, which, according to the Consulting Engineer, is consistent with industry practice. It has also started a water accountability pilot program whose goal is to document "non-revenue" water usage by five groups of geographically diverse customer blocks of approximately 5,000 each and to enable the Authority to develop island-wide procedures to reduce revenue losses from unaccounted-for water. Initial results of the program indicate that theft and inaccurate customer billing data may result in revenue losses of around $43 million annually based on system-wide average monthly per customer billings. Reducing unaccounted-for water will have both a revenue enhancing impact (as estimated above) and an expense reduction impact as illegal connections are eliminated along with the costs of supplying them. The Authority has instituted an intensive leak monitoring program that has allowed the Authority to discover and repair leaks more quickly. The rate of leak occurrence in the Authority's Water System is much higher than for that of mainland U.S. and Canadian water systems and contributes to the volume of unaccounted-for water (see Section 4.9.1 of the Consulting Engineer's Report in *Appendix II*). With time, however, the Authority's steps in identifying and repairing leaks and replacing pipe (as set forth in the Consulting Engineer's Report) is expected to reduce the volume of unaccounted-for water. The Water System CIP includes $42 million during the next five years to replace its older customer meters. The Authority intends on continuing a meter replacement program to reduce as much as possible meter mis-reads and other inaccurate water consumption data. In order to reduce inaccuracies in the reporting of potable water production, the Water System CIP also includes funds for installing or repairing treatment plant meters at plants which account for 96% of the Authority's treatment plant production capacity over the next five years.

The Wastewater System

The Wastewater System is made up of sewage collection and conveyance systems (including trunk and lateral sewers) and treatment plants. The basic collection and conveyance system consists of approximately 4,000 miles of lateral, trunk and interceptor sewers and transmission mains which carry wastewater to the 62 treatment plants from the points of connection with the Authority's customers. Over six hundred manned or unmanned pumping stations aid these wastewater flows. The most significant collection systems serve the San Juan metropolitan area, with interceptor or trunk sewers as large as ten feet in diameter and an extensive network of large and small pumping stations. Elsewhere, the collection systems depend on the size and topography of the community served. As a result, in many localities the wastewater collection systems are less extensive than the Authority's

water supply systems. About 55% of the population is connected to the Authority's Wastewater System, leaving many areas reliant on septic systems for wastewater disposal. As new Wastewater System CIP trunk and lateral sewers described below are built, the customer base for the Wastewater System will expand. As a result, the Authority expects increases in wastewater customers in coming years, and it projects a long-term increase to about 68% of the population being connected by 2030.

The Authority's 62 wastewater treatment plants are located throughout the island. As with the Water System, some serve large municipalities, and some serve very small municipalities. Island-wide, the Authority's wastewater treatment plants average treatment is approximately 245 mgd. Total aggregate capacity of the treatment plants is approximately 315 mgd. The ten largest plants account for 77% of total Wastewater System capacity. By level of treatment, three plants are designed to provide tertiary treatment, 53 plants are designed to provide secondary treatment, and the remainder (aggregating 193 mgd of capacity) provide only primary treatment. The Authority intends to maintain operation of wastewater treatment plants providing primary treatment as long as it is allowed by EPA. Should the EPA require installation of secondary treatment systems for any of these plants (primarily activated sludge processes and biofilters), additional, unbudgeted capital and operating expenses will be incurred by the Authority that are not included in its CIP or operating projections.

There is great variation in the size, age and condition of the wastewater treatment plants. The largest plant, the Puerto Nuevo facility in the San Juan metropolitan area, is a 72 mgd primary treatment plant commissioned in 1957. This plant was substantially rehabilitated and upgraded in 1999 and is scheduled to undergo additional rehabilitation and capital improvements during the next five years. Other plants serve other portions of the San Juan metropolitan area, including the 45 mgd Carolina plant, commissioned in 1986, and the 40 mgd Bayamón plant, commissioned in 1983. Ponce is served by an 18 mgd plant commissioned in 1974 which was upgraded and expanded in 1990. The Mayagüez plant, a 22.5 mgd plant commissioned in 1987, serves the Mayagüez area. This plant was upgraded to 28 mgd in 2002. Major new regional plants have also been constructed to replace obsolete smaller facilities. Other regional plants, in addition to those mentioned above, with their capacity and year of original start-up (all of these facilities have been upgraded and renovated since), include Caguas (12 mgd, 1996), Guayama (10 mgd, 1939), Barceloneta (8.33 mgd, 1972), and Arecibo (10 mgd, 1976).

Plants with small treatment capacity typically serve very small and sometimes remote communities. Fifty (50) of the 62 plants now in operation have capacities of less than 8 mgd, and 25 of these smaller plants have capacities of less than 1 mgd. While some of these plants will eventually be replaced by regional facilities, connection to larger plants is not possible in many areas because of rugged terrain.

All but two treatment plants have outfalls which discharge treated wastewater effluent to a nearby stream or pond or to the ocean. Sewage sludge extracted from wastewater in the treatment process is disposed of at sludge disposal facilities, usually a local landfill, except at Mayagüez, where a composting facility serves this plant as well as the Aguadilla wastewater treatment plant; Barceloneta, where a land farming facility serves this and several nearby plants; Arecibo, where a composting facility serves this and several other plants; and at the Puerto Nuevo wastewater treatment plant, where a sludge incinerator will serve this and several nearby plants in the near future.

Portions of the island are served by wastewater treatment plants now operating at or in excess of capacity. In localities served by such plants, the Authority approves sewer connections in accordance with the Authority's capacity management policy agreed to by the EPA under the 2006 EPA Consent Decree. As a result, in many instances, proposed connections for industries, businesses, and residential subdivisions and multi-family buildings have been denied when the Authority cannot divert or otherwise offset any excess flow. The Authority's current capacity management policy permits authorization of new connections to the extent existing flows are reduced by 110% of the flow to be produced by new connections. Sewer connection limitations imposed pursuant to the Authority's capacity management policy may be lifted once the Authority submits to EPA documentation certifying that measures have been implemented such that the average monthly flow to the subject wastewater treatment plant is less than 100% of the monthly average permitted flow for a period of two consecutive months. This provision is also applied to flow exceedances caused by extended periods of rainfall. In most cases this has resulted in relocation of the projects to other areas not affected by the sewer connection limitation, or, in some cases (chiefly residential projects), the delay or cancellation of such projects.

This limitation now applies to nine plants at various locations with approximately 14% of Wastewater System capacity. The largest affected plant serves over 500,000 inhabitants. As capacity-related projects in the CIP described below are completed, all of the affected localities are expected to be relieved of the limitation over the next few years. These improvements will likely lead to increases in sewer customer connections during the CIP five-year period. Meanwhile, many other areas, particularly those served by the new regional treatment plants, have excess treatment plant capacity which will meet future wastewater demand throughout the island.

The Authority's sanitary sewer system overflows per 100 miles of sewer and their duration are higher than for comparable United States or Canadian wastewater systems by a significant amount. Starting in 2006, however, the Authority has reduced the number and duration of such overflows from 997 per 100 miles of sewer (with 92 of the 389 overflows per week having a duration in excess of seven days) for the fiscal year ended June 30, 2006 to 843 per 100 miles of sewer (with five of the 250 overflows per week having a duration in excess of seven days) for the fiscal year ended June 30, 2007. The Authority is required under the 2006 EPA Consent Decree to implement sanitary sewer evaluations and repairs designed to reduce these occurrences and has thus far complied with the 2006 EPA Consent Decree's milestones in this regard.

The condition of the Authority's existing Wastewater System facilities varies widely. The newer wastewater treatment plants, including most of the recently-completed regional wastewater treatment plants and those that have recently been upgraded, are mostly in satisfactory condition. Older plants and smaller plants generally are in inadequate condition, with some exceptions.

With the exception of certain regional wastewater treatment plants, the existing wastewater treatment facilities are in need of expansion, upgrading or rehabilitation in order to comply with regulations governing the discharge of pollutants from wastewater treatment plants and to meet customer demand. The Consulting Engineer inspected all of the Authority's wastewater treatment plants and 15% of the 619 pump stations and concluded that their condition range generally from poor to good with effluent limit compliance (at the treatment plants), equipment malfunctions or inoperability (for the stations) along with general insufficient staffing and monitoring being the greatest challenges. Half of the plants evaluated received poor or unacceptable ratings with respect to regulatory compliance. The Authority is committed to fixing the problems at these facilities and has begun an intensive program of decommissioning plants coupled with consolidation into regional plants where possible and has instituted expanded training, remote monitoring and staffing programs for these facilities as well. In addition, although the Consulting Engineer did not inspect the wastewater collection (sewer) system, the Consulting Engineer believes that a significant portion of the wastewater collection (sewer) system will require structural repairs and rehabilitation in order to reduce inflow and infiltration and to meet regulatory requirements. The CIP includes $677 million to achieve the goal of bringing substandard plants and wastewater collection system into regulatory compliance and making the additional changes referred to above. See Section 4 of the Consulting Engineer's Report in *Appendix II*.

The Wastewater System CIP is a five-year program to rehabilitate, modernize and expand the Authority's Wastewater System. Many of the CIP projects continue projects already in process. These include the planning, construction and start-up of 23 regional wastewater treatment plants and improvements to major plants such as the Puerto Nuevo facility. Two additional plants are included in the CIP in order to consolidate and simplify system operations. In addition, existing local plants are being refurbished, upgraded and in some cases expanded by adding new treatment capacity, including the interim use of package plants. In some municipalities, local plants are being planned or are under construction. These projects will enable the Authority to decommission many of its older plants. In some of these cases, sewage flows will be diverted from an existing plant to facilities elsewhere. In other locations, as new treatment facilities are completed at the site of older plants, the older plants will be decommissioned and replaced by new facilities. Since 1981, 78 plants have been decommissioned by these plant diversions. By 2011, of the 62 plants now in service, 10 are scheduled to be decommissioned by plant diversions and/or through the substitution of new facilities at sites in the immediate area of the old plant sites. The Wastewater System CIP includes collection system and pump station improvements, projects for improved handling and disposal of sludge and programs for classroom and on-the-job training of personnel to support the Authority's operational and maintenance capabilities. The Wastewater System CIP is designed to comply with all current requirements of the 2006 EPA Consent Decree and the Authority's other wastewater consent decrees, including the specific requirements for plant repair, expansions or plant decommissionings, as required by the 2006 EPA Consent Decree. See *Capital Improvement Program* and *Environmental Matters*.

The projects included in the Wastewater System CIP will permit the Authority to materially comply with the 5-year plant improvements mandated by the 2006 EPA Consent Decree. After completion of these projects, additional major improvements (not currently addressed in the CIP) will be necessary to continue to improve reliable operation of the Wastewater System and to provide advanced wastewater treatment at certain of the Authority's wastewater treatment plants and secondary treatment at any plant for which the Authority does not receive approval of a pending application for a waiver of the secondary treatment requirement (see "Other Regulatory and Compliance Matters" under *Environmental Matters* below).

Details on Wastewater System customers and sewer use trends are provided below.

Customers of the Wastewater System. The following table sets forth the number and type of wastewater customers served by the Authority during the five fiscal years ended June 30, 2007:

Customers with Sewer Service

Year	Residential	Commercial	Industrial	Governmental	Total
2003	628,990	40,260	1,141	6,853	677,244
2004	638,416	41,968	1,186	6,730	688,300
2005	653,956	42,504	1,197	7,158	704,815
2006	668,633	42,692	1,191	7,222	719,738
2007	678,437	42,380	1,145	7,451	729,413

Wastewater Use. Wastewater usage is measured by water consumption. The following table sets forth estimated use of the Wastewater System by customer categories for each of the five fiscal years ended June 30, 2007:

Wastewater System Use
(Million Gallons of Water Metered to Wastewater Customers)

Year	Residential	Commercial	Industrial	Governmental	Total
2003	144,237,428	27,731,751	6,285,933	30,718,350	208,973,462
2004	147,258,206	33,189,283	7,164,966	28,696,261	216,308,716
2005	147,563,113	32,393,965	6,326,101	28,829,112	215,112,291
2006	150,177,333	31,451,465	6,083,606	28,336,309	216,048,713
2007	147,684,666	29,067,642	6,163,603	25,701,125	208,617,036

Operation and Maintenance

For many years the Authority has not devoted sufficient resources (both financial and operating) to its infrastructure. As set forth in more detail in the Consulting Engineer's Report, once in service, assets have not always been properly maintained and operated. These deficiencies have been caused by the absence of an integrated asset management plan rather than by a lack or misapplication of resources. In the past, spare parts and other inventory management were sometimes substandard, plant staffing levels (on both the operating and maintenance sides) were too low, operations personnel did not always have the required licenses and remote monitoring of unstaffed plants was lacking, which increased (in some cases significantly) the repair response times in emergencies. The conclusions reached by the Consulting Engineer as to the poor condition of a number of the Authority's operating assets evidence these deficiencies.

Since 2005, the Authority has increased and more efficiently applied the financial and labor resources devoted to operation and maintenance of the Systems and has begun to put in place an integrated preventive maintenance program for Systems' assets that, when fully implemented, will be on a par with the asset management programs of other U.S. and Canadian water and wastewater utilities. Much of this effort has been memorialized in requirements set forth for improving operating and maintenance practices in the 2006 EPA Consent Decree and the 2006 Drinking Water Settlement Agreement with hard deadlines imposed for meeting them and stipulated penalties and the threat of additional criminal sanctions imposed on the Authority for noncompliance. In general, by early calendar 2009, the Authority is required to have the preventive maintenance program in place.

To implement this program, the Authority has increased over four-fold the hours devoted to training plant operators and other employees (to 16 in 2007 from three in 2005) and has augmented training with updates and site maintenance of plant operating manuals and other necessary operating and maintenance documentation. In addition, staffing at many Authority plants will be increased from the current one shift per day to two or more shifts per day; all plant operators will be fully licensed by mid- to late- calendar 2008; key operating position vacancies will be reduced through new hires; and remote monitoring systems will be installed at virtually all plants to allow rapid and properly directed repair responses to plant emergencies during times when no staff is on site. Coordination between regions and the Authority's central management is being improved through measures designed to reduce duplicative activities and operations, to lower unneeded inventory and to enhance spare parts management by making these items regionally available, and the Authority is testing and developing software systems that will keep track of preventive maintenance schedules to assure that assets are serviced properly over their life cycle. These practices, once implemented, will improve customer service, decrease costs and reduce unanticipated plant outages. In addition, the Authority and its main labor union have improved communications and recently negotiated new contract terms which restore management's primacy over operational and maintenance decisions.

The Consulting Engineer has reviewed the steps the Authority has taken in the area of operations and maintenance and has concluded that while the Authority is early on in the process, it is well underway in a major operational transformation, focused on making the needed improvements in practices and is headed in the right direction. See Section 5 of the Consulting Engineer's Report in *Appendix II*.

Summary of Certain Conclusions of the Consulting Engineer

Set forth below are the conclusions of the Consulting Engineer from the Consulting Engineer's Report related to the condition of the Authority's Water and Wastewater Systems as well as on the portion of the CIP directed towards them. They are also contained in Section 8 of the Consulting Engineer's Report in *Appendix II*, which Report should be referred to for a discussion of the assumptions and limitations that apply to these conclusions:

A. The Authority's staff needs additional training to improve effectiveness and increase safe work practices. The Authority recognizes this need and has recently implemented a new comprehensive training program which provided an average of 16 hours of training per employee in fiscal year 2007 compared to an average of three hours per employee in fiscal year 2005. As this program continues, the capabilities and performance of staff working at the Authority is expected to improve over time.

B. Although historically droughts are uncommon in Puerto Rico, much of the island has experienced drought conditions throughout 2007. In 1994, drought conditions required water rationing and reduced water sales. Since that time, the Authority has constructed and continues to construct new reservoirs and water treatment plants to supplement its water supply system, and the 2007 water levels in its major reservoirs have remained significantly above the levels in 1994. The construction and operation of the NCS, which was implemented after the 1994 drought, significantly mitigates the Authority's exposure to droughts in the Metro Region. Although an extended period of drought could again require water rationing, based on the information available and reviewed during the investigation period, the water supply system generally provides adequate water supply.

C. The Authority's amount of unaccounted-for potable water production is very high (approximately 62% of the estimated water produced in fiscal year 2007 was not sold to customers). However, the information used to calculate unaccounted-for water is not entirely reliable given both the lack of existing or reliable meters at water production facilities (almost half of water treatment plants and all wells lack adequate meters) and the age and condition of customer meters. Nonetheless, the significant amount of unaccounted-for water illustrates a potential opportunity available to increase revenues and decrease expenses as a result of the initiatives to reduce unaccounted-for water. It also supports the need, as proposed by the Authority, to embark on aggressive meter replacement programs at both the source and usage locations. The Authority has developed several initiatives to reduce unaccounted-for water and has demonstrated a commitment to making

future reductions in the amount of unaccounted-for water. Successful implementation of the Authority's planned initiatives to reduce unaccounted-for water levels is critical to the Authority's effective management of the Systems. Unaccounted-for water levels are expected to remain above typical industry levels over the forecast period.

D. The condition of the facilities visited varied from new to those requiring significant capital upgrades. Certain facilities are operating out of compliance with discharge permit limits and drinking water standards. Despite numerous compliance problems, the facilities are generally producing and delivering potable water and conveying and treating wastewater to some level of competency. The condition of many facilities is not entirely unexpected due to insufficient commitment of capital and operational resources over the years. The Authority demonstrates a thorough understanding of the Systems' shortcomings. The planned CIP along with the operations and maintenance initiatives are generally in alignment with the Systems' needs. Review of the Authority's CIP showed that all of the water treatment plants and wastewater treatment plants that were considered unacceptable in terms of compliance currently have CIP projects identified to either rehabilitate or close the facility, thus addressing existing compliance problems. Once implemented as planned, these initiatives are expected to result in significant improvement in the performance of the Systems, including substantial advances towards complying with regulatory requirements.

E. The Authority's CIP addresses the requirements of the current consent decrees with the EPA and DOH. However, some of the projects already constructed, such as new sludge treatment systems, are not operating in compliance with permit limits. Additional assessments and a combination of capital and operational improvements are expected to be required to bring these facilities into compliance. The Authority is expected to be addressing the sludge treatment systems in an upcoming consent decree with the EPA.

F. Given the age of many components of the Systems, it will be necessary for the Authority to maintain a commitment to implement its new preventive maintenance initiative (the integrated preventive maintenance program) and continue focused corrective maintenance, repair, and replacement in order to continue to maintain and improve the condition of the Systems and provide a program for the long-term preservation of the Systems' assets. The Authority has included in its CIP provisions for implementing the integrated preventing maintenance program.

G. The Authority's recent annual rate of pipeline renewal and replacement is 1.6% of the total system (based on lengths of existing pipelines recorded in the Authority's surveys). Coupled with the recent sewer lining work, this translates to a complete system renewal in approximately 61 years if the current renewal and replacement rate continues. This renewal and replacement rate is generally consistent with industry practices. The Authority reports that these pipe repairs and replacements, coupled with aggressive management of leaks and overflows, have reduced the duration of water main leaks and both frequency and duration of sewer overflows, although levels are still significantly above typical industry standards. Therefore, the Authority will need to continue to provide significant maintenance and repair funding for the water distribution system and the wastewater collection system.

RATES, BILLINGS AND COLLECTIONS

Rate Setting Powers

The Act requires the Authority to fix and revise rates and charges to be collected for its services and facilities. Under the Act, such rates and charges are required to be just and reasonable. The rates and charges are required to be fixed and revised so as to provide funds at all times sufficient to:

a. pay the cost of maintaining, repairing and operating the Systems, including reserves for such purposes, and for replacement and depreciation;

b. pay the principal of and interest on revenue bonds issued under the Act as the same shall become due, and reserves therefor; and

c. provide a margin of safety for making such payments.

The Authority, under the Act, may change its rates and charges upon the holding of a public hearing after publication of reasonable notice, except for a temporary period or in cases of emergency when changes in rates and charges may be imposed without a public hearing. Act No. 21 of the Legislature of Puerto Rico, approved May 31, 1985 ("Act No. 21"), provides uniform procedures for public hearings and review of the actions of certain public corporations, including the Authority, in connection with changes in the rates set by such public corporations. The Authority's rates are not subject to regulation by the Commonwealth or any of its public agencies.

On January 22, 2008, legislation was introduced in the Senate of Puerto Rico (Senate Bill 2329) to establish a review commission independent of the Authority with the power, among other things, to prevent rate increases by the Authority from taking effect without said commission's approval. The Constitution of Puerto Rico provides protection against enactment of legislation after the issuance of the 2008 Senior Bonds that would have the effect of substantially impairing the Authority's obligations under the Trust Agreement and the 2008 Senior Bonds. Counsel to the Authority is expected to render an opinion to the effect that should the matter be brought before a court in Puerto Rico with proper jurisdiction in a proceeding that has been appropriately briefed and otherwise documented, such court will most likely hold that such proposed bill is a valid exercise of legislative power but that any actions of the review commission *vis á vis* the Authority's rate setting policies could not be exercised in a manner that would cause the Authority to violate the financial covenants under the Trust Agreement in general and its Rate Covenant in particular. No assurance can be given, however, that such proposed bill will not be enacted into law or that future legislative or regulatory actions will not occur, which actions may adversely affect the ability of the Authority to establish the rates and charges it believes are necessary to generate sufficient Net Revenues to pay debt service on the 2008 Senior Bonds. See *Risk Factors and Investment Considerations*.

The Authority's covenants under the Trust Agreement with respect to rates and charges for water and wastewater services are summarized in "Rate Covenant" under *Security for the Bonds*.

In the last quarter of calendar year 2005, the Authority adopted Resolution No. 2167 (as amended, "Resolution 2167") which implemented a two-stage, 128% overall increase in rates in October 2005 and July 2006, froze rates through the end of fiscal year 2009 (June 30, 2009) and set forth the conditions that needed to be met in order to adjust rates upward (without going through the public hearing procedures of Act No. 21) after the end of the rate freeze period. Resolution 2167 sets fiscal year 2007 as the base year against which changes in the Authority's operating margin are calculated, and should the Authority's operating margin fall below the margin for fiscal year 2007, the Authority will be permitted to adjust rates upward after June 30, 2009 as described in and subject to the annual and cumulative rate adjustment caps stated in the next paragraph. Resolution 2167 does not prevent the Authority from raising rates currently should it need to do so in order to meet the rate covenant in the Trust Agreement, but any such rate increases would have to be implemented in compliance with Act No. 21.

The base year (2007) calculation of operating margin takes the total of operating expenses and debt service (including reserves and Commonwealth Guaranteed Indebtedness and Commonwealth Supported Obligations) and divides that total by total revenues (all calculated in a manner consistent with the way those terms are used in the Trust Agreement). The Authority estimates that this ratio is .94. Beginning after fiscal year 2009, the Authority will calculate its operating margin using the same formula of total operating expenses and debt service (including necessary reserves) divided by total revenues as it used to calculate the base year operating margin. If the ratio in a post-2009 fiscal year is higher than the base year ratio (.94 as set forth above), meaning its operating margin has declined, the Authority will be allowed under Resolution 2167 to adjust its rates upward by the percentage increase that is obtained by dividing the post-2009 fiscal year ratio by the 2007 fiscal year ratio. Regardless of the percentage increase called for by the prior sentence, the Authority may not, without implementing the uniform public hearing and review procedures called for in Act No. 21, adjust rates upward in any post-2009 fiscal year by more than 4 ½% nor may its cumulative upward increase in rates from the aforesaid adjustment mechanism exceed 25%.

Authority Budgeting Process

The Authority's long-term budget projections, which are reviewed at least once a year, are the guide for each fiscal year's budget preparation. The Authority's annual detailed budgeting process begins in January/February when departments begin to prepare their budget requests (based on detailed budget guidelines and objectives outlined by the Office of Administration and Finance), to be submitted to the Administration and Finance Department for inclusion in the preliminary budget, which is presented to the Executive President in March/April. The Executive President reviews this preliminary budget and recommends appropriate adjustments and changes, and returns it to the departments for their review. Final recommendations (generally around April/May in each year) are incorporated into a proposed budget prepared by the Office of Administration and Finance that is further reviewed and approved by the Executive President. The Executive President presents the proposed budget to the Board for final approval (generally in May or June of each year). During June of each year the approved budget is uploaded to the Authority's financial system and each Department receives the final approved budget, which is used as a guideline and for monthly and annual financial analysis and measurement for the following fiscal year.

Rate Structure and Current Rates

Water. Rates are charged on a monthly basis and for metered customers consist of a base charge and a charge for each cubic meter of use in excess of 10 cubic meters. The amount of the base charge is fixed for each of four classes of service, distinguishing among service classes and diameter of the service line. For example, the monthly base charge to residential customers with ½-inch and ⅝-inch water service lines is $10.60, while the corresponding charge to commercial, industrial and government customers is $21.43. If the water service line diameter is ¾-inch, the corresponding charges are $16.18 and $31.73, respectively. Larger diameter service lines have correspondingly higher charges, and there are special charges for private hydrants and fire control sprinkler systems. For unmetered water service, charges are established by class of customer and type of use. For example, the average monthly charge for unmetered residential customers is $19.71.

The Authority also imposes a charge for new connections.

Wastewater. Wastewater service is billed together with water bills. The wastewater rate structure resembles the water rate structure, although the amounts are slightly lower. For example, the monthly base charge to metered residential customers with ½-inch and ⅝-inch water service is $9.11 while the corresponding charge to commercial, industrial and government customers is $17.67. The consumption component is calculated by reference to the customer's water use. Premises not discharging substantially the entire volume of their water use into the Wastewater System are allowed an adjustment in the imputed consumption charge, provided the customer installs metering equipment which allows computation of actual discharge to the Wastewater System. Customers with private water supply must also provide the necessary installations to measure the amount of wastewater discharges.

Wastes containing biological oxygen demand and total suspended solids concentrations in excess of 250 mg/l are subject to additional charges set forth in the Authority's regulations. Wastes containing pollutants in excess of local limits established in the Authority's regulations may be subject to penalties and pretreatment requirements of the Authority.

Section 7 of the Consulting Engineer's Report sets forth the current water and wastewater rates, by type of customer and meter diameter.

Water and Wastewater Billings. The following table sets forth the annual gross water and wastewater billings of the Authority for each of the five fiscal years ended June 30, 2007 and for the period July 1 through October 31, 2007, after adjustments for incorrect billings, but prior to any reduction due to the amount of uncollectible accounts as is shown in the Authority's financial statements in *Appendix I*.

Gross Water and Wastewater Billings

Year	Residential	Commercial	Industrial	Governmental	Total
2003	$215,443,272	$51,332,868	$13,924,141	$56,041,940	$336,742,221
2004	219,423,108	59,476,562	15,081,909	52,522,823	346,504,402
2005	218,957,340	57,494,951	15,379,949	52,620,350	344,452,590
2006	342,770,276	84,989,337	19,123,247	68,539,159	515,422,019[1]
2007	532,029,230	132,353,256	32,087,675	109,521,002	805,991,163[2]
October 31, 2007 YTD[3]	172,599,098	44,945,238	11,413,987	36,552,617	265,510,940

1. Rate increase of 64% occurred in October 2005.
2. Rate increase of 64% (when compared to pre-October 2005 rates) occurred on July 1, 2006.
3. Unaudited.

Billings and Collections

The Authority maintains its books of account and prepares its financial statements under the accrual method of accounting, which recognizes revenues when billed and expenses when accrued. However, for Trust Agreement purposes, Revenues are recognized when collected and Current Expenses are recognized when accrued.

The Authority's policy is to treat accounts past due for sixty days or more as in arrears, and its collection policies for arrearages include account monitoring, contacting customers, and service termination. Service termination procedures must comply with the provisions of Act No. 33 of the Legislature of Puerto Rico, approved June 27, 1985, which require customer notification in advance of service termination and the availability of proceedings prior to termination for any delinquent customers seeking to question the Authority bills. In the opinion of the Authority, these procedures, while adding to the complexity of using service terminations to induce and enforce collections, have not had a materially adverse effect on the ability of the Authority to collect its overdue accounts. The Authority has also begun to implement measures (described in Section 4 of the Consulting Engineer's Report in *Appendix II*) to reduce thefts of service and their impact on collections.

The Authority's rate of collections (collections received divided by amounts billed for the prior month) has averaged 93% since the first rate increase on October 2005 through October 2007, the collections rate from government accounts is 85% about 10% lower on average than for all other accounts (95%).

The Authority's accounts receivable have increased especially since the recent two-stage rate increase. During fiscal year 2005, the Authority's net receivables were $50.6 million, and they have increased to $189.6 million at June 30, 2007 (of which $47.5 million represented government accounts). The reason for the increased level of net receivables stems from the economic slowdown that Puerto Rico has experienced since 2006 along with the continuing effects of the government's budgetary difficulties, as well as customer reaction to the recent rate increase. As of October 31, 2007, the amount of net receivables has declined to $182.3 million (of which $59.3 million represented government accounts). The Authority received $9.1 million in December 2007 from the Treasury of Puerto Rico in payment for some of the receivables on the government accounts.

ENVIRONMENTAL MATTERS

Congress has provided that many federal environmental protection statutes, including the Clean Water Act and the Safe Drinking Water Act, have the same application in Puerto Rico as in the fifty states. Also, like legislatures of most states, the Legislature of Puerto Rico has enacted local environmental protection laws. These federal and Commonwealth environmental laws and regulations have important effects on the operations of the Systems. Some of the key areas covered by these regulations include: the quality and safety of drinking water; standards and limitations on water and air pollutants released into the environment; availability of water as a resource; handling and disposal of solid waste and wastewater; and health and safety standards for personnel. Compliance with these regulations in the ordinary course of operations requires significant operational and capital expenditures. Failure to comply with these regulations could have material adverse effects including the imposition of civil or criminal liability or fines by regulatory agencies or liability to private parties. See "Regulatory Compliance – 2006 Drinking Water Settlement Agreement" and "— PRASA Clean Water Act Litigation" below.

Water System Regulation

The Safe Drinking Water Act, enacted in 1974 and significantly amended in 1986 and 1996 (the "SDWA"), requires EPA to establish national drinking water standards and maximum levels for contaminants. These regulatory standards generally require treatment procedures and techniques by water supply systems so that drinking water will be free from bacteriological and chemical contaminants. States and the Commonwealth assist in the SDWA enforcement process. In Puerto Rico, enforcement responsibility for SDWA regulations developed by EPA is delegated to DOH.

Amendments to the SDWA in 1986 enhanced the public health protection mandated by the SDWA by imposing additional treatment requirements for surface and subsurface water sources, including criteria, procedures and timetables for state determinations of whether filtration measures are required, maximum permissible levels of coliform bacteria occurrence in distribution systems, and the testing and control of lead and copper in water at the customers' taps.

When the SDWA was amended and reauthorized in 1996, the water quality standard setting process was revised, a revolving loan fund for drinking water projects was established, water suppliers were required to issue consumer confidence reports, and a timetable was established for further regulation of microbial pathogens and potentially harmful disinfection by-products in drinking water. As part of such further regulation, the first set of rules, the Interim Enhanced Surface Water Treatment Rule ("ESWTR") and Stage 1 Disinfectants and Disinfection By-products Rule ("DBPR") were issued in December 1998, and effective in November 2001. These rules specify further treatment requirements for filtered systems to protect against pathogens and revise the maximum contaminant levels for potentially harmful disinfection by-products.

Lead Rule. Under the Lead and Copper Rule (the "Lead Rule"), water suppliers must conduct sampling and testing programs, identify and implement optimal corrosion control treatment, and provide information to the public on ways to further reduce risk of lead exposure. The presence of lead results from corrosion of certain plumbing materials used in the Authority's and/or in household plumbing's water system fixtures. The Authority treats its source water to reduce the corrosivity of the water so that lead concentrations at consumers' taps are reduced.

Pursuant to the Lead Rule, the Authority is required to conduct sampling to detect the presence of lead in its customers' tap water. Since 2000, samples collected from the Water System have at times exceeded the trigger levels set by the Lead Rule beyond which remedial action by the Authority is required to begin. These required remedial actions include conducting a public education program and the implementation of a corrosion service replacement program in affected communities where applicable levels were exceeded. These programs are underway for those facilities that have exceeded the trigger levels of the Lead Rule.

For water treatment plant operation the Authority has also received EPA administrative orders under the Clean Water Act (referred to below) requiring that the Authority cease noncompliant discharges from water treatment plants into streams and other bodies of water. Approximately 10 water treatment plant sludge handling and disposal projects addressing this problem are included as part of the Water System CIP for the next 5 years.

Annual System Report. The SDWA requires that all water systems publish an annual drinking water quality report to be distributed to system customers. The report, called a Consumer Confidence Report, is required to contain monitoring results of all detected contaminants that are regulated by EPA. The regulations governing this provision of the SDWA were promulgated in August 1998. The report has been published annually since 1998 by the Authority and is available (in Spanish) online at the Authority's website www.acueductospr.com.

Security and Bioterrorism. The Public Health Security and Bioterrorism Response Act of 2002 mandates the preparation of a Vulnerability Assessment and Emergency Response Plan by each public drinking water supplier. The Authority's Vulnerability Assessment was conducted in various stages depending on the population served in each area by the Water System. During 2003 and 2004, EPA received the Authority's Vulnerability Assessments for each of the stages. The Authority has been and will continue developing and designing water system improvements to mitigate, prevent, detect and respond to disruptive acts or terrorist activities based upon the findings of the Vulnerability Assessment and Emergency Response Plan.

The Emergency Response Plan was also prepared in various stages depending on the population served in each area by the Water System. The Authority completed and submitted to EPA certificates of completion for each of the stages during 2003 and 2004. The Emergency Response Plan identifies the actions to be taken in response to major or catastrophic events and terrorist attacks on the Authority's Water System.

Recent Drinking Water Regulations. In January 2006, EPA published two drinking water supply regulations, developed pursuant to the SDWA: the Long Term 2 Enhanced Surface Water Treatment Rule ("LT2") and the Stage 2 Disinfection/Disinfectant By-Products Rule ("DBP2"). Compliance with these new regulations, which phase in starting in 2012, may require additional Authority capital expenses, not all of which are included in the CIP.

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 in or from water supply systems. The LT2 Rule also mandates that certain uncovered finished water storage facilities be covered or that water from such facilities be filtered. The Authority is in the first phase of evaluating the requirements that apply under the LT2 Rule according to the water supply and characterization of its systems. The Authority is currently undertaking a sampling plan that will provide the necessary data to conduct this evaluation, but in the Consulting Engineer's Report, based on preliminary sampling data, slightly over one-third of the Authority's water treatment plants have had turbidity violations and are likely to require future capital improvements in order to remove the microorganisms required to achieve compliance with LT2. See Section 6 of the Consulting Engineer's Report in *Appendix II*.

The DBP2 Rule requires reduction of disinfection byproducts, which are chemical compounds formed when disinfectants such as chlorine are added to drinking water. Based on preliminary assessments, the Authority believes that the mandated level of disinfection byproducts set forth by DBP2 may be exceeded in certain parts of the Water System. The Authority prepared and submitted the monitoring plan to EPA, as required by the DBP2 regulation. The Consulting Engineer's Report notes that slightly over one-third of the Authority's local water systems contain disinfection byproducts at levels that will violate DBP2, requiring the Authority to improve management of these systems, change the point of disinfectant addition, use different disinfectants or change the disinfectant removal process. See Section 6 of the Consulting Engineer's Report in *Appendix II*.

On November 8, 2006, EPA published the Ground Water Rule ("GWR"). The purpose of GWR is to provide for increased protection against microbial pathogens in public water systems that use ground water sources, particularly those systems that are susceptible to fecal contamination. It establishes a risk-targeted approach of ground water surveys and source water monitoring. GWR requires ground water systems whose surveys and monitoring indicate a risk of fecal contamination to take corrective action to reduce exposure to microbial pathogens. The compliance date for completing actions (triggered monitoring and compliance monitoring) required by the GWR is December 1, 2009. Currently, the Authority is in the process of evaluating the water facilities to which the GWR will apply.

Wastewater System Regulation

The Clean Water Act. The Wastewater System is also subject to extensive environmental regulation, principally under the federal Water Pollution Control Act enacted in 1956, as amended by the federal Water Pollution Control Act Amendments of 1972, the Clean Water Act of 1977, and the Water Quality Act of 1987, as amended (collectively, the "Clean Water Act"). The Clean Water Act prohibits wastewater treatment plant discharges of pollutants into waters unless such discharges are in compliance with the terms and conditions of the applicable federal permit. EPA has the responsibility for implementing and enforcing Clean Water Act requirements in Puerto Rico. However, EPA and EQB have signed a memorandum of agreement under which EPA delegates to EQB some of the enforcement powers under the Clean Water Act (but EPA retains the authority to reclaim jurisdiction over such enforcement, on a case by case basis).

Under the Clean Water Act, each of the Authority's wastewater treatment plants that discharge into nearby bodies of water must have a National Pollutant Discharge Elimination System ("NPDES") permit issued by EPA, containing the limits on the pollutants discharged in plant effluent. Discharge limits are established by federal law and regulation and by water quality standards, which in the Commonwealth's case are established by EQB. NPDES permits also contain operating and maintenance requirements for wastewater facilities. Agreements entered into by

the Authority as a condition of receiving federal construction grant assistance under the Clean Water Act also impose requirements on many of the Authority's wastewater facilities. In addition, the Clean Water Act requires the Authority to administer an industrial wastewater pretreatment program applicable to many industrial users of its Wastewater System. The Authority administers an EPA-approved pretreatment program.

The rehabilitation, improvement and expansion of the Wastewater System are required in significant respects by the Clean Water Act. In general, the CIP contains projects including plant upgrades, capacity expansion and new plant construction intended to achieve compliance with "secondary treatment" effluent standards at all of its plants except for plants for which applications for marine (ocean) discharge waivers from secondary treatment limits have been submitted pursuant to Section 301(h) of the Clean Water Act. Currently, the Authority's six primary treatment plants have been granted such waivers or have waiver requests outstanding. The Authority has initiated a program of extensive interaction with EPA, among other regulatory agencies, to keep it abreast of possible legislative or regulatory changes that might affect its treatment plant operations, including changes that may influence the granting of such secondary treatment waivers. In 2000, the Authority signed a memorandum of agreement with EPA in which the parties agreed that notwithstanding the secondary treatment (301(h)) waivers at these six plants, the Authority and EPA would work cooperatively to achieve voluntary plant upgrades to full secondary treatment over a 20-year period and to secure the necessary capital funding to support these upgrades in the form of federal grants or other means of federal financial assistance (coupled with the required "matching share" of Authority funding (whether through Commonwealth appropriations or otherwise)). The failure by the Authority to comply fully with the existing 301(h) secondary treatment waivers applicable to these plants would entitle EPA to issue and require the Authority to comply with secondary treatment orders for these plants with the concomitant obligation on the Authority to incur the needed capital and operational expenditures to upgrade them. At the time of execution of the memorandum of agreement, the parties estimated that the capital costs involved in those upgrades exceeded $500 million with over $600 million in incremental related operational costs.

Further Clean Water Act Considerations. Statutory and regulatory evolution of Clean Water Act requirements impose continuing environmental planning and compliance requirements on the Authority in addition to compliance with the current terms of the 2006 EPA Consent Decree. These include, but are not limited to, the imposition of more stringent monitoring limits for parameters such as fecal coliform and phosphorus and the inclusion of additional monitoring parameters such as enterococcus. Compliance with future regulatory requirements will almost certainly result in the Authority having to make capital and operating expenditures that are not reflected in the CIP and the Authority's financial projections. It is not possible for the Authority to determine at this point the magnitude of such expenditures, but it is possible that it may be significant.

Regulatory Compliance

PRASA Clean Water Act Litigation. In the past, many wastewater plants were unable to meet the deadlines of the Clean Water Act for attaining improved wastewater treatment quality. Since 1978, the Authority has been the object of numerous notices of violations to environmental laws by the EPA. EPA has filed many administrative orders against the Authority for violations to the Authority's NPDES permits. Under delegated authority from EPA, DOH has filed many administrative orders against the Authority for violations to the requirements of the Safe Drinking Water Act. EPA and DOH have also filed enforcement actions against the Authority in the U.S. District Court for the District of Puerto Rico and the equivalent Commonwealth court, respectively, seeking compliance by the Authority with the provisions of environmental laws and the imposition of civil and criminal penalties.

EPA's litigation against the Authority spans several decades resulting in various "consent decrees", three of which are still applicable to the Authority. Under these decrees (collectively, "PRASA II through IV") the Authority agreed to comply with federal mandates for most, if not all, of its water (sludge disposal) and wastewater plants by attempting to meet schedules for numerous and extensive plant capital and operating and maintenance improvements, and was subject to compliance oversight from a court-appointed monitor for a period of time. PRASA II through IV contain stipulated penalties for violations of their requirements. In addition, the Authority has entered into settlement agreements with DOH pertaining to violations to the Safe Drinking Water Act (the "Settlement Agreements"). The Settlement Agreements provide for remedial and compliance actions by the Authority in accordance with agreed-upon schedules and for the payment of stipulated penalties for non-compliance. Although the Authority was able to comply with some of the provisions of the consent decrees, the Settlement Agreements and other regulatory requirements, it failed to satisfy other requirements and meet certain deadlines.

The Authority's failure to perform fully its obligations under PRASA II through IV and the Settlement Agreements has resulted in it being subject to the payment of significant stipulated penalties. From the commencement of the EPA litigation against the Authority in 1978 through May 2006, the Authority has paid substantial (multi-million dollars in) fines and penalties for non-compliance to EPA and the Commonwealth and was required to spend and has spent hundreds of millions of dollars on capital improvements to the Systems in an effort to bring the Authority's Systems into substantial compliance with the various regulatory regimes. A description of PRASA II through IV is included in Section 6 of the Consulting Engineer's Report in *Appendix II*.

Although the Authority is committed to bringing the Systems into compliance with applicable law, it is presently unable to comply fully with the requirements of PRASA II through IV and the Settlement Agreements and expects that it will have to continue to pay stipulated penalties and to make additional capital expenditures (some not included in the current CIP) in the future. To prepare for this potential liability, the Authority has determined the average exposure for payment of stipulated penalties and non-compliance with PRASA II through IV and the Settlement Agreements and has budgeted amounts that it believes should be sufficient to pay the stipulated penalties at current levels of non-compliance. In addition, the Authority's CIP is structured to modernize and help bring the Systems into compliance with applicable environmental laws. See *Capital Improvement Program*. No assurance can be given, however, that the amounts budgeted for payment of stipulated penalties will be in all cases sufficient to cover potential civil, administrative or criminal liabilities or that the CIP will result in regulatory compliance. The Authority expects, however, to be able to comply with PRASA II through IV and the Settlement Agreements in the near future.

In 2004, EPA and the Department of Justice convened a grand jury seeking grounds to indict the Authority for criminal violations of the Clean Water Act. At the same time, EPA and the Authority began negotiations to come to an agreement that would establish an achievable and realistic compliance program for the Authority regarding plant operations under the Clean Water Act. In June 2006, the grand jury indicted the Authority, charging 15 felony counts of violating the Clean Water Act through the illegal discharge of pollutants from nine sanitary wastewater treatment plants and sludge treatment systems for five drinking water treatment plants. Under a guilty plea agreement, the Authority was placed on probation for five years, from April 19, 2007, and must pay a criminal fine of $9 million to the federal government, in scheduled, equal installments over this five year period. Until the criminal fine is paid in full by the Authority, all of the Authority's real property is subject to a statutory lien held by the federal government. If the Authority does not make the required penalty payments, EPA has the right to foreclose on so much of the Authority's real property as may be needed to satisfy this monetary obligation. On June 22, 2006, EPA and the Authority filed with the federal court in Puerto Rico a comprehensive and all inclusive consent decree, the 2006 EPA Consent Decree, which is summarized below. The 2006 EPA Consent Decree was approved on January 10, 2007, and compliance with its terms by the Authority, in addition to those required by the criminal indictment, is required for the Authority not to violate the terms of its probation. The Authority is working to meet all schedules and requirements in the 2006 EPA Consent Decree and has met all deadlines to date. Although the entering of the 2006 EPA Consent Decree will not automatically dismiss or close PRASA II through IV, the 2006 EPA Consent Decree assumes jurisdiction over all wastewater treatment plant and NPDES permit issues and closes a related prior consent decree dating to 1978 (closure of some or all of PRASA II through IV will depend on negotiations already started with EPA over the sludge treatment systems and other subject matters).

The 2006 EPA Consent Decree requires the Authority to undertake extensive remedial and capacity expansion measures over the next 15 to 20 years at all of its wastewater treatment plants ("WWTPs") and sanitary sewer and collection systems (obligating the Authority to complete approximately 145 short-, mid-, and long-term capital projects, which will include installing dechlorination equipment, installing flow proportional chlorination equipment, repairing and replacing equipment, and implementing a chemical treatment program for phosphorous removal, among other things) as well as a $3 million supplemental environmental project ("SEP") (designed to provide sewer service to an unsewered community located at the La Plata Watershed and approved by EPA and for which the Authority has made the first two required escrow deposits). The scope of work that the Authority will perform for the SEP will be submitted on schedule. To achieve compliance with NPDES effluent limits, the Authority is obligated to adopt and implement integrated preventive maintenance and implement spill response and cleanup programs. EPA oversight is augmented by the Authority's triannual submission of progress reports and progress meetings with EPA. Non-compliance will violate the terms of its probation, result in possible additional criminal sanctions, including fines and injunctive relief or additional remedial actions, and in all likelihood subject the Authority to stipulated penalties. Nevertheless, the 2006 EPA Consent Decree also provides the Authority the

opportunity to recover monies paid as stipulated penalties (some of which are deposited in an escrow account) if it complies with and/or completes required remedial measures and CIP projects before the applicable completion deadlines. A summary of the 2006 EPA Consent Decree is contained in Section 6 of the Consulting Engineer's Report in *Appendix II*.

2006 Drinking Water Settlement Agreement. The Water System was subject to approximately 180 administrative orders arising from enforcement actions by DOH (EPA's local delegate) against the Authority for violations of the federal Safe Drinking Water Act and to three administrative consent agreements with DOH addressing monitoring and turbidity violations. In December 2006, the Authority entered into a comprehensive settlement agreement with DOH to resolve litigation brought in February 2006 against the Authority seeking enforcement of the administrative orders of DOH under the Safe Water Drinking Act and the violations by the Authority of two of the prior consent agreements (the "2006 Drinking Water Settlement Agreement"). The 2006 Drinking Water Settlement Agreement was filed on December 15, 2006 with the Court of First Instance, Superior Court of San Juan, was approved tentatively by the presiding judge on March 15, 2007 and is now in effect. EPA has since submitted comments to DOH on the 2006 Drinking Water Settlement Agreement, and DOH and PRASA are revising the 2006 Drinking Water Settlement Agreement to address EPA's comments. The 2006 Drinking Water Settlement Agreement will replace and supersede all prior DOH administrative orders and consent agreements. It obligates the Authority to carry out approximately 210 projects over the next 15 years along with many other shorter-term remedial actions that will involve both capital expenditures and expenditures for operating, maintenance and training programs and evaluations and studies centered on ensuring that the quality of drinking water provided by the Authority to its customers meets all federal and Commonwealth regulatory standards. In addition, the Authority is required to pay a $1 million civil penalty to the Commonwealth and establish an escrow account for certain accumulated stipulated penalties that the Authority may incur for violations of the 2006 Drinking Water Settlement Agreement because projects are implemented late or water quality drops below required levels during the term of the 2006 Drinking Water Settlement Agreement. The account will be used to finance compliance projects that may arise under the 2006 Drinking Water Settlement Agreement and under local and federal laws applicable to Water System. The civil penalty was paid on April 11, 2007, and the escrow account has been established. A summary of the 2006 Drinking Water Settlement Agreement is contained in Section 6 of the Consulting Engineer's Report in *Appendix II*.

CIP Impact. As set forth in more detail under *Capital Improvement Program*, the Authority estimates that the capital cost of complying with the terms of the 2006 EPA Consent Decree will be approximately $461 million through June 30, 2012 based on project cost estimates included in the CIP. The Consulting Engineer has reviewed the 2006 EPA Consent Decree and the Authority's actions to date and its expected actions thereunder and has concluded (in Section 6 of said Report in *Appendix II*) that the CIP adequately addresses the requirements of the 2006 EPA Consent Decree.

The Authority estimates that the capital cost of complying with the terms of the 2006 Drinking Water Settlement Agreement will be approximately $360 million through June 30, 2012 based on project cost estimates included in the CIP. The Consulting Engineer has reviewed the 2006 Drinking Water Settlement Agreement and the Authority's actions to date and its expected actions thereunder and has concluded (in Section 6 of said Report in *Appendix II*) that the CIP adequately addresses the requirements of the 2006 Drinking Water Settlement Agreement.

In addition, as set forth in Section 8 of the Consulting Engineer's Report in *Appendix II*, to which reference is made for a discussion of the assumptions and limitations that apply to this conclusion, the Consulting Engineer has concluded that the full impact of future regulations on the water treatment and supply system are not known at this time. In some cases, future regulations are expected to require minor process changes (such as moving the point of chlorination within a facility) and in other cases major capital improvements, such as construction of new treatment processes. Although, the existing CIP does not include projects specifically to address future regulations, the Authority is making allowances in its new designs to improve capabilities to meet certain future regulations. As the effects of future regulations become more defined, the Authority may need to modify its CIP to accommodate resulting needs.

Other Regulatory and Compliance Matters

In common with most water and wastewater operating agencies, the Authority's operations and improvements for its Systems are subject to numerous environmental regulatory requirements in addition to the SDWA and the Clean Water Act. These include environmental impact assessment requirements under the National Environmental Policy Act, air quality protection requirements, permitting requirements under various federal, Commonwealth and local laws for construction projects, various requirements affecting the Authority's properties and operations under the Resource Conservation and Recovery Act of 1976 and the Comprehensive Environmental Response, Compensation and Liabilities Act of 1980, including the Superfund Amendments and Reauthorization Act of 1986, as amended. Statutes and regulations of the Commonwealth cover matters such as water quality standards, control of solid waste and air pollution control requirements. The Authority currently has no litigation with respect to any of these regulatory requirements. In addition, plans and specifications for many projects are subject to review and approval by Commonwealth agencies and EPA. Permitting and environmental compliance procedures for many of the Authority's construction projects are complex and may in some cases lead to unforeseeable delay or expense. These complexities are faced by many, if not most, public sector utilities, and management of the Authority does not anticipate that they will result in substantial delays or cost increases.

CAPITAL IMPROVEMENT PROGRAM

General

The Authority has initiated a comprehensive CIP for the five-year period ending June 30, 2012. The purpose of the CIP is to modernize the Systems, protect public health and safeguard environmental quality as mandated by the Act, permit continued economic development and bring the Systems into compliance with all material regulatory requirements, including the 2006 EPA Consent Decree and the 2006 Drinking Water Settlement Agreement. As set forth in the Consulting Engineer's Report, the Authority has also engaged the services of recognized program management consultants in order to assist it in planning, designing and managing the CIP. See Section 2 of the Consulting Engineer's Report in *Appendix II*.

The CIP for the five-year period ending June 30, 2012 totals $1.98 billion, in current dollars, and includes annual expenditures for projects under construction as of June 30, 2007 and new projects scheduled to begin in each of the years covered by the CIP. As shown in the following table, the CIP consists of $730 million for improvements to the Water System and $677 million for improvements to the Wastewater System. The remainder of the CIP is for program areas of preventive maintenance, planning, renovation and replacement, meter replacement and upgrades, buildings, technological improvements and vehicles. Of the total projected to be spent during the five-year period, $979 million is required for projects specified by the terms of the 2006 EPA Consent Decree, the 2006 Drinking Water Settlement Agreement and other regulatory requirements, consisting of $90 million for upgrading existing wastewater treatment plants, $179 million for added wastewater treatment capacity, $122 million for improvements to the wastewater conveyance system, $228 million for other related projects and $360 million for Water System capital projects scheduled for completion in accordance with the terms of the 2006 Drinking Water Settlement Agreement. The Authority expects that additional substantial expenditures will be necessary after fiscal 2012 in order to comply with the long-term aspects of the 2006 EPA Consent Decree. See "Regulatory Compliance – 2006 Drinking Water Settlement Agreement" and "— PRASA Clean Water Act Litigation" under *Environmental Matters*.

The CIP is based on project-by-project cost estimates and includes allowances for indirect costs, inflation and contingencies. The estimates of annual expenditures for individual projects are based on construction industry averages and the Authority's experience with similar projects. Individual projects and their cost estimates are subject to periodic revision to reflect updated information regarding design, site considerations, value engineering, changing regulatory requirements, and overall program development. The Authority reviews and revises its CIP to reflect current data and requirements at least annually. As mentioned in *Authority Consultants* above, the Authority uses the services of recognized engineering firms and program management consultants to assist it with the planning, design and management of its CIP.

Summary of CIP

The following table summarizes the current five-year CIP by year and by major expenditure category followed by a table breaking down the CIP into mandatory expenditures and other categories (all amounts in millions).

Category Type	Sub-Category	Fiscal Year Ending June 30, 2008	2009	2010	2011	2012	Total 2008-2012
Water System	Water Supply	$ 28.3	$ 20.6	$ 23.2	$ 29.0	$ 46.9	$ 148.0
	Water Distribution	66.7	55.4	49.0	39.3	25.9	236.2
	WTP Capacity Increase	8.7	7.2	6.3	1.9	0.8	24.9
	WTP Improvements	46.9	30.9	18.5	24.3	31.9	152.5
	WTP New	70.9	41.0	23.7	15.4	7.7	158.7
	Water Pump Stations	1.5	2.6	2.2	0.7	0.6	7.6
	Water Treatment Plant STS	0.4	0.4	0.1	0.4	0.7	2.0
	Subtotal	$ 223.5	$ 158.0	$ 122.9	$ 111.0	$ 114.5	$ 729.9
Wastewater System	Wastewater Collection	$ 74.0	$ 86.3	$ 94.3	$ 55.9	$ 34.9	$ 345.5
	WWTP Capacity Increase	52.4	49.5	41.2	19.1	18.1	180.4
	WWTP Improvements	22.2	27.9	19.0	14.4	9.4	92.9
	WWTP New	1.8	0.1	0.0	0.0	2.6	4.5
	Wastewater Pump Stations	14.8	12.9	14.4	9.8	1.9	53.9
	Subtotal	$ 165.3	$ 176.7	$ 169.0	$ 99.3	$ 66.9	$ 677.2
Preventive Maintenance	Water & Wastewater	$ 31.2	$ 37.8	$ 27.0	$ 10.6	$ 0.6	$ 107.2
Planning	Water & Wastewater	4.8	0.6	0.0	0.0	0.0	5.4
Renovation & Replacement	Water & Wastewater	42.5	85.9	65.2	63.2	63.6	320.3
Meters	Water Meters	2.4	7.8	8.8	9.0	11.4	39.4
Buildings	Buildings	3.7	3.5	4.7	3.4	5.6	21.0
Fleet	Fleet	3.3	5.1	5.5	5.6	7.3	26.9
Urgent Projects	Water & Wastewater	5.3	8.8	1.4	0.0	0.0	15.5
Technology	Water & Wastewater	7.5	5.8	10.5	12.8	4.5	41.1
	Subtotal	$ 100.8	$ 155.3	$ 123.0	$ 104.7	$ 92.9	$ 576.7
Total		**$ 489.6**	**$ 490.0**	**$ 415.0**	**$ 314.9**	**$ 274.3**	**$ 1,983.9**

*Numbers may vary due to rounding.

**Takes into account annual cost escalation of 3.8% for contracts whose performance has not yet begun, covering approximately 5.1% of total proposed CIP expenditures.

A fuller description of the CIP is set forth in Section 6 of the Consulting Engineer's Report in *Appendix II*.

The annual level of expenditures projected for the CIP averages, over the five-year period, approximately $396.8 million.

Project Category	Fiscal Year Ending June 30, 2008	2009	2010	2011	2012	Total 2008-2012
Mandatory (Consent Decrees, Administrative Orders, Agreements)	$ 278.1	$ 243.2	$ 197.6	$ 141.4	$ 118.4	$ 978.7
Non-Mandatory Compliance	80.1	80.9	75.8	55.1	30.5	322.5
Non-Mandatory Quality, Efficiency, Reliability & Redundancy	88.9	142.8	124.2	108.0	106.6	570.5
Non-Mandatory Growth	38.6	19.5	12.5	6.9	13.2	90.7
Non-Mandatory Other	4.0	3.6	4.8	3.5	5.7	21.5
Total	**$ 489.6**	**$ 490.0**	**$ 415.0**	**$ 314.9**	**$ 274.3**	**$ 1,983.9**

*Numbers may not add due to rounding

The Consulting Engineer has reviewed the Authority's CIP and has concluded that it addresses the general needs of the Systems, properly prioritizes projects and complies with the commitments the Authority has made to EPA and DOH as set forth in the 2006 EPA Consent Decree and the 2006 Drinking Water Settlement Agreement. The Authority will, however, have to perform additional assessments and make additional capital expenditures (not currently included in the CIP) and operational changes to address the impact on the Systems of environmental regulations whose future effective dates occur during the CIP period. The Authority's partnering and open lines of communication with its federal and Commonwealth regulators will reduce any unexpected substantial increases in CIP expenditures. A fuller description of the CIP and the Consulting Engineer's conclusions with respect thereto are set forth in Section 6 of the Consulting Engineer's Report in *Appendix II*.

The annual level of expenditures projected for the CIP averages, over the five-year period, approximately $396.0 million.

Water System CIP

The Wastewater System CIP addresses capacity expansion, rehabilitation and improvement of facilities, decommissioning of outmoded facilities and compliance with environmental requirements, particularly the 2006 Drinking Water Settlement Agreement.

Major components of the Water System CIP include the Río Blanco Offstream Reservoir and the Valenciano Onstream Reservoir designed to assure adequate raw water supplies throughout the Water System.

The Río Blanco Offstream Reservoir is being constructed to provide raw water to the existing Río Blanco Water Treatment Plant and to increase its firm yield. The construction of this project will be partially financed ($31.3 million) with funds provided by the Rural Utilities Service Program of the United States Department of Agriculture, Rural Development Administration. The total investment in the project is estimated at $139.2 million when completed later in 2008. The Río Blanco Offstream Reservoir will serve approximately 128,247 customers in the municipalities of Naguabo, Humacao, Las Piedras, Vieques and Culebra.

The Valenciano Onstream Reservoir project will promote the economic development of the East Region, serving approximately 218,928 customers in the municipalities of Juncos, Gurabo, Las Piedras, Humacao, San Lorenzo and Caguas. The 28 mgd project will also guarantee the water resources to cover present and future water needs in the benefited municipalities and assure reliability with current and prospective water regulations. The Valenciano Onstream Reservoir project consists of an on-stream reservoir and treatment plant. The total investment in the project is estimated at $105.1 million and is expected to be completed in 2012.

Approximately $9 million of the Water System CIP will be expended on projects as part of an island-wide water supply implementation plan developed through the year 2025 (the "Master Plan") prepared by the engineering firm of Ondeo at the request of the Authority and completed in December 2003. The Authority estimates total capital expenditures for these projects, through 2025, at $310 million.

The Master Plan contains population and water growth forecasts, maps of the water supply systems, evaluations of Water System facilities and safe yield analyses, identification of problem areas and potential water resource conflicts, and a recommended timetable and estimated cost projections for improvements and additions to supply facilities.

The Master Plan recommends numerous major capital projects to be built over its approximately twenty-five year period in the form of reservoir diversions, new reservoirs, aqueducts and filtration plants. Also recommended is the development of significant groundwater wellfields, if feasible.

Wastewater System CIP

The Wastewater System CIP addresses capacity expansion, rehabilitation and improvement of facilities, decommissioning of outmoded facilities and compliance with environmental requirements, particularly the 2006 EPA Consent Decree.

Major components of the current five-year Wastewater System CIP include: the rehabilitation and improvement of the Puerto Nuevo Wastewater Treatment Plant, the rehabilitation and upgrading of the Cayey Wastewater Treatment Plant and the expansion of the Caguas Wastewater Treatment Plant.

The rehabilitation and improvement of the Puerto Nuevo Wastewater Treatment Plant will provide the Metro Region with rehabilitated emergency generators and a sludge incinerator that will serve this and several nearby plants. The project will serve approximately 203,000 customers in the Metro Region. The total investment in the project is estimated at $80.4 million, and the project is expected to be completed in 2009.

The rehabilitation and upgrading of the Cayey Wastewater Treatment Plant began in July 2006. The project will enable the El Torito Wastewater Treatment Plant and several pump stations currently providing sewer services to the municipalities of Cayey and Cidra to be shut down and will more than double treatment capacity to 9 mgd. The total investment in the project is estimated at $64.4 million, and the project is expected to be completed in 2008.

The expansion of the Caguas Wastewater Treatment Plan will permit the elimination of approximately 40 pump stations and the decommissioning of four small wastewater treatment plants. The project will increase treatment capacity from 12 mgd to 24 mgd. The total investment in the project is estimated at $37.8 million, and the project is expected to be completed in 2008.

Sources of Funds

Set forth below is a table showing the various sources which the Authority expects to use in financing the CIP (in thousands).

	Fiscal Year Ending June 30,				
	2008	**2009**	**2010**	**2011**	**2012**
USES OF FUNDS					
Repair & Replacement of Fixed Assets	$ 42,527	$ 85,864	$ 65,212	$ 63,179	$ 63,555
CIP Infrastructure Projects	404,410	360,230	304,799	205,816	163,873
Recoverable Expenses Capitalized to CIP	42,696	43,894	44,948	45,954	46,905
Total Projected Capital Expenses	**$ 489,633**	**$ 489,988**	**$ 414,959**	**$ 314,949**	**$ 274,334**
SOURCES OF FUNDS					
Surplus Cash Available for Capital Projects	5,829	3,357	3,995	1,552	7,588
Federal Funds – Federal Matching	25,305	25,305	9,434	-	-
Federal Funds – Rural Development Bonds	47,384	47,384	30,945	12,610	13,089
Federal Funds – State Revolving Funds Borrowings	67,846	67,846	68,640	44,995	46,705
PRIFA Contributions	88,356	-	-	-	-
Release of BAN Reserve	8,063	-	-	-	-
Interim Financings & Future Bond Proceeds	-	346,096	301,945	255,792	206,952
Carryover of BAN Proceeds to Future Years	108,608	-	-	-	-
Bond Proceeds	88,242	-	-	-	-
Draws on Existing GDB CIP Line of Credit	50,000	-	-	-	-
Total Sources	**$ 489,633**	**$ 489,988**	**$ 414,959**	**$ 314,949**	**$ 274,334**

(1) The table was prepared assuming the Authority will issue Additional Senior Bonds annually through June 30, 2012.
(2) These obligations are expected to evidence borrowings from the Revolving Funds. See "Revolving Funds" under *Debt* below.

DEBT

From the late 1940's until the early 1990's, the Authority's capital improvements were financed in large part by bonds issued by the Authority and secured by a pledge of its operating revenues remaining after payment of its current expenses and reserves therefor. The bonds were issued publicly and were augmented, in the case of financing for rural aqueduct projects on the island, by revenue bonds issued (on a parity as to their claim on net revenues to the publicly offered revenue bonds) to the Rural Utility Service (formerly Farmers Home Administration) of the United States Department of Agriculture ("RUS").

Beginning in the early 1990's as a result of a confluence of factors including, among others, an inability to control operating expenditures and a failure to raise rates for water and wastewater service, the Authority's Net

Revenues became insufficient to pay debt service on its revenue bonds. To provide funds adequate for the Authority's capital and operating needs, the Commonwealth gave substantial operating subsidies to the Authority and placed its full faith and credit guarantee on the Authority's 1995 Commonwealth Guaranteed Bonds (subsequently extended to the Guaranteed RUS Bonds in the late 1990s) upon passage of Act No. 45 of the Legislature of Puerto Rico, approved July 28, 1994, as amended. Under the Guaranteed Bond Resolution, the Authority is permitted to issue bonds and other obligations having a claim on its Net Revenues senior to the claim thereon of the Guaranteed Bonds. The Senior Bonds (including the 2008 Senior Bonds) and the Term Loan have such senior claims on the Authority's Net Revenues.

With the implementation of the rate increase during fiscal years 2006 and 2007, the creation of a new organizational and management structure, and the improved cooperation between the Authority and its labor unions, the financial condition of the Authority is expected to improve significantly from that which existed from the early 1990's until fiscal 2006 and which required substantial annual operating and capital subsidies from the Commonwealth. The Commonwealth has indicated that it no longer intends to provide these subsidies to the Authority.

The following table sets forth the debt of the Authority as of October 31, 2007, and as adjusted to give effect to the issuance of the 2008 Senior Bonds, the refunding of the 1995 Commonwealth Guaranteed Bonds (shown in the table below as the amount outstanding as of October 31, 2007 on the line "2008 Guaranteed Bonds"), the repayment of certain Guaranteed RUS Bonds and the incurrence of additional Revolving Funds loans. Following the table is a discussion of the material terms of certain debt instruments the Authority has incurred or expects to incur to finance the CIP. The Operating Reserve Fund Line of Credit will allow the Authority to draw up to $150 million for paying Current Expenses and other purposes set forth in the Trust Agreement, but currently has no drawn amount outstanding.

	October 31, 2007	As Adjusted
	(in thousands)	
Revenue Bonds		
Series A Bonds (Senior)	$ --	$ 1,316,204
Series B Bonds (Senior)	--	22,445
Guaranteed Obligations:		
1995 Guaranteed Bonds	262,825	--
2008 Guaranteed Bonds	--	284,755
Guaranteed RUS Bonds	246,314	244,355
Revolving Funds Loans	251,483	281,720
Superaqueduct Obligations	360,610	360,610
	$ 1,121,232	$ 2,510,089
Notes		
Term Loan (Senior Subordinate lien)	$ 250,000	$ 250,000
Bond Anticipation Notes	850,000	--
Lines of Credit	129,198	53,146
Operating Reserve Fund Line of Credit from Development Bank		--
Total Indebtedness payable	$ 2,350,430	$ 2,813,235

Commonwealth Guaranteed Indebtedness

Guaranteed RUS Bonds. Rural Utility Service assists in the financing of water and sewer facilities in rural areas of Puerto Rico by purchasing from the Authority bonds which bear interest from 4¼% to 5%.

The Commonwealth (i) pledged to reimburse the Authority for principal, interest and other financing charges with respect to an additional $33.7 million of bonds issued to RUS to finance rural aqueduct projects and (ii) agreed to guarantee the payment of debt service on $13.7 million of bonds issued to RUS to finance certain urban aqueduct projects.

As of October 31, 2007, $243,801,000 principal amount of such Guaranteed RUS Bonds was outstanding.

1995 Commonwealth Guaranteed Bonds. As of October 31, 2007, $262,825,000 principal amount of these bonds was outstanding. These Bonds were issued to refinance the Authority's outstanding revenue bonds in 1995 at a time when it was unable to pay debt service on its debt without substantial Commonwealth financial assistance, and will be refunded by the 2008 Commonwealth Guaranteed Bonds.

From their issuance until June 30, 2005, virtually all debt service on the Guaranteed Bonds was paid from Commonwealth General Fund contributions. The Authority's current plan of finance and projected operating results contemplate that the Authority will, from moneys on deposit in the Commonwealth Payments Fund under the Trust Agreement, make all payments on the Guaranteed Bonds, although these Bonds will remain unconditionally guaranteed by the full faith, credit and taxing power of the Commonwealth. See "Management's Discussion of Forecasted Operating Results" under *Financial Operations*.

Revolving Funds. Under its Enabling Act, PRIFA administers the financial matters of the Puerto Rico Water Pollution Control Revolving Fund (the "Pollution Control Revolving Fund") and the Puerto Rico Safe Drinking Water Revolving Fund (the "Drinking Water Revolving Fund," and together with the Pollution Control Revolving Fund, the "Revolving Funds") and receives capitalization grants from the federal government for uses permitted under Title VI of the Clean Water Act and Title I of the Drinking Water Act. Annually, and through its General Fund appropriations, the Commonwealth deposits a portion of its available revenues into the Revolving Funds to meet its responsibility for matching funds requirements under these federal laws (normally around 20% of the applicable federal capitalization grant). Moneys in the Revolving Funds are then loaned to the Authority on a revolving basis at below market interest rates (usually 2%) to finance certain of the Authority's ongoing capital projects (including a portion of the CIP). The Authority's obligations under such revolving loans are subordinate to the Senior Indebtedness and the Senior Subordinate Indebtedness. Most of the Authority's existing obligations to the Revolving Funds are guaranteed by the Commonwealth, and Act No. 386 of September 21, 2004 provides that Revolving Funds obligations incurred by the Authority on or before June 30, 2010 will be guaranteed by the Commonwealth.

Each Revolving Fund was created by Commonwealth legislation and is constituted separately and independently from the other Fund as well as any other funds or resources of the Commonwealth.

PRIFA provides administrative and managerial assistance to the Authority through the Revolving Funds.

As of October 31, 2007, $249,719,000 total principal amount of such Revolving Funds' loans was outstanding.

Future Guaranteed Obligations. Act No. 386 of September 21, 2004 authorizes the Authority to incur before July 1, 2010 Indebtedness that is guaranteed by the Commonwealth. Until June 30, 2010, any Authority bonds purchased by Rural Utilities Service and loans taken from the Revolving Funds will be so guaranteed and will be included as Commonwealth Guaranteed Indebtedness under the Trust Agreement. Thereafter, the Authority expects to treat any such bonds purchased by Rural Utilities Service as Senior Indebtedness and any loans taken from the Revolving Funds as Subordinate Indebtedness.

Commonwealth Supported Obligations

The outstanding Commonwealth Supported Obligations consist of notes of the Authority held by PFC, which notes secure the outstanding PFC Bonds and state that the Authority's obligation to make debt service payments thereunder are payable solely from appropriations to be made by the Commonwealth. Under an agreement reached with the Commonwealth in 2006, the Authority, subject to its having available Net Revenues, will make debt service payments on those notes in lieu of the Commonwealth making said appropriations, although the Commonwealth would once again be obligated to make such debt service appropriations should the Authority's Net Revenues be insufficient for such purpose.

The forecasted operating results prepared by the Authority and reviewed by the Consulting Engineer have taken the Authority's debt service obligations on these notes into account. As of October 31, 2007, $360,610,000 principal amount of such notes was outstanding.

Operating Reserve Fund Line of Credit

The Operating Reserve Fund Line of Credit referred to in the table above will be provided to the Authority by Development Bank and initially to have term of five years. Under this line, the Authority will be authorized to draw funds in situations and for the purposes set forth and described in the Trust Agreement. It is anticipated that the Authority will either provide a replacement facility or start making cash deposits to the Operating Reserve Fund beginning in fiscal year 2013 that will assure that the available balance is always equal to at least 90 days of the prior Fiscal Year's Current Expenses. See *Summary of the Trust Agreement* in *Appendix III*.

Term Loan

In September 2006, the Authority obtained the Term Loan from a consortium of commercial banks in Puerto Rico in the principal amount of $250 million (all of which was outstanding as of October 31, 2007) for the purpose of refinancing a line of credit with Development Bank that had been incurred to pay for working capital expenses. The Term Loan begins to amortize on September 1, 2008 on a quarterly basis, matures on September 1, 2011 (when approximately $242 million principal amount of the loan will be due) and bears interest at a floating rate based on changes in the London Interbank Offered Rate plus a fixed spread.

Bond Anticipation Notes

Lines of Credit – Development Bank. Development Bank has approved various lines of credit to the Authority to borrow up to $719,000,000 to finance a part of the CIP and for working capital, of which $135,637,324 has been advanced, and an additional $50 million is expected by the Authority to be advanced prior to the delivery of the Series A Bonds. The lines of credit expire at various dates through September 30, 2015 and the amounts borrowed thereunder will be paid from 2008 Senior Bond proceeds, with the exception of $59,585,324 that are expected to be paid from the proceeds of additional Guaranteed RUS Bonds. After the issuance of the 2008 Senior Bonds, the Authority expects to maintain with Development Bank a bond anticipation line of credit in the approximate amount of $190 million to provide interim financing for a portion of the Authority's CIP. The Authority currently expects to pay down any outstanding draws under this line with the proceeds of future Senior Bonds or from moneys in the Surplus Fund under the Trust Agreement and then re-borrow under this line to pay additional CIP costs until the next issuance of Bonds.

Bond Anticipation Notes – Citi. In late 2006 and early 2007, the Authority issued a net total of $850 million principal amount of notes that were purchased by Citigroup Global Markets Inc., the co-lead managing underwriter of the 2008 Senior Bonds, to refinance certain lines of credit that the Authority had opened in order to finance a portion of its ongoing CIP and for working capital purposes. These notes are secured by a senior claim on the Authority's Net Revenues and will be paid in full from 2008 Senior Bond proceeds.

ANNUAL DEBT SERVICE

Annual Debt Service for the Bonds in any Fiscal Year, as defined in the Trust Agreement, comprises the sum of principal, including Sinking Fund Requirement, and interest which is payable after July 1 during such Fiscal Year and on July 1 of the next Fiscal Year. The following table shows the estimated Annual Debt Service for the 2008 Senior Bonds and all other currently outstanding obligations (as of October 31, 2007) of the Authority payable from Net Revenues on a basis subordinate to the 2008 Senior Bonds. Such obligations are the Term Loan, all Commonwealth Guaranteed Indebtedness (the 2008 Commonwealth Guaranteed Bonds, the Guaranteed RUS Bonds and the Authority's obligations to the Revolving Funds) and all Commonwealth Supported Obligations (the Authority's notes held by PFC to secure the PFC bonds) and are referred to in the table and its footnotes as "Subordinate Obligations".

Fiscal Year Ending June 30	2008 Senior Bonds Principal	Interest	Total	Subordinate Obligations*	Grand Total
2008†		$ 35,345,549	$ 35,345,549	$ 117,994,280	$ 153,339,829
2009		36,873,403	36,873,403	95,949,364	132,822,767
2010		68,756,255	68,756,255	95,363,304	164,119,559
2011		68,756,255	68,756,255	95,800,392	164,556,647
2012	$ 12,290,000	78,309,724	90,599,724	80,339,126	170,938,850
2013	12,905,000	77,695,224	90,600,224	87,141,900	177,742,124
2014	13,550,000	77,049,974	90,599,974	87,894,826	178,494,800
2015	14,230,000	76,372,474	90,602,474	88,080,351	178,682,825
2016	14,940,000	75,660,974	90,600,974	87,702,265	178,303,239
2017	12,868,310	77,735,663	90,603,974	87,903,458	178,507,432
2018	13,655,664	76,947,297	90,602,961	86,057,943	176,660,904
2019	14,492,227	76,110,922	90,603,149	85,056,128	175,659,277
2020	15,378,000	75,222,861	90,600,861	84,533,719	175,134,581
2021	16,321,184	74,281,240	90,602,424	92,433,997	183,036,421
2022	17,321,779	73,281,770	90,603,549	93,071,962	183,675,510
2023	18,379,786	72,220,163	90,599,949	93,772,317	184,372,265
2024	19,507,506	71,094,831	90,602,336	97,634,819	188,237,155
2025	25,240,000	65,360,505	90,600,505	98,418,896	189,019,401
2026	26,505,000	64,098,505	90,603,505	98,441,227	189,044,732
2027	27,830,000	62,773,255	90,603,255	97,596,227	188,199,482
2028	29,220,000	61,381,755	90,601,755	98,490,830	189,092,585
2029	30,680,000	59,920,755	90,600,755	99,764,840	190,365,595
2030	32,520,000	58,079,955	90,599,955	101,156,866	191,756,821
2031	34,470,000	56,128,755	90,598,755	93,853,140	184,451,895
2032	36,540,000	54,060,555	90,600,555	68,173,556	158,774,111
2033	38,735,000	51,868,155	90,603,155	68,177,455	158,780,610
2034	41,055,000	49,544,055	90,599,055	68,176,449	158,775,504
2035	43,520,000	47,080,755	90,600,755	35,536,039	126,136,794
2036	46,130,000	44,469,555	90,599,555	34,536,189	125,135,744
2037	48,900,000	41,701,755	90,601,755	34,268,695	124,870,450
2038	51,840,000	38,767,755	90,607,755	9,944,946	100,552,701
2039	54,975,000	35,623,688	90,598,688	9,899,638	100,498,326
2040	58,275,000	32,325,188	90,600,188	8,394,359	98,994,546
2041	61,770,000	28,828,688	90,598,688	7,383,400	97,982,087
2042	65,480,000	25,122,488	90,602,488	6,565,578	97,168,065
2043	69,405,000	21,193,688	90,598,688	6,187,216	96,785,903
2044	73,570,000	17,029,388	90,599,388	4,348,197	94,947,585
2045	77,985,000	12,615,188	90,600,188	3,198,345	93,798,532
2046	81,980,000	8,618,456	90,598,456	2,020,725	92,619,181
2047	86,185,000	4,416,981	90,601,981	2,019,551	92,621,533

* Debt service payments on the Term Loan and on the Authority's obligations to the Revolving Funds have been computed in accordance with the definition of Annual Debt Service contained in the Trust Agreement, which definition allows the Authority (i) to make certain assumptions in respect of obligations on which the interest is based on a rate that is not constant and for which the Authority expects to repay principal from a source other than Revenues and (ii) to consider "bullet" maturities as if they were refinanced at defined imputed rates and with level annual debt service over a period of 30 years. See *Summary of the Trust Agreement* in *Appendix III*.

† The higher Annual Debt Service recorded in fiscal year 2008, as compared to fiscal year 2009, results from the Authority's deposit requirements relating to the PFC Bonds, because the Authority, in order to adjust its cash flow to allow it under the Trust Agreement to set aside in advance the needed amounts from Net Revenues to pay debt service as it comes due on these Bonds, is required to deposit into the Commonwealth Supported Obligations Account of the Commonwealth Payments Fund the amount of debt service on the PFC Bonds in advance of the fiscal year it is due, resulting in an extra payment of this debt from Net Revenues in fiscal year 2008. The interest amount for the 2008 Senior Bonds for fiscal year 2008 includes $24.8 million representing the interest paid by the Authority during this fiscal year on bond anticipation notes held by Citigroup Global Markets Inc., the senior manager of the Series A Bonds.

FINANCIAL OPERATIONS

Set forth below is a table showing and a brief discussion of the changes in Revenues and Current Expenses of the Authority within the three fiscal years ended June 30, 2007 and for the four-month periods ended October 31, 2006 and 2007 (amounts in the table in thousands). This information should be read together with the Authority's financial statements and the related notes included in *Appendix I* to this Official Statement. Financial information for the four-month periods ended October 31, 2006 and 2007 is derived from unaudited financial statements, which, in the opinion of management, include all adjustments necessary for a fair presentation of the results for those periods. Results for the four-month period ended October 31, 2007 are not necessarily indicative of results for the full year.

	Audited			Unaudited Four Months Ended October 31,	
	2005	2006	2007	2006	2007
Operating revenue:					
Water	$ 207,762	$ 330,443	$ 492,342	$ 163,372	$ 156,298
Sewer	106,057	172,760	263,196	89,915	91,186
Total net operating revenue	313,819	503,203	755,538	253,287	247,484
Operating expenses:					
Payroll and payroll related	276,181	288,684	307,575	106,373	109,370
Service contract - Superaqueduct	16,682	22,401	20,602	6,830	6,541
Professional and consulting services	47,843	33,818	19,867	6,797	7,136
Chemicals	20,830	23,769	27,234	9,941	7,591
Materials and replacements	13,603	8,560	13,678	4,041	5,859
Repairs and maintenance of capital assets	21,298	18,913	28,058	8,580	9,910
Electricity	85,465	108,563	103,944	38,047	38,938
Insurance	10,745	8,899	9,640	3,067	3,323
Other operating expenses	50,428	56,279	58,421	24,339	24,741
Operating expenses (excluding depreciation and amortization)	543,075	569,886	589,019	208,015	213,409
Depreciation and amortization	148,262	153,764	135,293	47,865	49,537
Total operating expenses	691,337	723,650	724,312	255,880	262,946
Operating income (loss)	(377,518)	(220,447)	31,226	(2,593)	(15,462)
Nonoperating revenue and expenses:					
Rural aqueducts subsidy	34,557	—	—	—	—
Interest expense, net of amortization of debt issuance cost, bond premium and discount, and deferred refunding loss	(73,229)	(107,129)	(141,215)	(39,553)	(43,310)
Commonwealth contributions for principal payments on bonds and notes	54,900	3,198	2,733	—	—
Commonwealth contributions for interest payments on bonds and notes	51,580	12,517	40,414	—	—
Interest income	1,906	3,180	7,650	1,214	2,036
Other income	3,213	5,670	5,212	3,156	3,045
	72,927	(82,564)	(85,206)	(35,183)	(38,229)
Loss before capital contributions	(304,591)	(303,011)	(53,980)	(37,776)	(53,691)
Capital contributions:					
Commonwealth and PRIFA contributions for capital projects, net	61,856	41,410	501	—	7,429
Capital assets donated by PRIFA	93,668	15,367	—	10,674	—
Federal grants and other contributions	19,385	21,169	23,162	6,243	10,528
Other Commonwealth contributions	3,836	—	700	—	—
Total capital contributions	178,745	77,946	24,363	16,917	17,957
Change in net assets	(125,846)	(225,065)	(29,617)	(20,859)	(35,734)
Net assets at beginning of period	2,618,512	2,492,666	2,267,601	2,267,601	2,237,984
Net assets at end of period	**$ 2,492,666**	**$ 2,267,601**	**$ 2,237,984**	**$ 2,246,742**	**$ 2,202,250**

Management's Discussion of Historical Operating Results

Four Months Ended October 31, 2007 compared to October 31, 2006

Net assets declined by $35.7 million during the four month period ended October 31, 2007 compared to a $20.9 million decline in the same period in 2006.

Total operating revenues declined by $5.8 million on account of an increase in the reserve for uncollectible debts stemming from the increase in receivables that resulted from the two-stage rate increase during fiscal years 2006 and 2007.

Total operating expenses, excluding depreciation and amortization, increased by $5.4 million due to higher payroll costs of $3 million during the period as compared to the same period in 2006, as part of the collective bargaining agreement that the Authority is honoring (although it has not been signed) and higher materials and replacements and repair and maintenance costs of $3.1 million on account of the Authority's implementation of its preventive maintenance program, offset partially by a $2.4 million decline in chemicals resulting from efficiencies in use and a reduction in chlorine costs. In addition, electricity, insurance and other operational expenses together increased by $1.5 million.

Depreciation and amortization expense increased by $1.7 million over the period compared to the same period in 2006, as a result of an increase of the Authority's capital assets being depreciated.

Non-operating revenue and expenses, net, increased by $3.0 million on account of additional interest owing on bond anticipation notes issued by the Authority during the period, offset somewhat by an increase in interest income.

Capital contributions slightly increased by $1 million as the result of the offsetting effects of a $10.7 million decrease in capital assets donated by PRIFA and increases totaling approximately $11.7 million in federal grants and other contributions ($4.3 million) and Commonwealth and PRIFA capital projects contributions ($7.4 million).

Fiscal Year 2007 compared to Fiscal Year 2006

Net assets decreased by $29.6 million from fiscal year 2006 to fiscal year 2007 due to the results of current year operations as described below.

Operating revenues increased by $252.3 million as a result of the second part of the two-stage rate increase that took effect on July 1, 2006.

Operating expenses, excluding depreciation and amortization, increased by $19.1 million, mainly due to the following offsetting effects: payroll and related expenses increased by $18.9 million on account of higher employment and salary scales; repairs and maintenance of capital assets and materials and replacements expenses increased by $14.3 million caused mainly by the cost of implementing a preventive maintenance program with the objective of a reduction on corrective maintenance costs in the future; and professional and consulting service expenses declined by $14 million as the Authority continued to reduce its reliance on such services as technical assistance for plant operations and others.

Depreciation and amortization expense decreased by $18.5 million due to certain equipment and other capital assets that became fully depreciated as of June 30, 2006.

Non-operating expenses during the year increased by $2.6 million mainly due to the offsetting effects of: a $34.1 million increase in interest expense caused by higher borrowings for CIP expenditures, a $4.5 million increase in interest income caused by an increase in construction fund interest earning deposits due to the increased borrowings, netted from a $27.9 million increase in interest paid by the Commonwealth.

Capital contributions decreased by approximately $53.6 million primarily on account of a continued reduction in the amount of Commonwealth (and to a lesser extent, PRIFA) contributions in the amount of $56.3 million, offset by a $2.0 million increase in federal grants and other contributions.

Fiscal Year 2006 compared to Fiscal Year 2005

Net assets decreased by $225.1 million from fiscal year 2005 to fiscal year 2006 due to the results of current year operations as described below.

Operating revenues increased $189.4 million as a result of the first part of the two-stage rate increase that took effect in October 2005.

Operating expenses, excluding depreciation and amortization, increased by $26.8 million mainly due to the following offsetting effects: payroll and related expenses increased by $12.5 million on account of higher employment and salary scales; materials, repairs and maintenance of capital assets declined by $7.4 million caused mainly by the impact of additional costs in fiscal year 2005 due to the union employees' strike and higher capitalization of these costs in fiscal year 2006; professional and consulting service expenses declined by $14.0 million as the Authority contracted additional services during fiscal year 2005 to cover the needs due to the union employees' strike; electricity increased by $23.1 million due to the higher oil costs during the year; and the Authority recorded a nonrecurring $10.2 million charge during fiscal year 2006 resulting from a revaluation of the carrying amount of its capital assets.

Depreciation and amortization expense increased by $5.5 million due to projects being completed and transferred to plant in service during fiscal year 2006.

Non-operating expenses during the year increased by $155.5 million primarily due to the elimination of Commonwealth operating subsidies of $34.6 million and a reduction of Commonwealth contributions for debt service payments (principal and interest) on bonds and notes of $90.8 million coupled with an increase in interest expense caused by higher borrowings for CIP expenditures of $33.9 million.

Capital contributions decreased by $100.8 million primarily because of a $78.3 million decline in capital assets donated by PRIFA as the Authority took on an increasing role for their implementation and a $20.4 million decline in the amount of Commonwealth (and to a lesser extent, PRIFA) contributions.

Management's Discussion of Forecasted Operating Results

The financial estimates and projections contained herein are subject to certain contingencies which cannot be quantified and are subject to the uncertainties inherent in any attempt to predict the results of future operations; accordingly, such forecasts are subject to periodic revision which may involve substantial change. The Authority makes no representation or warranty that these estimates and projections will be realized.

The forecast set forth below for the five fiscal years ending June 30, 2012 is based upon management's assumptions of future events and circumstances and sets forth the "base case" projections of Net Revenues and Annual Debt Service. This "base case" forecast assumes, among other things, that no rate increases in excess of 4½% annually and 25% in total will occur during the forecast period. Additional Revenue increases during the forecast period are due to continued growth in the customer base and usage, stepped up efforts against clandestine hook-ups and service theft and imposition of increased development fees (that are permitted to be implemented outside of the restrictions of Resolution 2167) and additional interest income from certain Trust Agreement investments. Expenses increase primarily due to the implementation of new programs required by the 2006 EPA Consent Decree, the 2006 Drinking Water Settlement Agreement and general price level increases, less capitalized additional costs. Annual Debt Service increases as additional debt is issued to finance the CIP. A recitation of all the assumptions used in the preparation of the below projections and the conclusions of the Consulting Engineer stating the projections of revenues and expenses presented below are generally reasonable, is set forth in Section 7.9 of the Consulting Engineer's Report in *Appendix II*.

In June 2007, the Authority entered into two forward starting, interest rate exchange agreements with affiliates of Morgan Stanley & Co. Inc. and Bear, Stearns & Co. Inc., each an underwriter of the 2008 Series A Bonds. The agreements covered a notional amount of $930 million, and their purpose was to allow the Authority to hedge part of its exposure to the adverse effects that rising interest rates would have on the Authority's ability to finance its CIP. The agreements were terminated by the parties on February 14, 2008, and the Authority is obligated to make a payment to the counterparties on the date of delivery of the 2008 Senior Bonds in the amount listed under *Plan of Financing* above. The Authority intends to make such termination payment from the proceeds of the 2008 Senior Bonds. The Authority will record the termination amount as a non-operating expense in the fiscal year 2008 Statement of Revenues, Expenses, and Changes in Net Assets, but this amount is not shown in the following table because the Trust Agreement excludes such non-operating expenses (if they are reimbursed by an Authority debt issue) from the calculation of the various ratios that are shown in the table below. See also notes 20(e) and 21(b) in the Audited Financial Statements of the Authority for the fiscal years ended June 30, 2006 and 2007 in *Appendix I*.

	Fiscal Year Ending June 30,				
	2008	**2009**	**2010**	**2011**	**2012**
Revenues			**('000s)**		
Base Fee and Service Charges	$775,000	$775,000	$775,000	$775,000	$775,000
Average Annual Growth	7,750	15,578	23,483	31,468	39,533
Rate Increases (Additional)	—	—	—	—	—
Rate Adjustments	—	—	35,576	73,109	112,690
Operational Initiatives	3,875	11,625	34,875	38,750	40,688
Reserve for Uncollectible Accounts	(52,468)	(50,138)	(51,875)	(53,538)	(55,074)
Collection Lag	—	—	—	—	—
Actual Collections Adjustment	15,000	—	—	—	—
Subsidy	(3,300)	(3,630)	(3,993)	(4,392)	(4,832)
Other Income	13,000	13,000	13,000	13,000	13,000
Special Assessments	15,000	20,000	20,000	20,000	20,000
Interest Income	1,102	5,070	6,209	7,110	8,815
Total Operating Revenues, Net	**$774,959**	**$786,505**	**$852,275**	**$900,506**	**$949,820**
Operating Expenses					
Payroll and Related	$327,633	$338,433	$346,138	$352,852	$358,492
Electric Power (Inflation and Growth)	114,709	117,003	119,343	121,730	124,165
Chemicals (Inflation and Growth)	28,977	29,267	30,292	31,352	32,449
Superaqueduct Service Contract	21,000	21,686	22,354	23,057	23,795
Insurance	14,050	14,331	14,618	14,910	15,208
Other Expenses (contingencies, admin. etc.)	150,497	154,574	158,766	163,078	167,512
Capitalized Operating Expenses	(42,696)	(43,894)	(44,948)	(45,954)	(46,905)
Total Operating Expenses	**$614,170**	**$631,400**	**$646,563**	**$661,025**	**$674,715**
Net Revenues Available for Debt Service	**$160,789**	**$155,104**	**$205,712**	**$239,481**	**$275,104**
Debt Service†					
1) Senior	$ 35,346	$ 48,569	$ 97,442	$121,952	$188,782
2) Senior Bond DSRF Replenishment	—	—	—	—	—
3) Senior Subordinate (Term Loan)	15,903	17,892	17,912	17,934	—
4) Senior Subordinate DSRF Replenishment	—	—	—	—	—
5) Subordinate (New State Revolving Fund)	—	—	—	3,897	7,372
6) LOC Fees for Operating Reserve Funds	—	—	—	—	—
7) Capital Improvement Fund	—	—	—	—	—
8) Commonwealth Guaranteed Indebtedness	42,755	52,005	59,126	59,109	57,921
9) Commonwealth Supported Obligations	54,451	27,240	27,237	27,714	13,441
Total Debt Service	**$148,454**	**$145,705**	**$201,717**	**$230,606**	**$267,516**
Debt Service Coverage					
Senior	4.55x	3.19x	2.11x	1.96x	1.46x
Senior and Senior Subordinate	3.14x	2.33x	1.78x	1.71x	1.46x
Senior, Senior Subordinate and Subordinate	3.14x	2.33x	1.78x	1.67x	1.40x
Senior, Senior Subordinate and Subordinate and Commonwealth Guaranteed Indebtedness	1.71x	1.31x	1.18x	1.18x	1.08x
Senior, Senior Subordinate and Subordinate, Commonwealth Guaranteed Indebtedness and Commonwealth Supported Obligations	1.08x	1.06x	1.02x	1.04x	1.03x

† The 2008 Senior Bonds will include approximately 16-17 months of capitalized interest on a portion of the 2008 Senior Bonds. Other Senior Bonds to be issued during the projection period are assumed to include varying amounts of capitalized interest (up to 24 months). Under the Trust Agreement, debt service, such as capitalized interest, that is paid from moneys held in escrow by the Trustee is excluded from the computation of Annual Debt Service and, thus, is not shown in the table. The amount of senior debt service for fiscal year 2008 includes $24.8 million representing the interest paid by the Authority during this fiscal year on bond anticipation notes held by Citigroup Global Markets Inc., the senior manager of the Series A Bonds.

PUERTO RICO INFRASTRUCTURE FINANCING AUTHORITY

PRIFA was created (i) for the purpose of providing financial, administrative, consulting, technical, advisory, managerial and other types of assistance to other public corporations and governmental instrumentalities of the Commonwealth authorized to develop infrastructure facilities, and (ii) to establish alternate means for financing infrastructure facilities. The Board of Directors of PRIFA is composed of the Board of Directors of Development Bank (the "GDB Board") and the Secretary of the Treasury of the Commonwealth (in the event he is not a member of GDB Board). Since its creation in 1988, PRIFA has provided substantial financial and other assistance to the Authority by issuing its bonds (secured by a portion of certain federal excise taxes on alcoholic beverages, which taxes are paid by the United States into the Treasury of Puerto Rico and assigned to PRIFA by the Commonwealth) to finance a portion of the Authority's CIP and administering the operation of and providing other financial assistance to the Authority in connection with the Revolving Funds (described above in "Commonwealth Guaranteed Indebtedness – Revolving Funds" under *Debt*).

The PRIFA-PRASA Agreement

The Authority and PRIFA have entered into an agreement (the "PRIFA-PRASA Agreement") which provides a contractual framework for PRIFA to assist the Authority to implement the CIP and improve the operation and maintenance of the Systems. Until these objectives are met, the Authority is subject to a "special period" during which the Authority must provide PRIFA with reports regarding the Authority's infrastructure and/or its operation and financial condition and special reports that PRIFA deems necessary by reason of the conditions that warrant a "special period". The "special period" will continue until, among other things, (1) the Authority has delivered to PRIFA an acceptable report showing that the Systems are being properly maintained and operated in compliance with material environmental laws, regulations, permits and orders, and that the Authority is implementing substantially the provisions of its CIP; and (2) PRIFA has determined that the Authority is able to finance its capital improvements on acceptable terms.

PRIFA recently transferred to the Authority primary responsibility for undertaking and implementing projects that were being developed by PRIFA on behalf of the Authority. For projects undertaken and completed by PRIFA or as to which PRIFA provided financial assistance, once these projects are functional, PRIFA will provide start-up and operational services until the Authority is able to take over operation of the completed project. For all new projects, the Authority will have the primary responsibility to undertake and implement them and may use all of PRIFA's resources in furtherance thereof, including financing by PRIFA and/or the use of internal PRIFA personnel and external consultants, without cost to the Authority. The Authority agrees to provide such reasonable technical assistance as may be needed by PRIFA for the development and implementation of these new projects, including consulting with Authority personnel and external consultants, without cost to PRIFA.

Under the PRIFA-PRASA Agreement, PRIFA may not take actions which would cause the Authority to be in violation of the Trust Agreement. PRIFA shall not be deemed to be acting on behalf of or have incurred any liability in respect of the holders or Beneficial Owners of 2008 Senior Bonds, notwithstanding that PRIFA has taken or not taken any action which has an effect on the Authority.

LITIGATION

There is no pending litigation of any nature restraining or enjoining or seeking to restrain or enjoin the issuance, sale or delivery of the 2008 Senior Bonds or in any way contesting or affecting the validity of the 2008 Senior Bonds, the resolutions or the proceedings of the Authority taken with respect to the authorization, issuance or sale thereof, or the pledge or application of any moneys under the Trust Agreement or the existence or powers of the Authority.

The Authority is a defendant in litigation brought by the United States for the purpose of enforcing compliance with the Clean Water Act. See "PRASA Clean Water Act Litigation" in *Environmental Matters*, above.

The Authority is a defendant in various lawsuits arising in the normal course of its business, including contract, construction and miscellaneous environmental claims. In the opinion of the Authority and its General

Counsel, the ultimate disposition of such existing proceedings will not have a material adverse effect on the financial position or operations of the Authority. Additional information relating to Authority lawsuits can be found in note 20(g) of the Authority's basic financial statements in *Appendix I*.

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 Series A Bonds for interest thereon to be and remain excluded from gross income for federal income tax purposes. Noncompliance with such requirements could cause the interest on the Series A Bonds to be included in gross income for federal income tax purposes retroactive to the date of issue of the Series A Bonds. The Authority has covenanted to comply to the extent permitted by the Constitution and the laws of Puerto Rico with the applicable requirements of the Code in order to maintain the exclusion of the interest on the Series A Bonds from gross income for federal income tax purposes pursuant to Section 103 of the Code.

In the opinion of Nixon Peabody LLP, Bond Counsel, under existing law and assuming compliance with the aforementioned covenant, and the accuracy of certain representations and certifications made by the Authority described above, interest on the Series A Bonds is excluded from gross income for federal income tax purposes under Section 103 of the Code. Bond Counsel is also of the opinion that such interest is not treated as a preference item in calculating the alternative minimum tax imposed under the Code with respect to individuals and corporations. Interest on the Series A Bonds is, however, included in the adjusted current earnings of certain corporations for purposes of computing the alternative minimum tax imposed on such corporations.

State Taxes

Bond Counsel is also of the opinion that the Series A Bonds and interest thereon are exempt from state, Commonwealth and local income taxation.

Original Issue Discount

Bond Counsel is further of the opinion that the difference between the principal amount of the Series A Bonds maturing after 2025 (collectively the "Discount Bonds") and the initial offering price to the public (excluding bond houses, brokers or similar persons or organizations acting in the capacity of underwriters or wholesalers) at which price a substantial amount of such Discount Bonds of the same maturity was sold constitutes original issue discount which is excluded from gross income for federal income tax purposes to the same extent as interest on the Series A Bonds. Further, such original issue discount accrues actuarially on a constant interest rate basis over the term of each Discount Bond and the basis of each Discount Bond acquired at such initial offering price by an initial purchaser thereof will be increased by the amount of such accrued original issue discount. The accrual of original issue discount may be taken into account as an increase in the amount of tax-exempt income for purposes of determining various other tax consequences of owning the Discount Bonds, even though there will not be a corresponding cash payment. Owners of the Discount Bonds are advised that they should consult with their own advisors with respect to the state, Commonwealth and local tax consequences of owning such Discount Bonds.

Original Issue Premium

The Series A Bonds maturing prior to 2017 (collectively the "Premium Bonds") are being offered at prices in excess of their principal amounts. An initial purchaser with an initial adjusted basis in a Premium Bond in excess of its principal amount will have amortizable bond premium which is not deductible from gross income for federal income tax purposes. The amount of amortizable bond premium for a taxable year is determined actuarially on a constant interest rate basis over the term of each Premium Bond based on the purchaser's yield to maturity (or, in the case of Premium Bonds callable prior to their maturity, over the period to the call date, based on the purchaser's yield to the call date and giving effect to any call premium). For purposes of determining gain or loss on the sale or other disposition of a Premium Bond, an initial purchaser who acquires such obligation with an amortizable bond premium is required to decrease such purchaser's adjusted basis in such Premium Bond annually by the amount of

amortizable bond premium for the taxable year. The amortization of bond premium may be taken into account as a reduction in the amount of tax-exempt income for purposes of determining various other tax consequences of owning such Premium Bonds. Owners of the Premium Bonds are advised that they should consult with their own advisors with respect to the state, Commonwealth and local tax consequences of owning such Premium Bonds.

Ancillary Tax Matters

Ownership of the Series A 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 Series A Bonds.

Commencing with interest paid in 2006, interest paid on tax-exempt obligations such as the Series A 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 Series A 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.

Bond Counsel is not rendering any opinion as to any federal tax matters other than those described under *Tax Matters*. 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 Series A Bonds, as well as any tax consequences arising under the laws of any state or other taxing jurisdiction.

Changes in Federal Tax Law and Post Issuance Events

From time to time proposals are introduced in Congress that, if enacted into law, could have an adverse impact on the potential benefits of the exclusion from gross income for federal income tax purposes of the interest on the Series A Bonds, and thus on the economic value of the Series A Bonds. This could result from reductions in federal income tax rates, changes in the structure of the federal income tax rates, changes in the structure of the federal income tax, or its replacement with another type of tax, repeal of the exclusion of the interest on the Series A Bonds from gross income for such purposes, or otherwise. It is not possible to predict whether any legislation having an adverse impact on the tax treatment of holders of the Series A Bonds may be proposed or enacted. Prospective purchasers of the Series A Bonds should consult their own tax advisers regarding such matters.

On November 5, 2007, the U.S. Supreme Court heard oral argument on *Davis v. Kentucky Dep't of Revenue of The Finance and Admin. Cabinet*, 197 S.W.3d 557 (2006), a case that has questioned the permissibility under the U.S. Constitution of the Commonwealth of Kentucky providing for a state income tax exemption for interest on obligations issued by Kentucky or its subdivisions while taxing interest on obligations of other states or their subdivisions. The laws of the Commonwealth currently result in such differing treatment, by exempting interest on obligations of the Commonwealth and its subdivisions and instrumentalities while taxing the interest on obligations issued by other states or their subdivisions or instrumentalities.

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

CONTINUING DISCLOSURE

In accordance with the requirements of Rule 15c2-12, as amended (the "Rule"), promulgated by the SEC, the Authority has covenanted in a Continuing Disclosure Agreement for the benefit of the Beneficial Owners (generally, the tax owners of the 2008 Senior Bonds):

(a) to file within 275 days after the end of each fiscal year with each NRMSIR and with any Commonwealth state information depository ("SID"), core financial information and operating data for the prior fiscal year, including (i) the Authority's audited financial statements, prepared in accordance with generally accepted accounting principles in effect from time to time, and (ii) material historical quantitative data (including financial information and operating data) on the Authority's Systems and revenues, expenses, financial operations and indebtedness generally found in this Official Statement (but excluding the Commonwealth of Puerto Rico Financial Information and Operating Data Report incorporated by reference herein); and

(b) to file in a timely manner, with each NRMSIR or with the Municipal Securities Rulemaking Board ("MSRB"), and with any Commonwealth SID, notice of failure of the Authority to comply with clause (a) above and notice of any of the following events with respect to the 2008 Senior Bonds, if material:

(i) principal and interest payment delinquencies;
(ii) non-payment related defaults;
(iii) unscheduled draws on debt service reserves reflecting financial difficulties;
(iv) unscheduled draws on credit enhancements reflecting financial difficulties;
(v) substitution of credit or liquidity providers, or their failure to perform;
(vi) adverse opinions or events, affecting the tax exempt status of the Series A Bonds;
(vii) modifications to rights of security holders (including Beneficial Owners) of the 2008 Senior Bonds;
(viii) 2008 Senior Bond calls;
(ix) defeasances;
(x) release, substitution, or sale of property securing repayment of the 2008 Senior Bonds; and
(xi) rating changes.

With respect to the following events:

Events (iv) and (v). The Authority does not undertake to provide any notice with respect to credit enhancement added after the primary offerings of the 2008 Senior Bonds, unless the Authority applies for or participates in obtaining the enhancement.

Event (vi). For information on the tax status of the Series A Bonds, see *Tax Exemption*.

As of the date of this Official Statement, there is no Commonwealth SID, and the name and address of each NRMSIR is: Bloomberg Municipal Repository, 100 Business Park Drive, Skillman, New Jersey 08558; Standard & Poor's Securities Evaluations, Inc., 55 Water Street, 45th Floor, New York, New York 10041; Interactive Data Pricing and Reference Data, Inc., Attn: NRMSIR, 100 William Street, New York, New York 10038; and DPC Data Inc., One Executive Drive, Fort Lee, New Jersey 07024.

The Authority may from time to time choose to provide notice of the occurrence of certain other events in addition to those listed above if, in the judgment of the Authority, such other events are material with respect to the 2008 Senior Bonds, but the Authority does not undertake to provide notice of the occurrences of any material event except those events listed above.

The Authority acknowledges that its undertaking pursuant to the Rule described above is intended for the benefit of the Beneficial Owners of the 2008 Senior Bonds, and shall be enforceable by any such Beneficial Owners; provided that the right to enforce the provisions of its undertaking shall be limited to a right to obtain specific enforcement of the Authority's obligations hereunder.

No Beneficial Owner may institute any suit, action or proceeding at law or in equity ("Proceeding") for the enforcement of the foregoing covenants (the "Covenants") or for any remedy for breach thereof, unless such Beneficial Owner shall have filed with the Authority written notice of and request to cure such breach, and the Authority shall have refused to comply within a reasonable time. All Proceedings shall be instituted only in the federal district court for the District of Puerto Rico or in a Commonwealth court located in the Municipality of San Juan, Puerto Rico for the equal benefit of all Beneficial Owners of the Outstanding 2008 Senior Bonds benefited by the Covenants, and no remedy shall be sought or granted other than specific performance of the Covenant at issue. Notwithstanding the foregoing, no challenge to the adequacy of the information provided in accordance with the filings mentioned in paragraphs (a) or (b) above may be prosecuted by any Beneficial Owner except in compliance with the remedial and enforcement provisions contained in the Continuing Disclosure Agreement.

The Covenants may only be amended 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 type of business conducted; the Covenants, as amended, would have complied with the requirements of the Rule at the time of respective awards of the 2008 Senior Bonds, after taking into account any amendments or interpretations of the Rule, or any change in circumstances; and the amendment does not materially impair the interests of Beneficial Owners, as determined by parties unaffiliated with the Authority; or

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

The Authority has further agreed that the annual financial information containing any amended operating data or financial information will explain, in narrative form, the reasons for the amendment and the impact of the change in the type of operating data or financial information being provided.

Any assertion of beneficial ownership must be filed, with full documentary support, as part of the written request described above.

These Covenants have been made in order to assist the Underwriters to comply with the Rule.

ELIGIBILITY OF 2008 SENIOR BONDS

The 2008 Senior Bonds will be eligible for deposit by banks in Puerto Rico to secure public funds and will be approved investments for insurance companies to qualify them to do business in Puerto Rico as required by law.

UNDERWRITING

The Underwriters have agreed jointly and severally, subject to certain conditions, to purchase the Series A Bonds from the Authority at a discount of $8,250,428.63 from the initial public offering prices set forth (or derived from information set forth) on the inside cover page. The Underwriters are obligated to take up and pay for all of such Series A Bonds if any are taken. The obligation of the Underwriters to purchase such Bonds is subject to certain conditions. Such Series A Bonds may be offered and sold to certain dealers (including dealers depositing them into investment trusts) and institutional purchasers at prices lower than the public offering prices which may be changed, from time to time, by the Underwriters.

The Authority has agreed to indemnify the Underwriters against certain liabilities, including liabilities under the federal securities laws.

Popular Securities, Inc, ("Popular") has entered into a joint venture agreement (the "JV Agreement") with Morgan Stanley & Co. Incorporated ("Morgan Stanley"), under which the parties shall provide services and advice to each other related to the structuring and execution of certain municipal finance transactions in the U.S. capital markets with governmental entities located in the Commonwealth. Pursuant to the terms of the JV Agreement and

in compliance with applicable rules, the parties will be entitled to receive a portion of each other's net profits from the underwriting of the Series A Bonds as consideration for their professional services.

Oriental Financial Services Corp. ("OFS") and Bear, Stearns & Co., Inc. ("Bear Stearns") have entered into a joint venture agreement under which the parties shall provide services and advice to each other and take risk related to the structuring and execution of certain municipal finance transactions with governmental entities located in the Commonwealth. Pursuant to the terms of such joint venture agreement and in compliance with applicable rules, the parties will be entitled to receive a portion of each other's net profits form the underwriting of the Series A Bonds as consideration for their professional services.

BBVAPR MSD and RBC Capital Markets Corporation ("RBC") have entered into an agreement under which the parties provide services and advice to each other to assist the Commonwealth and its issuers in the structuring and execution of their municipal securities offering. As part of the agreement BBVAPR MSD and RBC share in the risk from the underwriting of the Series A Bonds as part of the consideration for their professional services.

Oppenheimer & Co. Inc. ("Oppenheimer") and Eurobank Municipal Securities Dealer ("Eurobank MSD") have entered into an agreement to jointly pursue municipal securities underwriting opportunities with the Commonwealth, its agencies, municipalities and governmental conduit issuers in the Commonwealth. Under the agreement Oppenheimer and Eurobank MSD will be entitled to receive a portion of each other's revenues from the underwriting of the Series A Bonds in consideration for their professional services.

JPMorgan Securities Inc. ("JPMSI") and Scotia Capital (USA) Inc. ("SCUSA") have entered into an agreement to assist the Commonwealth, its public corporations, agencies, instrumentalities, and municipalities in structuring and facilitation the issuance of their municipal securities. For each issuance of municipal securities for which both parties act as co-senior manager or co-manager, any sales commission or takedowns shall be allocated based on actual sales of municipal securities by JPMSI or SCUSA.

Santander Securities Corporation ("SSC") and Banc of America Securities LLC ("BAS") have entered into an agreement to jointly pursue municipal securities underwriting opportunities with the Commonwealth, its agencies, and other municipalities and governmental conduit issuers in the Commonwealth. Under the terms of the agreement, SSC and BAS will be entitled to receive a portion of each other's revenues from the underwriting of the Series A Bonds in consideration for their professional services.

COMMONWEALTH COVENANT

The Commonwealth has pledged to all holders of the Bonds that it will not limit or alter the rights or powers vested in the Authority by the Act so as to impair the rights of such holders until the Bonds and the interest thereon are fully met and discharged.

GOVERNMENT DEVELOPMENT BANK FOR PUERTO RICO

As required by Act No. 272 of the Legislature of Puerto Rico, approved May 15, 1945, as amended, Development Bank has acted as financial advisor to the Authority in connection with the offering of the 2008 Senior Bonds. Certain of the Underwriters have been selected by Development Bank to serve from time to time as underwriters of its obligations and the obligations of the Commonwealth, its instrumentalities and public corporations (including the Authority). Certain of the Underwriters of their affiliates participate in other financial transactions with Development Bank and the Commonwealth, its instrumentalities and public corporations (including the Authority).

LEGAL MATTERS

Legal matters incident to the authorization, issuance, sale and delivery of the Series A Bonds are subject to the unqualified approving legal opinion of Nixon Peabody LLP, New York, New York. The form of opinion of Bond Counsel is set forth in *Appendix IV*. Certain legal matters will be passed upon for the Underwriters by Sidley

Austin LLP, New York, New York, and for the Authority by its Special Counsel, Cancio Covas & Santiago, LLP, San Juan, Puerto Rico.

EXPERTS

The Consulting Engineer has been engaged to provide consulting and engineering services to the Authority as required by the Trust Agreement and will prepare an annual report that includes comments and recommendations for the proper maintenance, repair and operation of the Authority's water and wastewater treatment facilities and performs other consulting services required by the Trust Agreement and requested by the Authority. The Consulting Engineer was first engaged by the Authority for these purposes in 2007, although it has been retained by the Authority as a consultant in connection with the Authority's North region CIP starting in 2005. Its first report will be delivered to the Authority and to the Trustee in 2008 and is included as *Appendix II* in reliance on the expertise and consent of the Consulting Engineer.

INDEPENDENT AUDITORS

The basic financial statements of the Authority as of June 30, 2007 and 2006, and for the years then ended, contained in *Appendix I*, have been audited by KPMG LLP, independent accountants, as stated in their report appearing herein.

RATINGS

The 2008 Senior Bonds have been assigned a rating of Baa3 by Moody's, BBB- by S&P and BBB- by Fitch. The Insured Bonds have been assigned a rating of Aaa by Moody's, AAA by S&P and AAA by Fitch, based on the Policy issued by Assured Guaranty (see *Bond Insurance*). The ratings reflect only the respective opinions of such rating agencies. Any explanation of the significance of ratings must be obtained from the respective rating agency. There is no assurance that the ratings will continue for any given period of time or will not be revised downward or withdrawn entirely by any of such rating agencies. Any downward revision or withdrawal of the ratings could have an adverse effect on the market prices of the 2008 Senior Bonds.

MISCELLANEOUS

The foregoing references to and summaries of certain federal, Commonwealth and local laws, including, but not limited to, the laws of the Commonwealth, the Act, the Clean Water Act and documents, agreements and court decisions, orders and decrees, including but not limited to, the 2006 EPA Consent Decree, the Trust Agreement and the 2008 Series Supplement, are made subject to all the detailed provisions thereof. Such references and 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 Trust Agreement and the Bond Resolution are available for inspection during regular business hours at the office of Development Bank, Roberto Sánchez Vilella Government Center, Avenida de Diego, Parada 22, San Juan, Puerto Rico 00940, telephone number (787) 722-2525, or at the principal corporate trust office of the Trustee.

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.

This Official Statement will be filed with each NRMSIR and with MSRB.

This Official Statement has been duly authorized, executed and delivered by the Authority.

There are appended to this Official Statement: in *Appendix I*, the financial statements of the Authority for the fiscal years ended June 30, 2007 and June 30, 2006, together with the independent accountants' report of KPMG LLP; in *Appendix II*, the Consulting Engineer's Report; in *Appendix III*, a summary of the Trust Agreement; in *Appendix IV*, the proposed form of opinion of Nixon Peabody LLP, Bond Counsel; and in *Appendix V* the Specimen Financial Guaranty Insurance Policy of Assured Guaranty.

The information set forth in this Official Statement, except for certain information on the page following the inside cover page, the information appearing in *Underwriting* and the information pertaining to DTC was supplied by the Authority. The information pertaining to DTC was supplied by DTC.

PUERTO RICO AQUEDUCT AND SEWER AUTHORITY

By: /s/ José Ortiz Vázquez
Executive President

PUERTO RICO AQUEDUCT AND SEWER AUTHORITY

(A Component Unit of the Commonwealth of Puerto Rico)

Basic Financial Statements

June 30, 2007 and 2006

(With Independent Auditors' Report Thereon)

PUERTO RICO AQUEDUCT AND SEWER AUTHORITY
(A Component Unit of the Commonwealth of Puerto Rico)

Table of Contents

	Page
Independent Auditors' Report	1
Management's Discussion and Analysis	2
Basic Financial Statements:	
Balance Sheets	14
Statements of Revenues, Expenses, and Changes in Net Assets	16
Statements of Cash Flows	17
Notes to Basic Financial Statements	19

KPMG LLP
American International Plaza
Suite 1100
250 Muñoz Rivera Avenue
San Juan, PR 00918-1819

Independent Auditors' Report

The Board of Directors
Puerto Rico Aqueduct and Sewer Authority:

We have audited the accompanying basic financial statements of the Puerto Rico Aqueduct and Sewer Authority, a component unit of the Commonwealth of Puerto Rico, (the Authority) as of and for the years ended June 30, 2007 and 2006, as listed in the table of contents. These financial statements are the responsibility of the Authority's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Authority's internal control over financial reporting. Accordingly, we express no such opinion. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Puerto Rico Aqueduct and Sewer Authority, a component unit of the Commonwealth of Puerto Rico, as of June 30, 2007 and 2006, and the changes in its financial position and its cash flows for the years then ended in conformity with U.S. generally accepted accounting principles.

The management's discussion and analysis on pages 2 through 13 is not a required part of the basic financial statements but is supplementary information required by U.S. generally accepted accounting principles. We have applied certain limited procedures, which consisted principally of inquiries of management regarding the methods of measurement and presentation of the required supplementary information. However, we did not audit the information and express no opinion on it.

KPMG LLP

December 28, 2007, except as to Note 21(b),
which as of February 14, 2008

Stamp No. 2221907 of the Puerto Rico
Society of Certified Public Accountants
was affixed to the record copy of this report

KPMG LLP, a U.S. limited liability partnership, is the U.S. member firm of KPMG International, a Swiss cooperative.

As management of Puerto Rico Aqueduct and Sewer Authority (the Authority), we offer readers of the Authority's annual financial report our discussion and analysis of the Authority's financial performance during the fiscal years ended on June 30, 2007 and 2006. Please read it in conjunction with the Authority's financial statements, which follow this section.

June 30, 2007 and 2006 Financial Highlights

- The Authority's net assets decreased by $29.6 million to $2,238 million, or 1.3%, primarily as result of a decrease in contributions from the Puerto Rico Infrastructure Financing Authority (PRIFA) a component unit of the Commonwealth of Puerto Rico (the Commonwealth).
- Operating revenues increased by $252.3 million to $755.5 million, or 50.1%, primarily due to increased revenue from residential, commercial, and governmental customers attributable to a rate increase, the second of a two-step increase effective on July 2006.
- Capital contributions decreased by $53.6 million to $24.4 million, or 68.7%, primarily as a result of a decrease in contributions and capital assets donated by PRIFA.
- Total assets increased by $481.2 million to $5,693.7 million or 9.2% primarily due to an increase in capital assets of $318.0 million, and an increase in restricted cash and cash equivalents of $98.1 million.

June 30, 2006 and 2005 Financial Highlights

- The Authority's net assets decreased by $225.1 million to $2,267.6 million, or 9.0%, as result of a decrease in Commonwealth's contributions and subsidies.
- Operating revenues increased by $189.4 million to $503.2 million, or 60.3% primarily due to increased revenue from residential, commercial, and governmental customers attributable to a rate increase in October 2005, the first of a two step rate increase schedule.
- Capital contributions decreased by $100.8 million to $77.9 million, or 56.4% primarily as a result of a decrease in financial support from the Commonwealth of Puerto Rico (the Commonwealth) and in the capital assets donated by Puerto Rico Infrastructure Financing Authority (PRIFA).
- Total assets increased by $279.6 million to $5,212.5 million, or 5.7% due to the increase in the Authority's capital assets of approximately $245.8 million.

Operational Highlights

During previous years, the Commonwealth provided financial support for a significant part of the Authority's operations and capital improvement program. The Commonwealth notified the Authority that as part of a reorganization of the Central Government, the subsidies from the Commonwealth to the Authority would be reduced beginning in fiscal year 2006. As a result of this reduction in support from the Commonwealth, the Authority reviewed its rates and implemented a two step rate increase for water and sewer services. The first increase was effective on October 10, 2005, and the second was effective on July 1, 2006. This resulted in a net increase in operating revenues of $441.7 million during the last two fiscal years (increase of $252.3 million in 2007 and $189.4 million in 2006).

(Continued)

Overview of the Financial Statements

This annual report includes the management's discussion and analysis report, the independent auditors' report, and the basic financial statements of the Authority. The basic financial statements include notes that explain in more detail the information contained in the basic financial statements.

Financial Analysis of the Authority

The balance sheet and the statement of revenues, expenses, and changes in net assets report the net assets of the Authority and the changes therein. The Authority's net assets—the difference between assets and liabilities—is one way to measure its financial health or financial position. Increases or decreases in the Authority's net assets are one indicator of whether its financial health is improving or deteriorating. However, other nonfinancial factors need to be considered such as changes in economic conditions and new or changed government regulations.

Analysis of Financial Results

The following table provides a summary of the Authority's net assets as of June 30, of the years indicated (in thousands):

	June 30		
	2007	**2006**	**Change**
Current and other assets	$ 445,940	282,658	163,282
Capital assets, net	5,247,768	4,929,813	317,955
Total assets	5,693,708	5,212,471	481,237
Long-term debt outstanding	2,986,518	2,457,522	528,996
Other liabilities	469,206	487,348	(18,142)
Total liabilities	3,455,724	2,944,870	510,854
Net assets (deficit):			
Invested in capital assets, net of related debt	2,987,685	3,010,266	(22,581)
Restricted	19,284	8,794	10,490
Unrestricted deficit	(768,985)	(751,459)	(17,526)
Total net assets	$ 2,237,984	2,267,601	(29,617)

(Continued)

	June 30		
	2006	**2005**	**Change**
Current and other assets	$ 282,658	248,854	33,804
Capital assets, net	4,929,813	4,684,002	245,811
Total assets	5,212,471	4,932,856	279,615
Long-term debt outstanding	2,457,522	2,031,896	425,626
Other liabilities	487,348	408,294	79,054
Total liabilities	2,944,870	2,440,190	504,680
Net assets:			
Invested in capital assets, net of related debt	3,010,266	2,935,453	74,813
Restricted	8,794	7,187	1,607
Unrestricted	(751,459)	(449,974)	(301,485)
Total net assets	$ 2,267,601	2,492,666	(225,065)

Net Assets

June 30, 2007 and 2006

The Authority's net assets as of June 30, 2007 were approximately $2,238 million. This is a $29.6 million decrease from the net assets as of June 30, 2006 of $2,267.6 million. Total assets increased by $481.2 million during the year ended June 30, 2007. This is primarily a result of (1) an increase in capital assets of $318.0 million due to current year net additions of $453.3 million offset by current year depreciation and amortization of $135.3 million, (2) a net increase in unrestricted and restricted cash and cash equivalents of $98.1 million, (3) an increase in accounts receivable of $67.4 million, and (4) an increase of $2.3 million in other current assets and other assets.

Unrestricted and restricted cash and cash equivalents as of June 30, 2007 increased by $98.1 million when compared with June 30, 2006. The increase is primarily due to proceeds from the issuance of bond anticipation notes and additional drawings of lines of credit. Accounts receivable, net, increased by approximately $67.4 million primarily due the net effect of an increase of $102.8 million in accounts receivable from water and sewer services customers and an increase in the allowance for doubtful accounts of $40.6 million, both corresponding to the rate increase, and an increase in other receivables of $5.2 million. Accounts receivable from federal agency decreased $4.6 million corresponding primarily to amounts received from the U.S. Department of Homeland Security (USDHS) to cover the expenses incurred by the Authority to establish security features required by the USDHS.

Total liabilities increased by $510.9 million primarily due to the effect of an increase in long-term liabilities of $529.0 million as a result of drawings from lines of credit with Government Development Bank for Puerto Rico (GDB), a component unit of the Commonwealth, and bond anticipation notes net of a decrease in current liabilities of approximately $18.1 million primarily due to a decrease of $20.6 million in accrued interest.

(Continued)

June 30, 2006 and 2005

The Authority's net assets as of June 30, 2006 were approximately $2,267.6 million. This is a $225.1 million decrease over the net assets as of June 30, 2005 of $2,492.7 million. Total assets increased by $279.6 million during the year ended June 30, 2006. This is primarily a result of (1) an increase in capital assets of $245.8 million due to current year net additions of $409.8 million offset by current year depreciation and amortization of $153.8 million and a nonrecurring adjustment to capital assets of $10.2 million which reduced capital assets based on the results of an inventory and valuation study performed and (2) a net increase in cash, restricted, and other noncurrent assets of $33.8 million.

Unrestricted cash and cash equivalents as of June 30, 2006 decreased by $37.5 million when compared with June 30, 2005. The decrease is primarily due to a $62.9 million decrease in cash and an increase in nonnegotiable certificates of deposit of $25.4 million. Accounts receivable, net, increased by approximately $71.7 million mainly due to the net effect of an increase of $100.1 million in accounts receivable from customers corresponding to water and sewer services and an increase in the allowance for doubtful accounts of $34.9 million, both corresponding to the rate increase, and an increase in other receivables of $6.5 million. Accounts receivable from federal agency increased $6.5 million corresponding to amounts to be received from Federal Emergency Management Agency (FEMA), currently part of the USDHS, to cover the expenses incurred by the Authority to repair the damages caused by tropical storm Jeanne and from the USDHS to implement certain security features. Restricted assets decreased by $8.4 million due to the use of those funds in the capital improvement program.

Total liabilities increased by $504.7 million mainly as a result of drawings on lines of credit with GDB, amounting to $421.3 million.

Capital Assets

Capital assets as of June 30, 2007 and 2006 were as follows (in thousands):

		June 30,		
		2007	**2006**	**Change**
Capital assets being depreciated	$	6,421,760	6,349,502	72,258
Accumulated depreciation and amortization		(2,213,899)	(2,078,606)	(135,293)
		4,207,861	4,270,896	(63,035)
Land		50,999	43,131	7,868
Construction in progress		988,908	615,786	373,122
Capital assets, net	$	5,247,768	4,929,813	317,955

(Continued)

	June 30,		
	2006	**2005**	**Change**
Capital assets being depreciated	$ 6,349,502	6,059,412	290,090
Accumulated depreciation and amortization	(2,078,606)	(1,870,713)	(207,893)
	4,270,896	4,188,699	82,197
Land	43,131	51,080	(7,949)
Construction in progress	615,786	444,223	171,563
Capital assets, net	$ 4,929,813	4,684,002	245,811

June 30, 2007 and 2006

The net increase of $318.0 million in capital assets includes an investment of $453.3 million, reduced by $135.3 million in depreciation and amortization. The $453.2 million in capital investment is broken down as follows:

- $311.7 million in the Authority's capital improvements program;
- $96.9 million in renewal and replacement projects;
- $32.9 million for emergency projects and consent decree projects; and
- $11.8 million for other capital projects.

The Authority has approximately $988.9 million in construction in progress as of June 30, 2007, and has construction commitments of approximately $404 million.

June 30, 2006 and 2005

The net increase of $245.8 million in capital assets includes an investment of $409.8 million, reduced by $153.8 million in depreciation and amortization and a nonrecurring revaluation adjustment of $10.2 million. The $409.8 million in capital investment is broken down as follows:

- $254.1 million in the Authority's capital improvements program;
- $104.5 million in renewal and replacement projects;
- $9.4 million in projects under the "Agua Para Todos" program;
- $26.4 million for emergency projects and consent decree projects; and
- $15.4 million for projects transferred from PRIFA, another component unit of the Commonwealth.

The above amounts reflect the nonrecurring adjustment of $10.2 million reducing capital investment as a result of an inventory and valuation study performed over the Authority's capital assets during fiscal year 2006.

(Continued)

Debt Administration

Long-term debt for the years ended June 30, 2007 and 2006 was as follows (in thousands):

	June 30, 2007	June 30, 2006	Change
Bonds payable:			
1995 Serial bonds	$ 73,725	88,735	(15,010)
1995 Term bonds	152,900	152,900	—
1995 Periodic Auction Reset Bonds	18,100	18,100	—
1995 Inverse Floating Rate Bonds	18,100	18,100	—
2001 Series A Commonwealth Appropriation bonds	35,280	35,280	—
2001 Series B Commonwealth Appropriation bonds	6,250	13,570	(7,320)
2001 Series C and E Commonwealth Appropriation bonds	400,911	402,754	(1,843)
2004 Series A and B Commonwealth Appropriation bonc	647,167	648,057	(890)
Rural Development Serial Bonds	204,706	208,623	(3,917)
Add premium on bonds refunding	41,441	43,149	(1,708)
Less deferred loss from refunding	(80,759)	(84,953)	4,194
Total bonds	1,517,821	1,544,315	(26,494)
Bond anticipation notes:			
Series 2007 B	850,000	—	850,000
Notes payable:			
Water Pollution Control and Drinking Water Treatment Revolving Funds Loans	229,173	188,055	41,118
Notes with commercial banks	250,000	—	250,000
Total notes	479,173	188,055	291,118
Lines of credit	139,524	725,152	(585,628)
Long-term debt outstanding	2,986,518	2,457,522	528,996
Other long-term liabilities:			
Accrued compensated absences	56,876	52,304	4,572
Early retirement obligation	9,675	9,675	—
Customers' deposits	69,024	70,703	(1,679)
Total other liabilities	135,575	132,682	2,893
Total long-term obligations	3,122,093	2,590,204	$ 531,889
Current portion	138,807	73,984	
Long-term obligations, less current portion	$ 2,983,286	2,516,220	

(Continued)

The Authority's long-term debt increased by $531.9 million from $2,590.2 million as of June 30, 2006 to $3,122.1 million as of June 30, 2007.

Bonds outstanding as of June 30, 2007 decreased by $26.5 million, which decrease resulted from payment of principal on outstanding bonds of approximately $29 million, and the amortization of the premium and the deferred refunding loss of approximately $2.5 million.

The Authority finances the cost of design and construction of certain capital improvements projects with notes from the Puerto Rico Water Pollution Control Revolving Fund and the Puerto Rico Safe Drinking Water Treatment Revolving Loan Fund programs that bear interest at 2%. As of June 30, 2007, the Authority's loans outstanding under these programs amounted to $229.2 million. These loans increased $41.1 million due to the net effect of drawings of $49.2 million for payment of capital improvements and payment of principal on loans outstanding of $8.1 million.

On September 8, 2006, the Authority entered into a term loan agreement with various commercial banks amounting to $250 million to repay various lines of credit with GDB and to pay the costs associated with the loan.

The Authority obtained lines of credit with GDB to finance capital improvements and operational expenses. Lines of credit with GDB decreased by $585.6 million due to the net effect of drawings from those lines of approximately $237.8 million and repayments of $823.4 million.

On December 2006 and January 2007 the Authority issued $619.9 million and $50 million of Series 2006A and Series 2007A Bond Anticipation Notes, respectively. The proceeds were used to repay various lines of credit with GDB, fees associated with the bond anticipation notes, and to finance capital improvement projects.

On May 24, 2007, the Authority issued $850 million of Series 2007B Bond Anticipation Notes. The proceeds were used for the purpose of refunding the Bond Anticipation Notes Series 2006A and 2007A and paying the costs of various capital improvements of the Authority.

The Authority has been developing financial models for the purpose of issuing new revenue bonds, and during December 2007, management met with Standard & Poor's, Moody's Investors Service, and Fitch Ratings with the objective of obtaining a bond rating for the Authority.

Detailed information regarding long-term debt activity is included in notes 9 through 14 to the basic financial statements.

(Continued)

Summary of Revenues, Expenses, and Changes in Net Assets

The following table provides a summary of the Authority's changes in net assets for the years ended June 30, 2007 and 2006 (in thousands):

	Years ended June 30,		
	2007	**2006**	**Change**
Operating revenue:			
Revenues from water and sewer, net	$ 755,538	503,203	252,335
Operating expenses:			
Payroll and payroll related expenses	307,575	288,684	18,891
Service contract – Superaqueduct	20,602	22,401	(1,799)
Professional and consulting services	19,867	33,818	(13,951)
Chemicals	27,234	23,769	3,465
Materials and replacements	13,678	8,560	5,118
Repairs and maintenance of capital assets	28,058	18,913	9,145
Electricity	103,944	108,563	(4,619)
Insurance	9,640	8,899	741
Other operating expenses	58,421	56,279	2,142
Operating expenses (excluding depreciation and amortization)	589,019	569,886	19,133
Depreciation and amortization	135,293	153,764	(18,471)
Total operating expenses	724,312	723,650	662
Operating income (loss)	31,226	(220,447)	251,673
Nonoperating expenses, net	(85,206)	(82,564)	(2,642)
Net loss before capital contributions	(53,980)	(303,011)	249,031
Capital contributions	24,363	77,946	(53,583)
Decrease in net assets	(29,617)	(225,065)	195,448
Net assets, beginning of year	2,267,601	2,492,666	(225,065)
Net assets, end of year	$ 2,237,984	2,267,601	(29,617)

(Continued)

The following table provides a summary of the Authority's changes in net assets for the years ended June 30, 2006 and 2005 (in thousands):

	Years ended 30,		
	2006	**2005**	**Change**
Operating revenue:			
Revenues from water and sewer, net	$ 503,203	313,819	189,384
Operating expenses:			
Payroll and payroll related expenses	288,684	276,181	12,503
Service contract – Superaqueduct	22,401	16,682	5,719
Professional and consulting services	33,818	47,843	(14,025)
Chemicals	23,769	20,830	2,939
Materials and replacements	8,560	13,603	(5,043)
Repairs and maintenance of capital assets	18,913	21,298	(2,385)
Electricity	108,563	85,465	23,098
Insurance	8,899	10,745	(1,846)
Other operating expenses	56,279	50,428	5,851
Operating expenses (excluding depreciation and amortization)	569,886	543,075	26,811
Depreciation and amortization	153,764	148,262	5,502
Total operating expenses	723,650	691,337	32,313
Operating loss	(220,447)	(377,518)	157,071
Nonoperating revenue (expenses), net	(82,564)	72,927	(155,491)
Net loss before capital contributions	(303,011)	(304,591)	1,580
Capital contributions	77,946	178,745	(100,799)
Decrease in net assets	(225,065)	(125,846)	(99,219)
Net assets, beginning of year	2,492,666	2,618,512	(125,846)
Net assets, end of year	$ 2,267,601	2,492,666	(225,065)

June 30, 2007 and 2006

Net assets decreased by $29.6 million, from $2,267.6 million in 2006 to $2,238.0 million in 2007 due to the results of current year operations.

(Continued)

Major fluctuations that resulted in the net reduction in net assets are broken down as follows (in thousands):

Increase in operating revenues	$	252,335
Increase in operating expenses		(662)
Increase in nonoperating expenses, net		(2,642)
Decrease in capital contributions		(53,583)
Net change	$	195,448

Operating revenues increased as a result of an increase in water and sewer rates that took place during the fiscal year ended June 30, 2007.

Operating expenses increased by $662 thousand primarily due to the net effect of the following:

- An increase in payroll and related expenses of $18.9 million.
- An increase of $9.1 million in repairs and maintenance of capital assets.
- An increase in materials and replacements of $5.1 million.
- A decrease of $18.5 million in depreciation and amortization due to certain equipment and other capital assets that were fully depreciated as of June 30, 2006.
- A decrease in professional and consulting services expense of $14.0 million.

Service Contract – Superaqueduct expenses pertain to a contract signed with Thames-Dick for the operation and maintenance of the North Coast aqueduct (Superaqueduct).

Nonoperating expenses, net decreased by $2.6 million when compared with the previous year. This is primarily due to the following:

- An increase in interest expense of $34.1 million.
- An increase of $27.9 million in subsidies provided by the Commonwealth for the payment of interest on bonds and notes.
- An increase in interest income of $4.5 million.

Capital contributions decreased by $53.6 million. This decrease is primarily the net effect of the following:

- Contributions from the Commonwealth and PRIFA for capital projects decreased by $40.9 million.
- Capital assets donated by PRIFA decreased by $15.4 million.
- Federal grants and other contributions increased by $2.0 million.

June 30, 2006 and 2005

Net assets decreased by $225.1 million, from $2,492.7 million in 2005 to $2,267.6 million in 2006. This represents a net reduction of $99.2 million when compared with the change in net assets for fiscal year 2005.

(Continued)

Major fluctuations that resulted in the net reduction in net assets are broken down as follows (in thousands):

Increase in operating revenues	$	189,384
Increase in operating expenses		(32,313)
Increase in nonoperating revenue(expenses), net		(155,491)
Decrease in capital contributions		(100,799)
Net change	$	(99,219)

Operating revenues increased as a result of an increase in water and sewer rates that took place during the year ended June 30, 2006.

Operating expenses increased by $32.3 million primarily due to the following:

- An increase in electricity expenses of $23.1 million.
- An increase in payroll and related expenses of $12.5 million.
- A nonrecurring adjustment of $10.2 million to revalue capital assets based on an inventory and valuation study performed over the Authority's capital assets during fiscal year 2006.
- An increase of $5.7 million in Service Contract-Superaqueduct expenses, which pertain to a contract signed with Thames Dick for the operation and maintenance of the Superaqueduct.
- An increase of $5.5 million in depreciation and amortization due to projects completed by the Authority and transferred to plant in service.
- A decrease in professional and consulting services expense of $14.0 million.

Nonoperating revenue (expenses), net decreased by $155.5 million when compared with the previous year. This is primarily due to the following:

- An increase in interest expense of $33.9 million.
- Contributions from the Commonwealth for the payment of principal on certain of the Authority's bonds and notes decreased by $51.7 million.
- A decrease of $39.1 million in subsidies provided by the Commonwealth for the payment of interest on bonds and notes.
- The operating subsidy to the Authority decreased by $34.6 million due to its elimination by the Commonwealth.

(Continued)

Capital contributions decreased by $100.8 million. This decrease is primarily the net effect of the following:

- Capital assets donated by PRIFA decreased by $78.3 million.
- Contributions from the Commonwealth and PRIFA for capital projects decreased by $20.4 million.

Contacting the Authority's Financial Management

This financial report is designed to provide the Authority's customers and creditors and other interested persons with a general overview of its finances and to demonstrate the Authority's accountability for the funds it receives. If you have questions about this report, or need additional financial information, contact the Director of Finance and Administration at 604 Barbosa Avenue, Suite 406, San Juan, Puerto Rico 00917-4310 or 787-620-3791.

PUERTO RICO AQUEDUCT AND SEWER AUTHORITY
(A Component Unit of the Commonwealth of Puerto Rico)

Balance Sheets

June 30, 2007 and 2006

(In thousands)

Assets		2007	2006
Current assets:			
Cash and cash equivalents	$	45,934	72,619
Accounts receivable, net		189,605	122,244
Receivables from federal agency		6,104	10,661
Materials and supplies inventory		16,912	13,745
Prepayments and other current assets		742	1,905
Total current assets		259,297	221,174
Noncurrent assets:			
Restricted assets:			
Cash and cash equivalents		157,507	32,746
Total restricted assets		157,507	32,746
Capital assets:			
Capital assets being depreciated		6,421,760	6,349,502
Accumulated depreciation and amortization		(2,213,899)	(2,078,606)
		4,207,861	4,270,896
Land		50,999	43,131
Construction in progress		988,908	615,786
Total capital assets, net		5,247,768	4,929,813
Other assets:			
Deferred debt issuance cost, net of accumulated amortization of $6,258 and $4,568 for 2007 and 2006, respectively		29,136	28,738
Total assets	$	5,693,708	5,212,471

(Continued)

PUERTO RICO AQUEDUCT AND SEWER AUTHORITY
(A Component Unit of the Commonwealth of Puerto Rico)

Balance Sheets

June 30, 2007 and 2006

(In thousands)

Liabilities and Net Assets	2007	2006
Current liabilities:		
Bonds payable	$ 35,911	26,491
Notes payable	9,027	7,859
Lines of credit	76,054	20,811
Accounts payable	169,387	184,155
Accrued liabilities	131,752	118,289
Accrued interest	10,591	31,146
Unearned revenue	21,901	21,076
Customers' deposits	5,429	5,974
Accrued compensated absences and early retirement obligation	12,386	12,849
Total current liabilities	472,438	428,650
Noncurrent liabilities:		
Bonds payable	1,481,910	1,517,824
Bond anticipation notes	850,000	—
Notes payable	470,146	180,196
Lines of credit	63,470	704,341
Customers' deposits	63,595	64,729
Accrued compensated absences, sick leave, and early retirement obligation	54,165	49,130
Total noncurrent liabilities	2,983,286	2,516,220
Total liabilities	3,455,724	2,944,870
Net assets:		
Invested in capital assets, net of related debt	2,987,685	3,010,266
Restricted for environmental compliance, capital activity, and other	19,284	8,794
Unrestricted	(768,985)	(751,459)
Total net assets	2,237,984	2,267,601
Total net assets and liabilities	$ 5,693,708	5,212,471

See accompanying notes to basic financial statements.

PUERTO RICO AQUEDUCT AND SEWER AUTHORITY
(A Component Unit of the Commonwealth of Puerto Rico)

Statements of Revenues, Expenses, and Changes in Net Assets

Years ended June 30, 2007 and 2006

(In thousands)

	2007	2006
Operating revenue:		
Water	$ 492,342	330,443
Sewer	263,196	172,760
Total net operating revenue	755,538	503,203
Operating expenses:		
Payroll and payroll related	307,575	288,684
Service contract – Superaqueduct	20,602	22,401
Professional and consulting services	19,867	33,818
Chemicals	27,234	23,769
Materials and replacements	13,678	8,560
Repairs and maintenance of capital assets	28,058	18,913
Electricity	103,944	108,563
Insurance	9,640	8,899
Other operating expenses	58,421	56,279
Operating expenses (excluding depreciation and amortization)	589,019	569,886
Depreciation and amortization	135,293	153,764
Total operating expenses	724,312	723,650
Operating income (loss)	31,226	(220,447)
Nonoperating revenue and expenses:		
Interest expense, net of amortization of debt issuance cost, bond premium and discount, and deferred refunding loss	(141,215)	(107,129)
Commonwealth contributions for principal payments on bonds and notes	2,733	3,198
Commonwealth contributions for interest payments on bonds and notes	40,414	12,517
Interest income	7,650	3,180
Other income	5,212	5,670
	(85,206)	(82,564)
Loss before capital contributions	(53,980)	(303,011)
Capital contributions:		
Commonwealth and PRIFA contributions for capital projects, net	501	41,410
Capital assets donated by PRIFA	—	15,367
Federal grants and other contributions	23,162	21,169
Other Commonwealth contributions	700	—
Total capital contributions	24,363	77,946
Change in net assets	(29,617)	(225,065)
Net assets at beginning of year	2,267,601	2,492,666
Net assets at end of year	$ 2,237,984	2,267,601

See accompanying notes to basic financial statements.

PUERTO RICO AQUEDUCT AND SEWER AUTHORITY
(A Component Unit of the Commonwealth of Puerto Rico)

Statements of Cash Flows

Years ended June 30, 2007 and 2006

(In thousands)

	2007	2006
Cash flows from operating activities:		
Cash received from customers	$ 687,323	423,612
Cash paid to suppliers	(280,196)	(210,683)
Cash paid to employees	(303,003)	(287,893)
Net cash provided by (used in) operating activities	104,124	(74,964)
Cash flows from noncapital financing activities:		
Proceeds from notes payable	250,000	—
Proceeds from borrowings from lines of credit	35,221	261,271
Proceeds from bond anticipation notes	684,492	—
Payment of bond anticipation notes	(342,246)	—
Payment of lines of credit	(530,123)	—
Net cash from other income	5,212	4,706
Interest paid on notes and lines of credit	(42,647)	—
Net cash provided by noncapital financing activities	59,909	265,977
Cash flows from capital and related financing activities:		
Additions to utility plant and other capital assets	(453,248)	(393,442)
Proceeds from capital contributions	24,363	62,579
Proceeds from borrowings from lines of credit	202,529	156,668
Proceeds from issuance of notes payable	49,179	42,352
Proceeds from bond anticipation notes	835,428	—
Payment of lines of credit	(293,255)	—
Payments of bonds and notes	(34,308)	(37,297)
Payment of bond anticipation notes	(327,674)	—
Debt issue costs paid	(2,088)	—
Interest paid on bonds, notes and lines of credit	(74,533)	(70,911)
Net cash used in capital financing activities	(73,607)	(240,051)
Cash flows from investing activities:		
Interest received on investments	7,650	3,180
Net cash provided by investing activities	7,650	3,180
Net increase (decrease) in cash and cash equivalents	98,076	(45,858)
Cash and cash equivalents at beginning of year	105,365	151,223
Cash and cash equivalents at end of year	$ 203,441	105,365
For purposes of the statement of cash flows, cash and cash equivalents include:		
Unrestricted	$ 45,934	72,619
Restricted	157,507	32,746
	$ 203,441	105,365

(Continued)

PUERTO RICO AQUEDUCT AND SEWER AUTHORITY
(A Component Unit of the Commonwealth of Puerto Rico)

Statements of Cash Flows

Years ended June 30, 2007 and 2006

(In thousands)

	2007	2006
Reconciliation of operating income (loss) to cash used in operating activities:		
Operating income (loss)	$ 31,226	(220,447)
Adjustments to reconcile operating income (loss) to net cash provided by (used in) operating activities:		
Revaluation of capital assets	—	10,198
Depreciation and amortization	135,293	153,764
Revenue reduced for uncollectible accounts	40,617	34,928
Change in assets and liabilities:		
Increase in accounts receivable	(107,978)	(106,620)
(Increase) decrease in receivables from federal agencies	4,557	(6,480)
Increase in materials and supplies inventory	(3,167)	(999)
(Increase) decrease in prepayments and other current assets	1,163	(1,824)
Increase (decrease) in accounts payable	(14,768)	100,663
Increase (decrease) in unearned revenue	825	(12,154)
Increase in accrued compensated absences and early retirement obligation	4,572	791
Increase (decrease) in accrued liabilities	13,463	(31,039)
Increase (decrease) in customers' deposits	(1,679)	4,255
Total adjustments	72,898	145,483
Net cash provided by (used in) operating activities	$ 104,124	(74,964)
Noncash capital and related financing activities:		
Capital assets donated by PRIFA	$ —	15,367
Interest paid from borrowing of a line of credit	—	3,343
Principal on bonds and notes paid by the Commonwealth	2,733	3,198
Interest paid by the Commonwealth	40,414	12,517
Amortization of debt issuance cost	1,690	1,333
Amortization of bond premium	(1,708)	(3,184)
Amortization of deferred refunding losses	4,194	5,671
Total noncash capital and related financing activities	$ 47,323	38,245

See accompanying notes to basic financial statements.

(1) Reporting Entity and Summary of Significant Accounting Policies

Puerto Rico Aqueduct and Sewer Authority (the Authority) is a component unit of the Commonwealth of Puerto Rico (the Commonwealth). The Authority was created in 1945 under Act No. 40 (the Act), as amended and reenacted, for the purpose of owning, operating, and developing all of the public aqueduct and sewer systems in Puerto Rico. The Authority provides water and wastewater services to the Commonwealth, businesses, and residents of Puerto Rico. As a public corporation and an instrumentality of the Commonwealth, the Authority is exempt from the payment of income, property, and municipal taxes. Under the terms of the Act, the Authority has broad powers, including, among others, to borrow money and issue revenue bonds for any of its corporate purposes. The Authority receives grants from various agencies of the federal government of the United States of America (the Federal Government), and donations in-kind or in cash from developers and various governmental agencies and instrumentalities of the Commonwealth, in addition to its funds derived from operating its water and wastewater systems.

(a) Summary of Significant Accounting Policies

The accounting and reporting policies of the Authority conform to the accounting rules prescribed by the Governmental Accounting Standards Board (GASB). Under GASB Statement No. 20, *Accounting and Financial Reporting for Proprietary Funds and Other Governmental Entities That Use Proprietary Fund Accounting*, the Authority has elected not to apply Financial Accounting Standards Board pronouncements issued after November 30, 1989. The Authority functions as an enterprise fund and maintains its accounting records on the accrual basis of accounting in conformity with U.S. generally accepted accounting principles. The following describes the most significant accounting policies followed by the Authority.

(b) Measurement Focus and Basis of Accounting

The Authority's operations are accounted for on a flow of economic resources measurement focus, using the accrual basis of accounting. Under this method, all assets and liabilities associated with operations are included on the balance sheet, and revenues are recorded when earned and expenses are recorded at the time liabilities are incurred.

Revenues are recorded when utility services are provided to customers. All customers are billed on a monthly basis. The Authority recognizes revenue on unbilled utility services based on estimated consumption.

The Authority distinguishes operating revenues and expenses from nonoperating items. Operating revenues and expenses generally result from providing services and producing and delivering goods in connection with the Authority's principal ongoing operations. The principal operating revenues of the Authority are charges to customers for water and sewer related sales and services. Operating expenses of the Authority include the cost of sales and services, administrative expenses, and depreciation on capital assets. All revenues and expenses not meeting this definition are reported as nonoperating revenues and expenses.

When both restricted and unrestricted resources are available for use, it is the Authority's policy to use restricted resources first, then unrestricted resources as they are needed.

(Continued)

(c) Cash and Cash Equivalents

Cash equivalents include all highly liquid debt instruments with maturities of three months or less at the time of acquisition. If such instruments are included in restricted assets they are considered cash equivalents for purposes of the statements of cash flows.

(d) Restricted Assets

Funds set aside for construction are classified as restricted assets since their use is limited for these purposes by the applicable agreements.

(e) Receivables

Receivables are stated net of estimated allowances for uncollectible accounts, which allowances are determined based upon past collection experience and current economic conditions, among other factors.

(f) Materials and Supplies Inventory

Materials and supplies inventory are stated at average cost, not to exceed market.

(g) Unamortized Debt Issuance Costs, Premiums, Discounts, and Deferred Refunding Losses

Debt issuance costs, premiums, and discounts are deferred and amortized to expense over the life of the related debt using the straight-line method which approximates the interest rate method.

The excess of reacquisition costs over the carrying value of refunded long-term debt is deferred and amortized to expense using the straight-line method over the remaining life of the original debt, or the life of the new debt, whichever is shorter.

Bonds payable are reported net of applicable bond premium or discount and deferred refunding loss. Unamortized debt issuance costs are reported as an asset on the balance sheets.

(h) Capital Assets

The Authority defines capital assets as tangible assets used in the Authority's operations, with a useful live longer than a year, not for sale and with individual cost of over $100 for hardware and software and over $500 for other capital assets.

Utility plant is carried at cost, which includes capitalized labor, materials, administrative costs, and interest on debt financed construction. Interest capitalized by the Authority for the years ended June 30, 2007 and 2006 amounted to $5.4 million and $6.1 million, respectively.

Recurring maintenance and repair costs are charged to expense, whereas major repairs, improvements, and replacements are capitalized. When capital assets are disposed, the cost and applicable accumulated depreciation are removed from the respective accounts, and the resulting gain or loss is recorded in operations.

All utility plant and other capital assets are recorded at historical cost or estimated historical cost.

(Continued)

Depreciation is provided using the straight-line method over an estimated useful lives of the assets as follows:

Description	Useful life
Wells, tanks, and meters	Forty-eight (48) years
Equipment and vehicles	Five (5) years
Furniture and fixtures	Ten (10) years
Water and sewer plants, tanks, and pump stations	Forty-eight (48) years
Buried infrastructure	Forty-eight (48) years
Dams	Range from fifty (50) to one hundred (100) years
Buildings	Range from twenty (20) to fifty (50) years

Construction in progress represents the accumulated cost of various construction projects. If construction plans are abandoned, such costs are expensed.

(i) Unearned Revenue

Unearned revenue arises from advances received from the Commonwealth and other governmental agencies in accordance with a consumption schedule for water and sewer services. Unearned revenue also arises from water and sewer services paid by commercial and residential customers over periodic billings that are adjusted.

(j) Accounting for Compensated Absences

Employees earn vacation and sick leave based on a prescribed formula. The amount of vacation and sick pay earned and not used by the Authority's employees is accrued as a liability as the benefits are earned by the employees and the employees' rights to receive compensation are attributable to services already rendered and it is probable that the Authority will compensate the employees for the benefits through paid time off or some other means, such as cash payments at termination or retirement. Accrued compensated absences include payroll related expenses.

(k) Postemployment Health Benefits

The Authority provides certain healthcare benefits for retired employees. Substantially all of the Authority's employees may become eligible for these benefits if they meet the required years of service working for the Authority.

The Authority has the obligation to contribute $125 monthly per retired employee under the medical plan. The contribution for postretirement healthcare benefits is expensed when paid.

The Authority maintains an Early Retirement Program established during fiscal year 2002 which provides for a monthly payment to certain retired employees to cover healthcare premiums for a maximum of $280 per month, up to the age of seventy (70) years or for a maximum of ten (10) years, whichever occurs first. The present value of future healthcare benefit contributions for these early retired employees is accrued and reported as a liability in the accompanying balance

(Continued)

sheets. As of June 30, 2007 and 2006, the accrued liability for early retirement obligation amounts to $9.7 million.

The cost of healthcare benefits paid to retired employees amounted to approximately $2.5 million and $1.9 million during 2007 and 2006, respectively.

(l) Pension Benefits

The Authority's employees participate in the Government of Puerto Rico Employees Retirement System (the Plan), a cost-sharing multiple employer plan. The Authority recognizes annual pension expense equal to its required contribution to the Plan.

(m) Net Assets

Net assets are reported in three categories:

- ***Invested in Capital Assets, Net of Related Debt*** – These consists of capital assets, net of accumulated depreciation and amortization and reduced by outstanding balances for bonds, notes, and other debt that are attributed to the acquisition, construction, or improvement of those assets. Debt pertaining to significant unspent debt proceeds is not included in the calculation of invested in capital assets, net of related debt.
- ***Restricted Net Assets*** – These result when constraints, on the use of net assets are either externally imposed by creditors, grantors, contributors, and the like, or imposed by law through constitutional provisions or enabling legislation.
- ***Unrestricted Net Assets*** – These consist of net assets, which do not meet the definition of the two preceding categories. Unrestricted net assets often are designated to indicate that management does not consider them to be available for general operations. Unrestricted net assets often have constraints on resources that are imposed by management, but can be removed or modified. At June 30, 2007 and 2006, the Authority has no assets restricted by enabling legislation.

(n) Use of Estimates

Management of the Authority has made a number of estimates and assumptions relating to the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the basic financial statements and the reported amounts of revenues and expenses during the period. Actual results could differ from those estimates.

(Continued)

(o) Future Adoption of Accounting Standards

GASB has issued the following accounting standards that the Authority has not yet adopted:

GASB Statement No.		Adoption required in fiscal year
45	Accounting and Financial Reporting by Employers for Postemployment Benefits Other Than Pensions	2008
48	Sales and Pledges of Receivables and Future Revenues and Intra-Entity Transfers of Assets and Future Revenues	2008
49	Accounting and Financial Reporting for Pollution Remediation Obligations	2009
50	Pension Disclosures—An amendment of GASB Statements No. 25 and No. 27	2008
51	Accounting and Financial Reporting for Intangible Assets	2010

The impact of these accounting standards has not yet been determined.

(p) Effects of New Pronouncements

In December 2004, GASB issued Statement No. 46*, Net Assets Restricted by Enabling Legislation- an amendment of GASB Statement No. 34,* which requires that limitations on the use of net assets imposed by enabling legislation be reported as restricted net assets. This statement clarifies that a legally enforceable enabling legislation restriction is one that a party external to a government- such as citizens, public interest groups, or the judiciary- can compel a government to honor. This statement also specifies the accounting and financial reporting requirements if new enabling legislation replaces existing enabling legislation or if legal enforceability is reevaluated. Finally, this statement requires governments to disclose the portion of total net assets that is restricted by enabling legislation. The Authority adopted the provisions of GASB statement No. 46 during the year ended June 30, 2006. The adoption of GASB statement No. 46 had no material impact on the Authority. The disclosure changes related to this statement are reflected in note 1(m).

In June 2005, GASB issued Statement No. 47, *Accounting for Termination Benefits*, which establishes accounting standards for termination benefits. More specifically, this statement requires employers to disclose a description of the termination benefit arrangement, the cost of the termination benefits (required in the period in which the employer becomes obligated if that information is not otherwise identifiable from information displayed on the face of the financial statements), and significant methods and assumptions used to determine termination benefit liabilities. The Authority adopted the provisions of GASB statement No. 47 during the year ended June 30, 2007. The adoption of GASB statement No. 47 had no material impact on the Authority.

(Continued)

(2) Deposits

The carrying amount of deposits with financial institutions of the Authority as of June 30, 2007 and 2006 consisted of the following (in thousands):

	June 30			
	2007		2006	
	Carrying amount	Bank balance	Carrying amount	Bank balance
Unrestricted deposits in commercial banks in Puerto Rico	$ 45,420	65,702	7,245	29,274
Unrestricted deposits in governmental banks:				
GDB	514	514	45,374	45,499
EDB	—	—	20,000	20,014
Restricted deposits in commercial banks in:				
Puerto Rico	115,593 #	115,592 #	150	150
United States	8,748	8,603	—	—
Restricted deposits in governmental banks:				
GDB	32,896	32,398	32,596	33,262
EDB	270	270	—	—
Total	$ 203,441	223,079	105,365	128,199

Cash and cash equivalents consist of demand deposits, interest-bearing accounts, and certificates of deposit.

Custodial Credit Risks Related to Deposits

Pursuant to the laws of Puerto Rico, the Authority's cash is required to be held only in banks designated as depository institutions of public funds by the Commonwealth's Secretary of the Treasury. The Commonwealth requires that public funds deposited in commercial banks in Puerto Rico must be fully collateralized for the amount deposited in excess of federal depository insurance. All securities pledged as collateral are held by the Secretary of the Treasury of the Commonwealth.

Custodial credit risk is the risk that, in the event of a bank failure, the Authority's deposits might not be recovered. Deposits maintained at Government Development Bank for Puerto Rico (GDB) and Economic Development Bank for Puerto Rico (EDB) are exempt from the collateral requirements established by the Commonwealth and thus represent a custodial credit risk that in the event of GDB's or EDB's failure; the Authority may not be able to recover these deposits. GDB and EDB are component units of the Commonwealth.

(Continued)

The Authority was exposed to the following custodial credit risk arising from the balance of deposits maintained in governmental and commercial banks as of June 30, 2007 and 2006 (in thousands):

	June 30	
	2007	**2006**
Uninsured and uncollateralized:		
GDB	$ 32,912	78,761
EDB	270	20,014
Commercial banks	8,603	—
	$ 41,785	98,775

(3) Accounts Receivable

Accounts receivable are primarily for water and sewer services provided to residential, industrial, commercial, and government customers, and consisted of the following at June 30 (in thousands):

	June 30	
	2007	**2006**
Water and sewer services:		
Residential, industrial, and commercial	$ 324,681	242,071
Government agencies and municipalities	54,984	34,858
	379,665	276,929
Other receivables:		
Government agencies, municipalities, and private entities	19,059	10,222
Miscellaneous	—	3,595
	19,059	13,817
Less allowance for doubtful accounts	(209,119)	(168,502)
Total	$ 189,605	122,244

(Continued)

(4) Receivables from Federal Agency

Receivables from federal agency consisted of amounts pending to be received from the U.S. Department of Homeland Security (USDHS) as of June 30, 2007 and 2006 for the following (in thousands):

	June 30	
	2007	**2006**
Reimbursement from USDHS for expenses incurred by the Authority for Jeanne storm recovery	$ 6,104	5,500
Reimbursement from USDHS for expenses incurred by the Authority to establish security features	—	5,161
	$ 6,104	10,661

(5) Materials and Supplies Inventory

As of June 30, 2007 and 2006, material and supplies inventory consisted of the basic materials needed for the operation and maintenance of the water and sewer system and for the replacement of water meters.

(Continued)

(6) Capital Assets

Utility plant and other capital assets as of June 30, 2007 and 2006 and the changes therein for the years then ended are as follows (in thousands):

	June 30, 2007			
	Beginning balance	**Increases**	**Decreases**	**Ending balance**
Capital assets not being depreciated:				
Land	$ 43,131	7,868	—	50,999
Construction in progress	615,786	457,613	(84,491)	988,908
Total capital assets not being depreciated	658,917	465,481	(84,491)	1,039,907
Capital assets being depreciated:				
Infrastructure (water and sewer facilities)	5,822,595	52,635	—	5,875,230
Wells, tanks, and meters	316,994	2,102	—	319,096
Buildings	57,216	7,215	—	64,431
Equipment, furniture, fixtures, and vehicles	152,697	10,306	—	163,003
Total capital assets being depreciated	6,349,502	72,258	—	6,421,760
Less accumulated depreciation and amortization:				
Infrastructure (water and sewer facilities)	(1,841,968)	(116,552)	—	(1,958,520)
Wells, tanks, and meters	(101,011)	(6,600)	—	(107,611)
Buildings	(21,047)	(1,211)	—	(22,258)
Equipment, furniture, fixtures, and vehicles	(114,580)	(10,930)	—	(125,510)
Total accumulated depreciation	(2,078,606)	(135,293)	—	(2,213,899)
Total capital assets being depreciated, net	4,270,896	(63,035)	—	4,207,861
	$ 4,929,813	402,446	(84,491)	5,247,768

(Continued)

	June 30, 2006				
	Beginning balance	Increases	Decreases	Adjustments	Ending balance
Capital assets not being depreciated:					
Land	$ 51,080	1,383	—	(9,332)	43,131
Construction in progress	444,223	365,388	(110,735)	(83,090)	615,786
Total capital assets not being depreciated	495,303	366,771	(110,735)	(92,422)	658,917
Capital assets being depreciated:					
Infrastructure (water and sewer facilities)	5,638,889	114,924	—	68,782	5,822,595
Wells, tanks, and meters	75,637	10,670	—	230,687	316,994
Buildings	220,332	—	—	(163,116)	57,216
Equipment, furniture, fixtures, and vehicles	124,554	28,143	—	—	152,697
Total capital assets being depreciated	6,059,412	153,737	—	136,353	6,349,502
Less accumulated depreciation and amortization:					
Infrastructure (water and sewer facilities)	(1,593,715)	(121,870)	—	(126,383)	(1,841,968)
Wells, tanks, and meters	(27,257)	(6,363)	—	(67,391)	(101,011)
Buildings	(159,650)	(1,042)	—	139,645	(21,047)
Equipment, furniture, fixtures, and vehicles	(90,091)	(24,489)	—	—	(114,580)
Total accumulated depreciation	(1,870,713)	(153,764)	—	(54,129)	(2,078,606)
Total capital assets being depreciated, net	4,188,699	(27)	—	82,224	4,270,896
	$ 4,684,002	366,744	(110,735)	(10,198)	4,929,813

During fiscal year 2006, the Authority recorded a nonrecurring charge of approximately $10.2 million to reclassify and adjust the cost and accumulated depreciation of capital assets. The adjustment resulted from a physical inventory and valuation study. The nonrecurring charge was recorded as a component of other operating expenses in the accompanying statement of revenues, expenses, and changes in net assets.

(7) Restricted Assets

As of June 30, 2007 and 2006, restricted assets with a book balance of $157.5 million and $32.7 million, respectively, consisted of cash and cash equivalents including nonnegotiable certificates of deposit with maturities of one month or less.

(Continued)

(8) Accrued Liabilities

Accrued liabilities as of June 30, 2007 and 2006 consisted of the following (in thousands):

	June 30	
	2007	2006
Payroll and related accruals	$ 40,631	30,445
Legal and environmental liabilities	60,130	64,492
Contract retentions	30,991	23,352
	$ 131,752	118,289

(9) Long-Term Liabilities

Long-term debt activity for the years ended June 30, 2007 and 2006 was as follows (in thousands):

	June 30, 2007					
	Beginning balance	Additions/ amortization	Reductions	Ending balance	Due within one year	Due thereafter
Bonds payable:						
1995 Serial Bonds	$ 88,735	—	(15,010)	73,725	15,915	57,810
1995 Term Bonds	152,900	—	—	152,900	—	152,900
1995 Periodic Auction Reset Bonds	18,100	—	—	18,100	—	18,100
1995 Inverse Floating Rate Bonds	18,100	—	—	18,100	—	18,100
2001 Series A Commonwealth Appropriation Bonds	35,280	—	—	35,280	1,455	33,825
2001 Series B Commonwealth Appropriation Bonds	13,570	—	(7,320)	6,250	6,250	—
2001 Series C & E Commonwealth Appropriation Bonds	402,754	—	(1,843)	400,911	9,784	391,127
2004 Series A and B Commonwealth Appropriation Bonds	648,057	—	(890)	647,167	920	646,247
Rural Development Serial Bonds	208,623	—	(3,917)	204,706	4,074	200,632
Add premium on bonds refunding	43,149	—	(1,708)	41,441	3,184	38,257
Less deferred loss from refunding	(84,953)	—	4,194	(80,759)	(5,671)	(75,088)
Total bonds	1,544,315	—	(26,494)	1,517,821	35,911	1,481,910
Bond anticipation notes:						
Series 2006 A	—	619,920	(619,920)	—	—	—
Series 2007 A	—	50,000	(50,000)	—	—	—
Series 2007 B	—	850,000	—	850,000	—	850,000
Total bond anticipation notes	—	1,519,920	(669,920)	850,000	—	850,000

(Continued)

	June 30, 2007					
	Beginning balance	Additions/ amortization	Reductions	Ending balance	Due within one year	Due thereafter
Notes payable:						
Water Pollution Control and Drinking Water Treatment Revolving Funds Loans	$ 188,055	49,179	(8,061)	229,173	9,027	220,146
Notes with commercial banks	—	250,000	—	250,000	—	250,000
Total notes	188,055	299,179	(8,061)	479,173	9,027	470,146
Lines of credit	725,152	237,749	(823,377)	139,524	76,054	63,470
Other long-term liabilities:						
Accrued compensated absences	52,304	22,559	(17,987)	56,876	10,578	46,298
Early retirement obligation	9,675	2,552	(2,552)	9,675	1,808	7,867
Customers' deposits	70,703	7,903	(9,582)	69,024	5,429	63,595
Total other liabilities	132,682	33,014	(30,121)	135,575	17,815	117,760
Total – long-term obligations	$ 2,590,204	2,089,862	(1,557,973)	3,122,093	138,807	2,983,286

(Continued)

	June 30, 2006					
	Beginning balance	**Additions/ amortization**	**Reductions**	**Ending balance**	**Due within one year**	**Due thereafter**
Bonds payable:						
1995 Serial Bonds	$ 102,890	—	(14,155)	88,735	15,010	73,725
1995 Term Bonds	152,900	—	—	152,900	—	152,900
1995 Periodic Auction Reset Bonds	18,100	—	—	18,100	—	18,100
1995 Inverse Floating Rate Bonds	18,100	—	—	18,100	—	18,100
2001 Series A Commonwealth Appropriation Bonds	35,280	—	—	35,280	—	35,280
2001 Series B Commonwealth Appropriation Bonds	20,500	—	(6,930)	13,570	7,320	6,250
2001 Series C and E Commonwealth Appropriation Bonds	405,085	—	(2,331)	402,754	1,844	400,910
2004 Series A and B Commonwealth Appropriation Bonds	648,925	—	(868)	648,057	890	647,167
Rural Development Serial Bonds	215,044	—	(6,421)	208,623	3,926	204,697
Add premium on bonds refunding	46,333	—	(3,184)	43,149	1,695	41,454
Less deferred loss from refunding	(90,624)	—	5,671	(84,953)	(4,194)	(80,759)
Total bonds	1,572,533	—	(28,218)	1,544,315	26,491	1,517,824
Notes payable:						
Water Pollution Control and Drinking Water Treatment Revolving Funds Loans	155,493	42,352	(9,790)	188,055	7,859	180,196
Lines of credit	303,870	421,282	—	725,152	20,811	704,341
Other long-term liabilities:						
Accrued compensated absences	51,339	25,120	(24,155)	52,304	11,041	41,263
Early retirement obligation	9,849	1,648	(1,822)	9,675	1,808	7,867
Customers' deposits	66,448	11,012	(6,757)	70,703	5,974	64,729
Total other liabilities	127,636	37,780	(32,734)	132,682	18,823	113,859
Total – long-term obligations	$ 2,159,532	501,414	(70,742)	2,590,204	73,984	2,516,220

(Continued)

(10) Bonds Payable

Bonds payable as of June 30, 2007 and 2006 consisted of the following (in thousands):

	June 30, 2007	June 30, 2006
Revenue refunding bonds:		
Series 1995:		
Serial bonds, 4.40% – 6.25%, due annually through July 1, 2013	$ 73,725	88,735
Term bonds, 5.00%		
$46,085 due on July 1, 2015		
$106,815, due on July 1, 2019	152,900	152,900
Periodic Auction Reset Bonds, 3.50%		
$8,800 due July 1, 2010		
$9,300 due July 1, 2011	18,100	18,100
Inverse Floating Rate Bonds, 8.22%		
$8,800 due July 1, 2010		
$9,300 due July 1, 2011	18,100	18,100
Commonwealth appropriation bonds		
Series 2001:		
Series A, 4.00% – 5.50% due in semiannual interest payments through 2011 and annual principal installments from August 1, 2007 through 2011	35,280	35,280
Series B, 4.85% – 5.50%, due in semiannual interest and annual principal payments from July 15, 2004 through 2007	6,250	13,570
Series C and E, 4.00% – 6.15% due in semiannual interest and annual principal payments from July 15, 2004 through 2029	400,911	402,754
Series 2004:		
Series A and B, 1.25% – 5.75% due in semiannual interest payments through August 1, 2031 and annual principal installments from July 15, 2004 to 2031.	647,167	648,057
Rural development serial bonds		
Serial bonds, 4.25% – 5.00%, due semiannually through July 1, 2045	204,706	208,623
Subtotal	1,557,139	1,586,119
Bond premium	41,441	43,149
Deferred amount on refundings	(80,759)	(84,953)
Total	$ 1,517,821	1,544,315

(Continued)

1995 Series Refunding Bonds

On January 12, 1995, the Authority issued $400.0 million of refunding bonds, Series 1995, guaranteed by the Commonwealth, to refund the Authority's outstanding Revenue Bonds, Series 1988A and 1988AA. The net proceeds of the Series 1995 Bonds, and other funds made available from sinking funds and investment accounts from prior bonds, were deposited in escrow accounts to provide funds sufficient to pay the principal and interest of the refunded bonds to their date of redemption.

The Authority entered into two separate escrow agreements to effect the defeasance of the prior bonds under which agreements it deposited the proceeds remaining (after payments of $5.2 million in the underwriters' discount, bond insurance premium, and other issuance costs) of $402.9 million of the Series 1995 Bonds, $37.3 million of the old bond's sinking funds and other moneys made available from the defeasance. The defeasance of the prior bonds reduced the Authority's total debt service payments over the next 24 years by almost $100.0 million, which resulted in an economic gain (net present value of the difference between the debt service payments on the old and new debt) of $46.2 million. The advance refunding resulted in a deferred accounting loss between reacquisition price and the net carrying amount of the old bonds of $40.0 million. As of June 30, 2007 and 2006, the outstanding balance of 1995 Series Bonds was $262.8 million and $277.8 million, respectively.

The 1995 Series Bonds are guaranteed by the Commonwealth, and the Authority's net revenue, as defined in the corresponding trust indenture, is pledged toward the payment of debt service on the 1995 Series Bonds. The 1995 Series Bonds are subordinated to all Senior and Senior Subordinated debt.

2001 Series A and B Bonds

Joint Resolution No. 523 (J.R. 523) of the Commonwealth, approved on August 24, 2000, authorized the Authority to restructure and refinance a line of credit with GDB in a principal amount not to exceed $390 million. The funds from the line of credit were used to finance the construction of the north coast superaqueduct project (Superaqueduct). The line of credit was restructured and refinanced through the issuance by Puerto Rico Public Finance Corporation (PFC), a component unit of GDB, on August 1, 2001, of $356.7 million of Series A Bonds at a premium of $2.3 million and $33.3 million of Series B Bonds. The net proceeds of the 2001 Series A and B Bonds of $381.1 million, after payment of the cost of issuance of $9.6 million and $1.6 million, set aside to cover capitalized interest, were used by PFC to purchase the outstanding promissory note of the Authority from GDB.

The Authority's 2001 Series A and B Bonds are secured by promissory note payments made by the Commonwealth to PFC pursuant to a Debt Restructuring and Assignment Agreement, dated August 1, 2001, between the Authority and PFC. In accordance with J.R. 523, such payments shall be funded by Commonwealth appropriations approved annually up to a maximum of $34.9 million per fiscal year for a term of 30 years ending in fiscal year 2031-2032. The Commonwealth is not legally bound to appropriate funds for such promissory payments. Payments of principal and interest on the bonds are due on or before July 15 of each fiscal year, commencing July 15, 2004.

On June 28, 2004, $321.4 million of the Authority's share of the 2001 Series A and B Bonds was advanced refunded upon the issuance by PFC of its 2004 Series A and B Refunding Bonds (discussed below). As of June 30, 2007 and 2006, the outstanding unrefunded balance of the 2001 Series A Bonds was

(Continued)

$35.3 million, respectively, and the outstanding balance of the 2001 Series B Bonds was $6.3 million and $13.6 million, respectively.

2001 Series C and E Bonds

On December 17, 2001, Act No. 164 (Act 164) of the Commonwealth authorized departments, agencies, instrumentalities, and public corporations of the Commonwealth including the Authority, to restructure their outstanding obligations with GDB, for which no repayment source existed, over a period not exceeding 30 years.

Pursuant to Act 164, on January 16, 2002, PFC issued $771.3 million of Series C Bonds, $40.7 million of Series D Bonds, and $1,091.0 million of Series E Bonds, for the purpose of funding the purchase by PFC of certain promissory notes held by GDB. The Authority's then outstanding debt with GDB of $609.2 million was restructured with proceeds of $712.1 million from these issuances, which included capitalized interest and issuance cost and its note evidencing this debt was purchased by PFC from GDB.

The 2001 Series C and E Bonds are secured by promissory note payments made by the Commonwealth to PFC pursuant to a Debt Restructuring and Assignment Agreements dated July 1, 2001, between the debtors, including the Authority, and PFC. In accordance with Act 164, such payments shall be funded by Commonwealth appropriations approved annually up to a maximum of $225 million per fiscal year for a term of 30 years. The Commonwealth is not legally bound to appropriate funds for such promissory notes payments. Payments of principal and interest on bonds are due on or before July 15 of each fiscal year, commencing July 15, 2004.

On June 28, 2004, $293.2 million of the Authority's share of the 2001 Series C and E Bonds was advanced refunded through the issuance by PFC of its 2004 Series A and B Refunding Bonds (discussed below). As of June 30, 2007 and 2006, the outstanding unrefunded balance of the 2001 Series C and E Bonds was $400.9 million and $402.8 million, respectively.

2004 Series A and B Refunding Bonds

On June 28, 2004, PFC issued $1,206.1 million of Series A Refunding Bonds at a premium of $89.4 million, and $146.9 million of Series B Refunding Bonds, for the purpose of refunding a portion of certain of its outstanding bonds.

The net proceeds from the 2004 Series A and B Revenue Bonds amounting to $1,395.0 million, after payment of the cost of issuance and bond premium of $47.4 million, were used to advance refund a portion of PFC's previously issued bonds in order to obtain lower interest rates. A portion totaling $614.6 million of the outstanding debt from the 2001 Series A, B, C, and E Bonds were advance refunded through this issuance. This refunding resulted in the Authority's recognition of net debt issuance cost of $11.7 million, a net premium of $44.4 million, and deferred refunding loss of $67.2 million, all of it being amortized over the term of the new debt, which is through 2031.

The 2004 Series A and B Bonds are secured by promissory note payments made by the Commonwealth to PFC pursuant to Supplemental Debt Restructuring and Assignment Agreements, between the debtors, including the Authority, and PFC. In accordance with various Appropriation Acts, principal and interest

(Continued)

payments on such notes shall be funded by Commonwealth appropriations approved annually for the number of fiscal years specified in such Appropriation Acts. The Commonwealth is not legally bound to appropriate funds for such repayments. Until the fiscal year beginning July 1, 2005, the Authority's promissory note payments were made by Commonwealth appropriations authorized by J.R. 523 and Act 164. Payments of principal and interest on bonds are due on or before July 15 of each fiscal year. The outstanding balance of the 2004 Series A and B Refunding Bonds as of June 30, 2007 and 2006 was $647.2 million and $648.1 million, respectively.

Rural Development Serial Bonds

U.S. Department of Agriculture (USDA), Rural Development Program assists the Authority in the financing and construction of aqueduct and sewer facilities in rural areas by purchasing revenue bonds from the Authority, the proceeds of which are used by the Authority to finance such projects. GDB provides interim financing for these projects through short-term lines of credit. At the time these lines of credit mature, the Authority issues revenue bonds in favor of the USDA Rural Development Program for the purpose of repaying these lines and providing funds for additional capital costs incurred. As of June 30, 2007, the USDA Rural Development Program Serial Bonds consisted of twenty one (21) separate series, issued from 1983 through 2006, bearing interest from 4.25% to 5.00% due in semiannual installments through 2045. All the USDA Rural Development Program Serial B Bonds issued are guaranteed by the Commonwealth pursuant to Law No. 140 of 2000. The outstanding balance of the USDA Rural Development Program Serial Bonds as of June 30, 2007 and 2006 was $204.7 million and $208.6 million, respectively.

The USDA Rural Development Program Serial Bonds are guaranteed by the Commonwealth, and the Authority's net revenue is pledged toward the payment of debt service on the USDA Rural Development Program Serial Bonds. The USDA Rural Development Program Serial Bonds are subordinated to all Senior and Senior Subordinated debt.

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Debt Service Payments

Future principal and interest payments on all bonds payable outstanding at June 30, 2007 are as follows (in thousands):

	Principal	Interest	Total
Fiscal year:			
2008	$ 38,398	82,785	121,183
2009	40,200	80,949	121,149
2010	41,068	76,828	117,896
2011	40,989	78,700	119,689
2012	43,724	75,260	118,984
2013 – 2017	243,008	293,330	536,338
2018 – 2022	292,027	214,219	506,246
2023 – 2027	298,003	148,936	446,939
2028 – 2032	450,972	55,668	506,640
2033 – 2037	33,973	11,550	45,523
2038 – 2042	27,522	4,505	32,027
2043 – 2046	7,255	407	7,662
Total	1,557,139	1,123,137	2,680,276
Plus unamortized premium	41,441		
Less deferred loss on debt refunding	(80,759)		
Bonds payable, net	$ 1,517,821		

(11) Bond Anticipation Notes

On December 27, 2006 and January 22, 2007, the Authority issued $619.9 million and $50 million of Series 2006A and Series 2007A Bond Anticipation Notes, respectively. The proceeds were used to repay various lines of credit with GDB, fees associated with the bond anticipation notes, and to finance capital improvement projects.

On May 24, 2007, the Authority issued $850 million of Series 2007B Bond Anticipation Notes. The proceeds were used for the purpose of refunding the Series 2006A and 2007A Bond Anticipation Notes and paying the costs of various capital improvements of the Authority. The bond anticipation notes bear interest at the Securities Industry and Financial Markets Association (SIFMA) municipal swap index plus 80 basis points (4.53% as of June 30, 2007) payable monthly commencing in July 2007. The bond anticipation notes are due on December 27, 2008. The net revenue of the Authority, as defined in the Master Trust Indenture, is pledged toward the payment of debt service on the Series 2007B Bond Anticipation Notes which are considered Senior debt.

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(12) Notes Payable

As of June 30, 2007 and 2006, notes payable consisted of the following (in thousands):

	June 30	
	2007	2006
Puerto Rico Water Pollution Control Revolving Fund	$ 155,925	139,272
Puerto Rico Safe Drinking Water Treatment Revolving Loan Fund	73,248	48,783
Notes with Commercial Banks	250,000	—
	$ 479,173	188,055

The Puerto Rico Water Pollution Control Revolving Fund and Puerto Rico Safe Drinking Water Treatment Revolving Loan Fund (the Revolving Funds) were created by Act. No. 44 of June 21, 1988 and Act No. 32 of July 7, 1997, respectively, of the Commonwealth. The Puerto Rico Water Pollution Control Revolving Fund is administered, pursuant to Act No. 44 and Act No. 9 of June 21, 1988 and June 18, 1970, respectively, as amended, by the Puerto Rico Environmental Quality Board (EQB). The Puerto Rico Safe Drinking Water Treatment Revolving Loan Fund is administered, pursuant to Act No. 5 of July 21, 1977, as amended, by Puerto Rico Department of Health (DOH).

Pursuant to these laws, DOH and EQB, on behalf of the Commonwealth, are authorized to enter into operating agreements and capitalization grant agreements with the U.S. Environmental Protection Agency (EPA). Puerto Rico Infrastructure Financing Authority (PRIFA), the Authority, and GDB entered into a memorandum of understanding under which each party has agreed to assume specific responsibilities in connection with the operations of the Revolving Funds.

The Authority has entered into revolving loan agreements with PRIFA to finance certain capital improvements to the sewer system. As of June 30, 2007 and 2006, the Authority had outstanding $229.2 million and $188.1 million, respectively, under these loan agreements.

The PRIFA loan agreements are evidenced by promissory notes, which bear interest at a 2% annual rate payable semiannually. Construction loans are required to be paid in full within twenty years of the project's completion date. The Authority has pledged its net revenues on a basis subordinate in all respects to the Authority's bonds outstanding. If the Authority's pledged revenues are not sufficient for the payment of principal and interest, the payments are guaranteed by the Commonwealth under Act No. 45 of July 28, 1994, as amended, which obligates the Commonwealth to pay principal and interest on the notes.

On September 8, 2006, the Authority entered into a $250 million term loan agreement with various banks. The proceeds were used to repay various lines of credit with GDB and pay costs and fees associated with the term loan. The loan bears interest at LIBOR plus 1.15% (6.51% as of June 30, 2007). The loan is payable in quarterly installments commencing on September 1, 2008 and due on September 1, 2011.

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The net revenue of the Authority, as defined in the Term Loan Agreement, is pledged toward the payment of debt service on the notes with commercial banks. The notes are considered Senior Subordinated debt and are subordinated to the Series 2007B Bond Anticipation Notes.

The combined future aggregate amount of debt service for the loans under these revolving funds payable as of June 30, 2007, is as follows (in thousands):

Fiscal year	Principal	Interest	Total
2008	$ 9,027	18,826	27,853
2009	11,772	18,647	30,419
2010	12,141	18,312	30,453
2011	12,526	17,939	30,465
2012	250,940	5,758	256,698
2013 – 2017	43,487	6,343	49,830
2018 – 2022	26,255	2,650	28,905
2023 – 2027	13,624	637	14,261
	379,772	89,112	468,884
Interim construction loans:			
Puerto Rico Water Pollution Control Revolving Fund	60,293		
Puerto Rico Safe Drinking Water Treatment Revolving Loan Fund	39,108		
Total	$ 479,173		

(13) Lines of Credit

On October 19, 2000, the Authority entered into a line of credit agreement with GDB. This agreement provides the Authority with an available maximum amount of $103.9 million. On October 29, 2004, the maximum available amount was increased to $276 million to assist the Authority in financing the construction of aqueduct and sewer facilities in rural areas. As of June 30, 2007 and 2006, the Authority had an outstanding balance of $63.5 million and $39.4 million, respectively, under this line of credit agreement.

On May 21, 2004, the Authority entered into a line of credit agreement with GDB. This agreement provides the Authority with an available maximum amount of $100 million to finance certain legal claims and accrued vacations. As of June 30, 2006, the Authority had an outstanding balance of $96.2 million under this line of credit agreement. This line of credit was repaid and cancelled during fiscal year 2007 with the proceeds of the term loan dated September 8, 2006.

On October 21, 2004, the Authority entered into a line of credit agreement with GDB. This agreement provides the Authority with an available maximum amount of $325 million to be used to provide funding for the operational deficit of the Authority and urgent projects identified, and for the purchase of power generators and/or alternative projects to address the occurrence of power failures in the filtration and pump

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plants. As of June 30, 2006, the Authority had an outstanding balance of $246.7 million under this line of credit agreement. This line of credit was repaid and cancelled during fiscal year 2007 with the proceeds of the term loan dated September 8, 2006 and the 2006A Bond Anticipation Note issued on December 27, 2006.

On January 21, 2005, the Authority entered into a line of credit agreement with GDB. This agreement provides the Authority with an available maximum amount of $125 million to be used to provide funding for the capital improvements program of the Authority. As of June 30, 2006, the Authority had an outstanding balance of $125.0 million under this line of credit agreement. This line of credit was repaid and cancelled during fiscal year 2007 with the proceeds of the 2006A Bond Anticipation Note issued on December 27, 2006.

On October 27, 2005, the Authority entered into a line of credit agreement with GDB. This agreement provides the Authority with an available maximum amount of $100 million to be used to provide funding for the operational deficit of the Authority due to the discontinuance of various government subsidies. On February 14, 2006, the line of credit was increased by $28 million to provide for the payment of principal and interest of the Act 164 PFC Bonds, 2001 Series C and E, and 2004 Series A and B Commonwealth Appropriation Bonds. On June 12, 2006, the line of credit was increased by $125 million to fund the Authority's operational deficit for that fiscal year. As of June 30, 2007 and 2006, the Authority had an outstanding balance of $19.1 million and $217.8 million, respectively, under this line of credit agreement. Principal and interest on this line of credit is due in 2015. This line of credit was partially repaid with the proceeds of the 2006A Bond Anticipation Note issued on December 27, 2006.

On November 13, 2006, the Authority entered into a line of credit agreement with GDB. This agreement provides the Authority with an available maximum amount of $190 million to be used to provide funding for the capital improvement program of the Authority. Principal and interest under this line of credit is due on December 31, 2007. As of June 30, 2007, the Authority had an outstanding balance of $56.9 million under this line of credit agreement.

Future amounts required to pay principal balances at June 30, 2007 are as follows (in thousands):

Fiscal year:		
2008	$	76,054
Line of credit without fixed repayment terms		63,470
	$	139,524

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(14) Financial Covenant

The Term Loan Agreement and the Master Trust Indenture governing the notes with commercial banks and the Series 2007B Bond Anticipation Notes, respectively, contain a financial covenant requiring the maintenance of a Senior and Senior Subordinated minimum debt service coverage ratio of 1.20 to 1.00. As of June 30, 2007, the Authority is in compliance with the Senior and Senior Subordinated minimum debt service coverage ratio covenant contained in the Term Loan Agreement and Master Trust Indenture.

(15) Capital Contributions

Capital contributions for the fiscal years ended June 30, 2007 and 2006 were as follows (in thousands):

	June 30	
	2007	2006
Appropriations from Commonwealth:		
Capital projects	$ —	3,381
Other Commonwealth contributions	700	—
Contributions from PRIFA:		
Contributions for capital projects	501	38,029
Donated capital projects	—	15,367
Federal grants:		
U.S. Department of Agriculture, Rural Development Program	2,160	6,227
U.S. Department of Homeland Security	4,485	
Federal Emergency Management Agency	508	2,562
Developer contributions	15,091	12,011
Other contributions	918	369
	$ 24,363	77,946

(16) Related-Party Transactions

Operating revenues for services provided to the Commonwealth and the Commonwealth's component units amounted to approximately $106.4 million and $70.7 million during the years ended June 30, 2007 and 2006, respectively. Further, operating, administrative, and general expenses during the fiscal years ended June 30, 2007 and 2006 included approximately $103.9 million and $108.6 million, respectively, of charges from Puerto Rico Electric Power Authority (PREPA), a component unit of the Commonwealth. In addition, $6.4 million and $5.3 million of charges from PREPA were capitalized into construction in progress as overhead as of June 30, 2007 and 2006, respectively.

As of June 30, 2007 and 2006, the Authority had approximately $30.7 million and $20.5 million, respectively, of receivables from the Commonwealth and the Commonwealth component units, which were reported in accounts receivable in the accompanying basic financial statements.

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The Authority had approximately $7.8 million and $6.8 million of excess of collections over billings from the Commonwealth recorded as unearned revenue in the basic financial statements for the years ended June 30, 2007 and 2006, respectively.

PRIFA was created to provide financial and other assistance to certain public corporations of the Commonwealth, including the Authority. The Authority and PRIFA have entered into an agreement, as amended, under which PRIFA may exercise certain oversight powers to assist the Authority. The agreement provides a contractual framework for construction of water and sewer facilities, to assist the Authority in implementing the capital improvement program and to improve the operations of the water and sewer system. For the year ended June 30, 2006, PRIFA had transferred completed projects to the Authority as capital contributions amounting to $15.4 million. No completed projects were transferred by PRIFA to the Authority during the year ended June 30, 2007. Donated capital assets were recorded at their estimated fair value at the date of donation. Also, for the years ended June 30, 2007 and 2006 the Authority received contributions from PRIFA for capital projects and the "Agua para Todos" program in the amount of $0.5 million and $38.0 million, respectively, which are reported in Commonwealth and PRIFA contributions for capital projects, net line item in the accompanying basic financial statements.

Over the years, GDB, as fiscal agent and bank of the Commonwealth, had extended lines of credit to the Authority in order to finance capital improvement projects and operational deficits. As of June 30, 2007 and 2006 the Authority had an outstanding balance of $139.5 million and $725.2 million, respectively, under there lines of credit.

(17) Pension Plan

The Government of Puerto Rico Employees Retirement System (ERS) is a cost-sharing multiple-employer defined benefit pension plan sponsored by, and reported as a component unit of, the Commonwealth. All regular employees of the Authority under the age of 55 at the date of employment become members of the ERS as a consequence of their employment.

The ERS provides retirement, death, and disability benefits pursuant to Act 447, approved on May 15, 1951, as amended, which became effective on January 1, 1952. Disability retirement benefits for occupational and nonoccupational disabilities are available to members, enrolled in the plan before January 1, 2000. Benefits vest after ten years of plan participation.

The amount of the annuity shall be one and one-half percent (1.5%) of the average compensation multiplied by the number of years of creditable service up to twenty years, plus two percent (2%) of the average compensation multiplied by the number of years of creditable service in excess of twenty years. In no case shall the annuity be less than $200 per month.

Participants who have completed at least thirty years of creditable service are entitled to receive a Merit Annuity. Such participants who have not attained fifty-five years of age will receive 65% of the average compensation or if they have attained fifty-five years of age will receive 75% of the average compensation. Disability retirement benefits are available to members for occupational and nonoccupational disability. However, for nonoccupational disability a member must have at least ten years of service. No benefits are payable if participants receive a refund of their accumulated contributions.

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Commonwealth legislation requires that employees hired before April 1, 1990 contribute 5.775% of the first $550 of their monthly gross salary and 8.275% of their gross monthly salary in excess of $550. Employees hired after April 1, 1990 contribute 8.275% of their gross monthly salary. The Authority's contributions are 9.275% of gross monthly salary.

Total employer contributions during years ended June 30, 2007, 2006, and 2005 amounted to approximately $11.2 million, $10.9 million, and $11.3 million, respectively, which represented 100% of the required contributions.

On September 24, 1999, an amendment to Act No. 447 of May 15, 1951, which created the ERS, was enacted for the purpose of establishing a new pension program (System 2000). System 2000 became effective on January 1, 2000. Employees participating in the ERS as of December 31, 1999 had the option to stay in the defined benefit plan or transfer to System 2000. Employees joining the Authority on or after January 1, 2000 are only allowed to become members of System 2000.

System 2000 is a defined contribution plan, also known as a cash balance plan. Under this new plan, there is a pool of pension assets, which are invested by the ERS, together with those of the current defined benefit plan. Benefits at retirement age are not guaranteed by the Commonwealth. The annuity is based on a formula, which assumes that each year the employee's contribution (with a minimum of 8.275% of the employee's salary up to a maximum of 10%) is invested in an account which will either: (1) earn a fixed rate based on the two-year Constant Maturity Treasury Note, or (2) earn a rate equal to 75% of the return of the ERS' investment portfolio (net of management fees), or (3) earn a combination of both alternatives. Participants receive periodic account statements similar to those of defined contribution plans showing their accrued balances.

System 2000 reduces the retirement age from 65 years to 60 for those employees who joined the ERS on or after April 1, 1990. Disability pensions are not granted under System 2000. The employers' contributions (9.275% of the employee's salary) are used to fund the defined benefit plan.

Total employer contributions during the fiscal years ended June 30, 2007, 2006, and 2005 amounted to approximately $2.9 million, $2.4 million, and $2.2 million, respectively, which represented 100% of the required contributions.

Additional information on the ERS is provided in its financial statements for the year ended June 30, 2007, a copy of which can be obtained from the Administrator of the Retirement System: P.O. Box 42003, San Juan, Puerto Rico 00940.

(18) Labor Union Contracts

The collective bargaining agreement with the "Hermandad Independiente de Empleados Profesionales de la Autoridad de Acueductos y Alcantarillados" (HIEPAA), which covers approximately 200 professional employees, expired on June 30, 2004. A new agreement was signed effective June 1, 2005.

The collective bargaining agreement with the "Unión Independiente Auténtica" (UIA), which covers approximately some 4,500 blue-collar and clerical employees, expired on June 30, 2003. During the year ended June 30, 2005, the employees of the UIA declared a labor strike, which extended for eighty-four

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(84) days. At the conclusion of the strike, the UIA and the Authority reached an agreement as to a new labor contract. As of June 30, 2007, the contract was in the process of being formalized and signed by the parties.

(19) Agreement for Operation and Management of the Water and Sewer System

During fiscal year 2001, Thames-Dick and the Authority signed a contract for the operation and maintenance of the water intakes and the interconnection tanks with the Authority distribution system, along the PR North Coast route, from Arecibo to Bayamon (Superaqueduct). The contract also includes the operation of a filter plant. Thames-Dick is responsible for the operation, maintenance, security, and environmental compliance and regulatory compliance (water quality) for all the operations under the contract. All costs associated with the contract are reported under the caption of Service Contract – Superaqueduct in the accompanying statements of revenues, expenses, and changes in net assets.

From July 1, 2002 to January 15, 2004, the Authority was managed and operated by Ondeo de Puerto Rico (the Operator). The agreement for management and operation was for a period of 10 years. Under this agreement, the Authority remained as owner of the property, with control of the rates, the revenues, and the planning of capital improvements and its respective financing.

The Authority and the Operator entered into a resolution agreement on January 13, 2004, and amended it on June 14, 2005, pursuant to which the parties agreed to terminate the agreement for the management of the Authority's water and wastewater systems, settle outstanding and potential claims in connection with that agreement, and mutually terminate and release each other in respect of certain of their rights and obligations thereunder.

On February 9, 2007, the Authority and the Operator entered into a final settlement agreement in which the Authority and the Operator agreed that the Authority will assume the outstanding claims that have not been resolved as of that date, which included unpaid invoices and legal, environmental, and labor claims that arose during the service agreement and transition service Agreement periods. Pursuant to the agreement, the Operator agreed to pay the Authority $3.8 million in consideration of being released from any further claims and their mutual letters of credit were canceled.

(20) Commitments and Contingencies

(a) Environmental Matters

Facilities and operations of the Authority's water and sewer system are subject to regulation under numerous federal and Commonwealth environmental laws. Under agreements with the United States government, acting on behalf of EPA, the Authority and the Commonwealth are subject to consent decrees to enforce compliance with environmental laws. Accordingly, the Authority could be assessed stipulated noncompliance penalties.

On April 28, 2006, the Authority entered into a consent decree with EPA that requires the Authority to implement system-wide remedial measures at all of the wastewater treatment plants operated by the Authority. The decree establishes deadlines for the compliance with the conditions set forth in the agreement and stipulates penalties for violation of any of those deadlines. The Authority was assessed a penalty of $1 million, which was paid during fiscal year 2007. In accordance with the

(Continued)

Consent Decree, the Authority has to deposit in an escrow account with GDB, $3 million payable in four payments over two years starting on December 1, 2006. As of June 30, 2007, the Authority has deposited $1.5 million in this account. These funds will be used for providing sewer service to a community that has not been connected to the Authority's sewer system.

On May 25, 2006, the Authority entered into a plea agreement with the U.S. Department of Justice related to violations of the Clean Water Act, Title 33, USC, Sections 11311(a) and 1319(c)(2)(A). As part of the agreement, the Authority agreed to pay a $9 million fine in equal installments without interest during a five-year term period. In addition, the agreement required the Authority to comply with several special conditions, such as: (i) upgrade the collection and wastewater treatment system in the Ponce de Leon Avenue area of San Juan for a cost of not less than $10 million to prevent direct discharges to the Martin Peña Channel, (ii) upgrade nine waste water treatment plants for a cost not less than $109 million, and (iii) comply with a consent decree signed by the Authority with the U.S. government on April 26, 2006. The plea agreement also established stipulated penalties for violation of any of the deadlines or performance standards set forth in the agreement. During fiscal year 2006, the Authority accrued a liability of $9.0 million as a result of this plea agreement. As of June 30, 2007 and 2006, the outstanding balance of the accrued liability was $7.2 million and $9.0 million, respectively. As of June 30, 2007 and 2006, the Authority is in compliance with the agreement.

On December 15, 2006, the Authority entered into an agreement with the Department of Health of the Commonwealth related to violations of the Safe Drinking Water Act. The Authority agreed to implement a work plan to remediate the violations, establish preventive and mitigation measures, and execute a preventive maintenance program for the purpose of meeting the requirements of the Safe Drinking Water Act. As part of the agreement, the Authority paid a penalty of $1 million to the Puerto Rico Secretary of the Treasury. In addition, the agreement established stipulated penalties for violation of any of the deadlines or performance standards set forth in the agreement.

The Authority is a defendant in other environmental lawsuits, pending trial or final judgment. The Authority intends to vigorously defend itself against all of the allegations. Management, based on the advice of the legal counsel, is of the opinion that any liability that may result from such lawsuits would not have a material adverse effect on the Authority's financial position as of June 30, 2007.

(Continued)

(b) Risk Management

The Authority has acquired commercial insurance to mitigate its exposure to certain losses involving real and personal property (including windstorm, flood, and earthquake damages) and comprehensive general and automobile claims. Each commercial insurance policy maintained by the Authority contains specific policy limits and deductibles. A summary of the commercial insurance maintained by the Authority is as follows:

Coverage	Deductible	Policy Limit
Real and personal property		
Windstorm	$10 million plus a 2% additional deductible up to a maximum of $7.5 million per location	$150 million $150 million
Flood	$10 million plus a 2% additional deductible up to a maximum of $3.0 million per location	$150 million
Earthquake	$10 million plus a 5% additional deductible up to a maximum of $7.5 million per location	$150 million
All other	$10 million plus $150 thousand per occurrence	$150 million
Comprehensive general liability		
General liability	$100 thousand per occurrence	$2 million
First excess liability	—	In excess of $2 million up to $20 million
Second excess liability	—	In excess of $20 million up to $40 million
Automobile	$50 thousand	$2 million

(c) Other Employee Benefits

The State Insurance Fund Corporation (SIF) provides workers' compensation insurance to the Authority. The Authority is self-insured to pay the difference between SIF's payment and 100% of management and professional employees salaries for 52 weeks and 100% of the salaries of the maintenance and clerical employees for 115 weeks.

(Continued)

(d) Construction Projects

The Authority enters into construction projects for the replacements or expansion of its facilities. As of June 30, 2007, there were outstanding commitments for projects in process for approximately $404 million.

(e) Interest Rate Swap

On June 29, 2007, the Authority entered into two forward interest rate swap agreements for the purpose of reducing the risks that an increase in long-term interest rates would have on the amount of money the Authority could borrow to implement its capital improvements program, at the time it is ready to issue its senior lien revenue bonds. The intention of the swaps is to effectively change the Authority's variable interest rate on the bonds to be issued on a future date to a synthetic fixed rate. The floating rate of these agreements will be based upon the SIFMA municipal swap index. The aggregate notional amount under such agreements is $930 million on the basis of the Authority's estimate regarding the total principal amount of senior lien, net revenue bonds expected to be issued by the Authority. The agreements evidencing these swaps permit the Authority to terminate them on or prior to the effective date of March 12, 2008 at the agreements' fair market value. The structure of the agreements is such that should long-term market interest rates increase from their date of execution to March 12, 2008, the Authority would receive a termination payment approximating the present value increase in borrowing costs on the Authority's senior net revenue bonds, and should long-term market interest rates instead decrease, the Authority would be obligated to make a termination payment that approximates the decrease in such borrowing costs (similarly computed). It is expected that the Authority will execute its option to terminate the swaps at the time it issues the senior revenue bonds to finance a portion of its capital improvement program.

(f) Operating Leases

Certain commercial offices and warehouse facilities of the Authority are leased under operating lease agreements. During the years ended June 30, 2007 and 2006, the Authority incurred approximately $3.9 million and $3.3 million, respectively, in rent expense.

Future minimum noncancelable lease payments on existing operating leases at June 30, 2007, which have an initial term of one year or more, are as follows (in thousands):

2008	$	2,430
2009		1,846
2010		1,722
2011		1,247
2012		464
2013 – 2017		640
2018 – 2022		523
	$	8,872

(Continued)

(g) Litigation

The Authority is defendant in a class action lawsuit presented by customers alleging that the Authority has over billed them due to the methodology used to estimate consumption. The plaintiffs seek recovery of damages in the amount of $175 million and an injunction enjoining the Authority from continuing to bill using the current methodology. The Authority's potential exposure from this class action lawsuit cannot be presently determined and, as such, no liability is being reported on the accompanying basic financing statements.

The Authority is the defendant or co-defendant in various other lawsuits. The ultimate outcome of the lawsuits cannot presently be determined. However, management after consultation with legal assistance, is of the opinion that these lawsuits will not have a material impact on the basic financial statements.

(21) Subsequent Events

(a) Issuance of Debt

On September 27, 2007, the Authority issued $39.1 million of Series EE of USDA Rural Development Program Bonds, at 4.25% of interest, payable semiannually and maturing in semiannual installments through July 1, 2047. The funds raised by this issuance were used to partially repay the outstanding balance of USDA Rural Development Program lines of credit for construction projects from GDB. The payment of principal and interest on these bonds is guaranteed by the Commonwealth.

(b) Termination of Forward Interest Rate Swap Agreements

On February 14, 2008, the Authority terminated its two forward interest rate swap agreements entered into on June 29, 2007, and is obligated to make a termination payment of approximately $75 million to the holders of the agreements. The Authority expects to fund the termination payment from the proceeds of a revenue bond issuance that is expected to occur during fiscal year 2008. The Authority will report an expense of approximately $75 million during the year ended June 30, 2008 related to the termination payment.

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Autoridad de Acueductos y Alcantarillados
ESTADO LIBRE ASOCIADO DE PUERTO RICO

Puerto Rico Aqueduct and Sewer Authority

Final Report

Consulting Engineer's Report in Connection with the Puerto Rico Aqueduct and Sewer Authority's 2008 Bond Issue

January 2008
2451119

MP ENGINEERS of PUERTO RICO and its subcontractor MALCOLM PIRNIE

Puerto Rico Aqueduct and Sewer Authority

FINAL REPORT

Consulting Engineer's Report in Connection with the Puerto Rico Aqueduct and Sewer Authority's 2008 Bond Issue

January 2008

Report Prepared By:

MP Engineers of Puerto Rico, PSC
and its subcontractor
Malcolm Pirnie, Inc.

Contents

Executive Summary ES-1

E.1. Introduction and Purpose ES-1
E.2. Organization and Management ES-1
E.2.1 Background and Current PRASA Organization ES-1
E.3. System Description ES-4
E.4. Condition of System ES-4
E.5. Operations and Maintenance Practices Evaluation ES-6
E.5.1 Review of Current and Historic Practices ES-6
E.5.2 Benchmark Comparisons and PRASA Performance Metrics ES-7
E.6. Capital Improvements Program (CIP) and Regulatory Compliance Status ES-9
E.7. Financial Analysis ES-10
E.8. Conclusions/Professional Opinion ES-13

1. Introduction and Purpose 1-1

1.1. Introduction 1-1
1.2. Overview of PRASA's System 1-1
1.3. Purpose 1-3
1.4. Conventions 1-4
1.5. Acronyms 1-4

2. Organization and Management 2-1

2.1. Institutional Background 2-1
2.2. Current PRASA Organization 2-2
2.2.1. Board of Directors 2-3
2.2.2. The Executive Staff of PRASA 2-3
2.2.2.1. Executive President 2-3
2.2.2.2. The Executive Director for Infrastructure 2-4
2.2.2.3. The Regional Executive Directors 2-4
2.2.2.4. Management Succession 2-4
2.3. Current Management Structures 2-5
2.3.1. Current Senior Management Team 2-6
2.4. Management Initiatives 2-8
2.4.1. Overview 2-8
2.4.2. Environmental Compliance 2-9
2.4.3. Infrastructure and Capital Improvements Program 2-10
2.4.4. Operations and Maintenance 2-11
2.4.5. Staffing 2-12
2.4.6. Human Resources 2-14
2.4.7. Customer Service 2-15
2.4.8. Information Technology 2-17

2.5. Conclusions 2-17

3. System Description 3-1

3.1. Introduction 3-1
3.2. Water System 3-4
3.2.1. Service Areas 3-5
3.2.2. Water Demand and Supply 3-6
3.2.3. Raw Water Supply Systems 3-7
3.2.4. Wells 3-9
3.2.5. Water Treatment Plants 3-10
3.2.6. Water Pump Stations 3-13
3.2.7. Storage Tanks (Outside of the Properties of Water Treatment Plants) 3-13
3.2.8. Water Meters 3-13
3.2.8.1. Production Meters 3-13
3.2.8.2. Customer Meters 3-14
3.2.9. Water Piping (Transmission and Distribution) 3-14
3.3. Wastewater System 3-15
3.3.1. Service Areas 3-16
3.3.2. Wastewater Treatment Plants 3-17
3.3.3. Wastewater Pump Stations 3-20
3.3.4. Wastewater Collection Systems (Including Interceptors) 3-20

4. Condition of System 4-1

4.1. Introduction 4-1
4.2. Dams and Weirs 4-3
4.2.1. Inspection Results 4-4
4.2.1.1. Regulated Dams 4-4
4.2.1.2. Weirs 4-5
4.2.2. Conclusions 4-6
4.3. Wells 4-6
4.3.1. Inspection Results 4-6
4.3.2. Conclusions 4-7
4.4. Water Treatment Plants 4-7
4.4.1. Inspection Results 4-7
4.4.2. Conclusions 4-8
4.5. Water Pump Stations 4-9
4.5.1. Inspection Results 4-10
4.5.2. Underground Booster Pump Stations 4-10
4.5.3. Conclusions 4-11
4.6. Water Storage Tanks 4-11
4.6.1. Inspection Results 4-11
4.6.2. Conclusions 4-12
4.7. Wastewater Treatment Plants 4-12
4.7.1. Inspection Results 4-13
4.7.2. Conclusions 4-13
4.8. Wastewater Pump Stations 4-14
4.8.1. Inspection Results 4-14
4.8.2. Conclusions 4-15
4.9. Buried Infrastructure 4-16

4.9.1. Water Distribution System 4-16
4.9.2. Wastewater Collection System 4-22
4.9.3. Conclusions 4-24
4.10. Summary of Findings and Conclusions 4-24

5. Operations and Maintenance Practices Evaluation 5-1

5.1. Introduction and Background 5-1
5.2. Maintenance 5-2
5.2.1. Integrated Preventive Maintenance Program (IPMP) 5-3
5.3. Operations and Documentation 5-5
5.4. Staffing and Training 5-6
5.4.1. Staffing 5-6
5.4.2. Training 5-7
5.5. Other Issues 5-10
5.5.1. O&M Budgets 5-10
5.5.1.1. Water 5-10
5.5.1.2. Wastewater 5-11
5.5.2. Metrics 5-12
5.5.3. Emergency Management 5-13
5.5.4. Old, Out-of-service Equipment 5-14
5.5.5. Record-Keeping 5-14
5.6. Conclusions 5-14

6. Capital Improvements Program and Regulatory Compliance Status 6-1

6.1. Introduction 6-1
6.2. Capital Improvements Program: Project Distribution and Costs 6-2
6.2.1. Project Classification and Prioritization 6-3
6.2.2. FY2007 CIP 6-6
6.2.3. CIP Programming: FY2008-2012 6-6
6.2.3.1. Water System Projects 6-9
6.2.3.2. Wastewater System Projects 6-9
6.2.3.3. Other Projects: Operational, Planning, Renovation and Technology 6-10
6.2.4. CIP Programming: FY2013-2017 and Beyond 6-11
6.3. Comparison of CIP with Consent Decrees 6-11
6.3.1. PRASA II: 1995 Consent Decree, Civil Action No. 92-1511 (SEC) 6-12
6.3.2. PRASA III: 2000 Consent Decree, Civil Action No. 00-2554 6-14
6.3.3. PRASA IV: 2003 Consent Decree, Civil Action No. 01-1709 (JAF) 6-16
6.3.4. PRASA V: 2006 Consent Decree, Civil Action No. 06-1624 (SEC) 6-17
6.3.5. Puerto Rico Department of Health 2007 Consent Decree Civil Action KPE 2006-0858 6-20
6.4. Future Regulations 6-22
6.4.1. Stage 2 Disinfection and Disinfection Byproducts Rule 6-23
6.4.1.1. Likely Effects of Stage 2 DBPR on PRASA 6-24
6.4.2. Long Term 2 Enhanced Surface Water Treatment Rule 6-24
6.4.2.1. Likely Effects of LT2 ESWTR on PRASA 6-25
6.4.3. Ground Water Rule 6-25
6.4.3.1. Likely Effects of the GWR on PRASA 6-26
6.4.4. Future Contaminants of Concern 6-26
6.4.4.1. Likely Effects of the Future Contaminants on PRASA 6-27

6.5. Conclusions 6-28

7. Financial Analysis 7-1

7.1. Introduction 7-1
7.2. Review of Billed Water and Sewer Volumes 7-2
7.3. Water and Sewer Rates 7-5
7.3.1. Rate Structure 7-5
7.4. Historic and Projected Revenues 7-8
7.4.1. Historic Revenues 7-8
7.4.2. Projected Revenues 7-9
7.5. Review of Historic and Projected O&M Expenses 7-15
7.5.1. Historic Expenses 7-15
7.5.2. Projected Expenses 7-16
7.5.3. FY2007 Budget vs. Actual Expenses 7-21
7.6. Funding of PRASA CIP 7-21
7.7. Debt Service 7-22
7.7.1. Existing and Proposed Debt Service 7-22
7.7.2. Master Agreement of Trust 7-23
7.7.3. Debt Service Coverage – Current Annual Debt Service 7-24
7.7.4. Debt Service Coverage – Additional Bonds Test 7-25
7.7.5. Operating Reserve 7-25
7.7.6. Capital Improvement Fund 7-25
7.8. Management's Alternate Case 7-26
7.8.1. Management's Alternate Case – Conversion of Connected but Non-Paying Customers 7-26
7.8.2. Management's Alternate Case – Payroll Reductions, Electric Power and Chemical Cost Escalation 7-27
7.8.3. Management's Alternate Case – Rate Revenue Increases 7-28
7.8.4. Resulting DSC and ABT from Alternate Case 7-28
7.9. Conclusions on PRASA Financial Forecasts – Management's Base Case and Management's Alternate Case 7-29

8. Conclusions/Professional Opinion 8-1

8.1. Considerations and Assumptions 8-1
8.2. Conclusions 8-2

List of Tables

Table ES-1. Condition of System by Asset Category ES-5
Table ES-2. Water and Wastewater Utilities Benchmarks ES-7
Table ES-3. Operation Metrics ES-8
Table ES-4 Percent Increase in Revenues from Rates, FY2008 – FY2017 ..... ES-11
Exhibit 1 FY2008 – FY2017 Forecast – Management's Base Case ..... After ES-16
Exhibit 2 FY2008 – FY2017 Forecast – Management's Alternate Case ..... After ES-16
Table 2-1. Staff Levels 2-13
Table 3-1. Island-Wide Water Demand Forecast in MGD 3-6
Table 3-2. Island-Wide Water Sales and Estimated Production in MGD(1) 3-7
Table 4-1. Percent of Assets Inspected by Asset Category 4-1

Table 4-2. Summary of Inspections by Region 4-2
Table 4-3. Regulated Dams 4-5
Table 4-4. Weirs 4-5
Table 4-5. Wells 4-6
Table 4-6. Water Treatment Plants 4-8
Table 4-7. Water Pump Stations 4-10
Table 4-8. Water Storage Tanks 4-12
Table 4-9. Wastewater Treatment Plants 4-13
Table 4-10. Wastewater Pump Stations 4-15
Table 4-11. Unaccounted for Water (%) Utility Benchmarks 4-17
Table 4-12. Water Distribution System Integrity Utility Benchmarks 4-21
Table 4-13. Sewer Overflow Rate Utility Benchmarks 4-23
Table 5-1. 2007 Projected PRASA Training Program 5-7
Table 5-2. Training Hours (FY2005-FY2007) 5-8
Table 5-3. Licensed WTP and WWTP Operators by Type 5-9
Table 5-4. Training Hours per Employee Utility Benchmarks 5-9
Table 5-5. Water O&M Cost per Account Utility Benchmarks 5-10
Table 5-6 Water O&M Cost per MG Processed Utility Benchmarks 5-10
Table 5-7. Wastewater O&M Cost per Account Utility Benchmarks 5-11
Table 5-8 Wastewater O&M Cost per MG Processed Utility Benchmarks 5-11
Table 5-9. PRASA Operational and Performance Metrics Examples 5-12
Table 5-10. Summary of O&M Findings and PRASA Initiatives 5-14
Table 6-1. Number of Capital Projects by Category and Group 6-4
Table 6-2. Capital Improvements Program 2007-2017 ($M) by Category 6-7
Table 6-3. Capital Improvements Program 2007-2017 ($M) by Project Type 6-8
Table 6-4. PRASA II Requirements and Compliance Progress Status 6-13
Table 6-5. PRASA III Requirements and Compliance Progress Status 6-15
Table 6-6. PRASA IV Requirements and Compliance Progress Status 6-16
Table 6-7. PRASA V Requirements and Compliance Progress Status 6-18
Table 6-8. PRASA V Remedial Measures and CIP Project Status 6-19
Table 7-1. Population, Accounts and Billed Volumes for Water and Sewer 7-3
Table 7-2. Historic Number of Accounts by Customer Class 7-4
Table 7-3. Historic Water Consumption by Customer Class (Cubic Meters) 7-4
Table 7-4. Historical Average Annual Consumption per Account (Cubic Meters)(1) 7-5
Table 7-5. Residential Monthly Base Charge per Account 7-6
Table 7-6. Residential Volume Rate per Cubic Meter 7-6
Table 7-7. Non-Residential Monthly Base Charge per Account(1) 7-7
Table 7-8. Commercial and Government Volume Rate per Cubic Meter 7-7
Table 7-9. Industrial Volume Rate per Cubic Meter 7-7
Table 7-10. Historic Revenues ($ Thousands) 7-8
Table 7-11. Collection Reserve Assumptions 7-13
Table 7-12. Historical O&M Expenses ($ Thousands) 7-16
Table 7-13. Other Expense Projections ($ Thousands) 7-20
Table 7-14. Trust Agreement Treatment of Existing and Proposed Debt 7-24
Table 7-15. Percent Increase in Revenues from Rates 7-28
Exhibit 1 FY2008 – FY2017 Forecast – Management's Base Case ..... After 7-31
Exhibit 2 FY2008 – FY2017 Forecast – Management's Alternate Case ..... After 7-31

List of Figures

Figure 1-1: PRASA Regions 1-3
Figure 2-1: PRASA Legislated Executive Structure – Management Positions 2-3
Figure 2-2: Regions of the Five Program Management Consultants 2-10
Figure 3-1: Puerto Rico Population Density 3-1
Figure 3-2: Puerto Rico Topographic Map 3-2
Figure 3-3: Existing Water Treatment Plants 3-3
Figure 3-4: Existing Wastewater Treatment Plants 3-3
Figure 3-5: Future Wastewater Treatment Plants 3-4
Figure 3-6: Quantity of Water Service Clients by Type 3-5
Figure 3-7: Quantity of Water Service Clients by Region 3-6
Figure 3-8: Quantity of Raw Water Supply Systems by Region 3-8
Figure 3-9: Quantity of Wells by Region 3-10
Figure 3-10: Age Distribution of WTPs by Type 3-11
Figure 3-11: Quantity of WTPs by Design Capacity 3-12
Figure 3-12: Quantity and Average Capacity of WTPs by Region 3-12
Figure 3-13: Design Capacity of WTPs by Region 3-13
Figure 3-14: Miles of Water Pipelines by Diameter 3-15
Figure 3-15: Quantity of Wastewater Service Clients by Type 3-16
Figure 3-16: Quantity of Wastewater Service Clients by Region 3-17
Figure 3-17: Quantity of WWTPs by Type 3-19
Figure 3-18: Quantity and Average Capacity of WWTPs by Region 3-20
Figure 3-19: Miles of Wastewater Pipelines by Pipe Diameter Size 3-21
Figure 4-1: 2005-2007 Active Water System Leak Reduction 4-21
Figure 4-2: 2005-2007 Active Sewer Overflow Reduction 4-23
Figure 6-1: Project Distribution by Prioritization Score 6-5
Figure 6-2: 2007-2012 Total Capital Expenditures by Project Category 6-6
Figure 6-3: Water System Capital Expenditures by Project Type 6-9
Figure 6-4: Wastewater System Capital Expenditures by Project Type 6-10
Figure 6-5: Other Projects Capital Expenditures by Project Type 6-11
Figure 7-1. Historic Percent of Revenues – Base Charge and Volume Charge 7-9

Appendices

A. List of Acronyms

Executive Summary

E.1. Introduction and Purpose

MP Engineers of Puerto Rico, PSC (MPPR) and its subcontractor Malcolm Pirnie, Inc. (Malcolm Pirnie) has been retained by the Puerto Rico Aqueduct and Sewer Authority (PRASA) to prepare this Consulting Engineer's Report (CER) in support for the issuance of new bonds for its infrastructure program. The purpose of the issuance, the first in almost twenty years for PRASA, is to repay and refinance existing PRASA debt and provide funding for the implementation of capital improvements to the water and wastewater systems (collectively, the "System") throughout all five regions of the island.

MPPR/Malcolm Pirnie has completed condition assessments of the System through inspections of the major assets and a sampling of the minor assets. MPPR/Malcolm Pirnie also evaluated the organization and management of PRASA, PRASA's capital improvement program (CIP) and regulatory compliance situation, and completed a review of the PRASA-prepared financial forecasts.

PRASA has prepared two financial forecasts covering the ten-year fiscal year (FY) period FY2008 to FY2017. The first, referred to as "Management's Base Case" or the "Forecast," reflects PRASA's initiatives to increase revenues and assumptions regarding the escalation of electricity and chemical costs. The second forecast, referred to as "Management's Alternate Case," is a more fiscally conservative forecast of the timing of the results of the initiatives (i.e., revenue and expense projections do not materialize as quickly as forecasted in Management's Base Case) and the inflation of electricity and chemical costs.

The primary purpose of this CER is to provide an opinion regarding the condition of the System, the organization and management of PRASA, the planned capital improvements, and the reasonableness of the two alternate financial forecasts prepared by PRASA.

E.2. Organization and Management

E.2.1 Background and Current PRASA Organization

Since its creation in 1945, PRASA has been generally managed and operated as a public corporation, except for a period from 1995 through early 2004 when PRASA engaged private firms to assist with the management, operation, and maintenance of the System. In 1995, PRASA engaged a private management company to operate and maintain the System, while the responsibility for capital improvements remained the responsibility of PRASA's public sector management. This came as a result of the need to improve the effectiveness and efficiency of PRASA's system and services.

In 1998, looking to improve its efficiency in executing capital improvement projects, PRASA delegated the responsibility for the development of certain large capital projects to the Puerto Rico Infrastructure Financing Authority (PRIFA) via an inter-governmental agency agreement. In 2002, PRASA changed private management companies as part of a competitive bidding process and the private company's responsibilities were further expanded to include the management of part of the capital program.

These privatization efforts, while improving certain areas of PRASA's operations did not yield the expected results. Additionally, in 2004, a significant contractual discrepancy between PRASA and the selected private company resulted in the cancellation of the contract.

On March 31, 2004, the Commonwealth of Puerto Rico approved Commonwealth Act No. 92 (Act No. 92) ordering the restructuring of PRASA by transferring operations and maintenance responsibility back to public sector management and decentralizing the System's administration into five Regions (North, South, East, West, and Metro).

Act No. 92 included the following legislated actions:

- Modified PRASA's organizational and operational structure.
- Transitioned PRASA back to public sector management.
- Established a nine member Board of Directors.
- Decentralized the system administration by creating five operational Regions.
- Created an Infrastructure Directorate responsible for the development and implementation of the CIP.
- Established seven new management positions, each with a six year appointment named by the Board of Directors.

The goal of this de-privatization and restructuring was to achieve the mission of excellence in the provision of drinking water and the treatment of wastewater. PRASA also began transitioning the responsibility for implementing capital programs from PRIFA back to PRASA so that capital and operational programs were unified under single management.

From a financial standpoint, PRASA had historically been heavily subsidized by the Commonwealth. There were few incentives for PRASA to provide cost-effective services. Additionally, PRASA had historically lacked necessary funding to properly maintain and improve its infrastructure. In 2005, PRASA's Board of Directors approved a new rate structure which allowed PRASA to significantly increase its revenues. Prior to 2005, PRASA had not increased rates since 1986. Rates were raised in two increments between 2005 and 2006, raising the base fee for water and wastewater service by a combined 128%. PRASA is now a self-sufficient public corporation and has since

stopped receiving subsidies from the Commonwealth. In order to achieve this position of self-sufficiency, PRASA has become financially accountable and has improved the management of its operations and promoted the development of several initiatives. Some of these initiatives have been implemented and several others are currently in the planning and development stages. It is the projected financial results of these initiatives (among other assumptions), that distinguish the two financial forecasts prepared by PRASA and discussed in Section 7 of the CER.

With respect to the organizational structure, PRASA has historically operated as a large centralized agency, having most functions centralized and managing only day-to-day operations on a regional basis. This resulted in high levels of bureaucracy and removed many critical functions from the customers' reach. However, after Act No. 92 was implemented, PRASA's new executive management developed an integrated organizational structure where certain functions remained centralized and others were de-centralized or regionalized. This effort has resulted in a matrix type organization with two main structural elements:

- A regional element defined by geography and responsible for executing initiatives and managing operations in each of PRASA's five operational Regions. Functions better handled on a regional basis include: management of system operations and maintenance, customer service in commercial offices, local compliance monitoring and implementation, engineering (support for local projects), regional administration and finance and preventive maintenance.
- A centralized functional element that includes functions that generally dictate initiatives and standards, provides functional support to all Regions, and executes administrative duties better handled on an island wide basis. Centralized functions include: central administration and finance, central communications, information systems, human and labor relations, legal affairs, management of infrastructure programs, environmental compliance (policy and guidelines), purchasing and logistics, emergency management and corporate security.

In addition to the changes in the organizational structure, PRASA's management has made strides in its negotiations with its organized labor. The results of a labor strike during the later months of 2004 provided an opportunity for management to gain significant leverage in its negotiating position with the main union, the UIA-AAA. While a new agreement has yet to be signed, most major issues, including wage increases, have been agreed upon and implemented. Issues still pending negotiation are those regarding contract term, disciplinary actions, and health care. Currently, despite not having a signed agreement, labor relations between management and union employees are generally considered as good.

E.3. System Description

PRASA serves a population of approximately 4 million residents plus approximately 5 million visitors annually[1]. PRASA provides water and wastewater service to about 97% and 55% of Puerto Rico's population, respectively. The island is approximately 35 miles wide and 100 miles long. Due to the fact that Puerto Rico has a wide variety of topography, isolated demographic distributions, and a diverse mix of users, PRASA has a somewhat fragmented and localized system of water sources, treatment systems and delivery systems. As a result, PRASA has many more treatment facilities than most utilities serving a similar number of customers. Also, this results in a higher degree of diversity in PRASA's assets in terms of size, treatment technologies, and age when compared to systems in the United States (U.S.) and Canada.

As of the time of this assessment, PRASA operates 129 water treatment plants (WTPs), 349 wells, 1,057 pump stations, several large dams, over 600 wastewater pumping stations, and 62 wastewater treatment plants (WWTPs) located throughout the island. Thus, PRASA has the complex challenge of planning for a wide variety of water and wastewater assets that cover a wide geographic range.

The Metro Region, which includes San Juan, has fewer and larger treatment plants than the rest of the island and therefore resembles large utilities in the U.S. more closely. The other Regions are composed of numerous, smaller treatment plants that serve small communities that are not interconnected. Where feasible, PRASA is looking to consolidate some of the smaller facilities to serve multiple communities with larger regional plants, but there are limited opportunities to do this in a cost effective manner due to the geographic spread of the communities and Puerto Rico's topography.

In terms of the redundancy of the System, PRASA has made major investments during the past decade, which allows it to serve customers in major urban areas with water from other regions. An example of such investments is the construction of the North Coast Superaqueduct which brings water from the northwest portion of the island to the Metro Region. This increased redundancy helps PRASA manage certain situations, such as droughts, more effectively. In addition to interconnections between some urban systems, PRASA has also invested in preparing itself for emergency situations such as tropical storms and hurricanes. The creation of a comprehensive Emergency Management Plan and the purchase of equipment such as emergency generators for critical facilities allow PRASA to operate most of its System during power failures.

E.4. Condition of System

PRASA owns a large variety of assets, including land, buildings, dams, wells, water and wastewater treatment facilities and pump stations, outfalls, buried infrastructure, vehicles,

[1] Source: Puerto Rico Tourism Company statistics for fiscal years 2004 through 2006.

and water meters. MPPR/Malcolm Pirnie has assessed the condition of the PRASA System by inspecting major elements of the PRASA System. The purpose of these inspections was to identify the overall condition of the facilities and to determine if they are being operated and maintained in a manner consistent with their operating goals. The assessment also provided an opportunity to verify PRASA's CIP alignment with System needs.

The criteria used in the facility inspections were compliance, operations / process control, equipment / maintenance, and staffing / training. An overall facility rating was then determined based on the calculation of a weighted average of the ratings for each criterion. Table ES-1 presents the general condition assessment of PRASA's assets that were inspected as part of the preparation of this CER.

Table ES-1
Condition of System by Asset Category

Asset Category	Total PRASA Facilities	Inspections Performed		General Condition
		Quantity	Percent	
Regulated Dams	7	7	100	Adequate to good
Small Dams / Weirs /Superficial Surfaces	156	7	4	Adequate
Wells	349	59	17	Adequate
Water Treatment Plants	129	129	100	Adequate to good
Water Pump Stations(1)	1,057	110	10	Adequate to good
Water Storage Tanks	1,234	83	7	Adequate
Wastewater Treatment Plants	62	62	100	Poor to good (primary concern is compliance)
Wastewater Pump Stations	619	91	15	Poor to good
Total	3,613	548	15	

(1) Includes 25 site visits to underground booster stations. Full inspections were not completed due to inaccessibility of the vaults.

The condition of the facilities visited varied from new to those requiring significant capital upgrades. Compliance with discharge permit limits and drinking water standards varied greatly depending on the plant age, condition and experience of operators. Facility conditions ranged from poor to good, with 83% in the adequate to good range. Of the remaining 17% of facilities, which range from the poor to unacceptable range, the majority of the treatment plants are scheduled to be closed or receive capital upgrades to improve performance.

Despite some compliance problems, the treatment facilities are generally producing and delivering potable water and conveying and treating wastewater. The condition of many facilities is not entirely unexpected due to historically insufficient commitment of capital

and operational resources over the years. PRASA demonstrates a thorough understanding of the System shortcomings.

Although buried infrastructure was not physically inspected, investigations show that PRASA is taking steps to improve the way it manages water main leaks and sewer overflows. Approximately 62% of water produced by PRASA is unaccounted for water. PRASA Management recognizes this amount of unaccounted for water is unacceptable and has designated this as a top improvement priority. Therefore, PRASA is implementing a series of actions to address the primary contributors of water losses: a) theft, b) poor metering at both the production (plants) and sale (customer connections) points, and c) water line losses. PRASA also recognizes that if it can reduce unaccounted for water, it will increase revenue, reduce O&M expenses, and reduce the need for capital improvements to increase water supply.

As required by a United States Environmental Protection Agency (USEPA) Consent Decree, PRASA is currently conducting sewer system evaluations to determine sources of inflow and infiltration. Based on the findings of these evaluations, PRASA will prepare corrective plans to reduce the amount of inflow and infiltration. By doing so, PRASA should be able to reduce the number of overflows and also reduce the amount of wastewater treated in its WWTPs.

The planned capital programs along with the operation and maintenance improvement initiatives are generally in alignment with the System needs. Once implemented as planned, the System should demonstrate performance improvements, including substantial advances towards complying with regulatory requirements.

E.5. Operations and Maintenance Practices Evaluation

E.5.1 Review of Current and Historic Practices

Historic operations and maintenance (O&M) practices have suffered from contract-operator changes, union labor disagreements, lack of system-wide O&M plans, lack of management information systems, improper maintenance, lack of employee training and motivation programs, and lack of long-term capital improvement planning. However, as part of the strategy to revitalize PRASA, PRASA's management has developed and is currently undertaking several initiatives to substantially improve O&M practices.

Notable key elements of the initiatives developed by PRASA, that are relevant to O&M practices include:

- Managing, developing and implementing a comprehensive long-term CIP to enhance O&M practices and efficiency including: a) contracting services to five nationally recognized firms to plan, design and manage the CIP; b) promoting public-private

partnerships to aid in the development of the island's water system; and c) consolidating systems to achieve economic efficiencies.

- Hiring of highly qualified individuals to fill key positions to improve the quality of its management staff.
- Negotiating a new agreement with the unions to set forth salary structure and expectations as well as stating clear chains of command, thus eliminating undue interference of the union in operational and maintenance decisions.
- Developing and implementing an aggressive training initiative that includes training for all plant operators.
- Developing and implementing a comprehensive Integrated Preventive Maintenance Program (IPMP) that intends to transform the maintenance culture at PRASA. Through the IPMP, PRASA intends to achieve programmed and continuous maintenance to plants, pump stations, vehicles, and equipment to provide for more reliable service, improve client satisfaction, and achieve long term operational cost savings through preservation of assets.
- Developing and implementing a comprehensive information technology initiative to increase operational efficiency through systems such as telemetry.
- Developing and monitoring operational initiative metrics. Examples of some of these metrics include: pipeline replacements, pipe leaks, illegal connections (interventions per month), number of overflows, meter replacements, percentage of actual meter readings, clients without water service per week, percentage of generators operating, days to process purchase orders, number of training hours per employee, and customer telephone waiting times.

E.5.2 Benchmark Comparisons and PRASA Performance Metrics

The American Water Works Association (AWWA) has collected recent benchmarking data from water and wastewater utilities throughout the U.S. and Canada. Table ES-2 provides a comparison of PRASA's metrics to several key benchmark performance indicators.

Table ES-2
Water and Wastewater Utilities Benchmarks

Benchmark Category	Utility Category	Top Quartile	Median	Bottom Quartile	PRASA
Training Hours per Employee	Serve > 500,000	31.8	24.5	16.4	FY2005: 3 FY2006: 13 FY2007: 16 FY2008: 14 (projected)
	Combined W & WW	31.7	21.8	11.7	
	All Utilities	32.3	21.4	11.6	
Unaccounted for Water (%)	Serve > 500,000	5.8	11.2	12.9	FY2006: 60% FY2007: 62%
	Combined W & WW	5.3	9.7	13.1	
	All Utilities	5.7	9.7	13.5	

Benchmark Category	Utility Category	Top Quartile	Median	Bottom Quartile	PRASA
Leaks/breaks per 100 miles of water main	Serve > 500,000	32.4	66.9	82.2	FY2006: 1,064 FY2007: 1,110
	Combined W & WW	17.5	45.2	77.3	
	All Utilities	16.7	39.1	68.8	
Sewer Overflow Rate per 100 miles of sewer	Serve > 500,000	1.10	4.83	7.70	FY2006: 997 FY2007: 843
	Combined W & WW	1.15	2.85	7.04	
	All Utilities	1.2	3.2	7.7	
Water O&M Cost per Account(1)	Serve > 500,000	$206	$292	$443	FY2007: $329
	Combined W & WW	$180	$278	$420	
	All Utilities	$195	$278	$418	
Wastewater O&M Cost per Account(1)	Serve > 500,000	$197	$266	$407	FY2007: $242
	Combined W & WW	$190	$278	$433	
	All Utilities	$202	$276	$433	
Water Customer Accounts per Employee	Serve > 500,000	674	508	369	FY2007: 362
	Combined W & WW	719	504	376	
	All Utilities	663	488	364	
Wastewater Customer Accounts per Employee	Serve > 500,000	700	637	336	FY2007: 309
	Combined W & WW	798	535	386	
	All Utilities	818	517	340	

Source: Benchmarking Performance Indicators for Water and Wastewater Utilities: 2006 Annual Survey Data and Analyses Report, AWWA

(1) – Includes total operations and maintenance costs (less depreciation). PRASA reported values include payroll and related, power, chemicals, Superaqueduct service contract, insurance and other expenses, less capitalized operating expenses.

While it is understood that the PRASA System is significantly different from the typical U.S. and Canada water and wastewater utilities, the above benchmarks indicate that PRASA is in alignment with many utilities in some categories, but that there are several potential areas for improvement. As mentioned above, PRASA has acknowledged these shortcomings and is taking corrective actions to address them.

In order to monitor the progress of its initiatives, PRASA has developed its own set of operational metrics. The following Table ES-3 presents a summary of these operational metrics.

Table ES-3
Operation Metrics

Metric	Unit	January 05	June 07
Pipeline Replacements	Pipeline replaced (m)	591,000 (from January 05 to June 07)	
Pipe leaks	Total unaddressed	5,928	910
	Unaddressed after 7 days	3,176	47
Illegal Connections	Interventions	52,000 (from January 05 to June 07)	

Metric	Unit	January 05	June 07
Sewer Overflows	# of overflows / week	546	492
Meter Replacements	Client meters replaced	370,000 (from January 05 to June 07)	
Meter Readings	% actual meter reading	73%	87%
Clients w/o Water Service	# clients without service / week	14,483	9,459
Emergency Generators	% operating	66.4%	98.3%
Purchase Orders	Days to process purchase orders	30	14
Warehouse Reserve	Days to process warehouse reserve	25	9
Inventory Turns	# of turns	NA	1.8
Training Hours	Training hours / employee / year	3	16
Customer Wait Times	Telephone wait time	Over 4 minutes	52 seconds

Source: PRASA Application for Gold Award for Competitiveness Achievement, June 27, 2007, as modified by other data provided by PRASA.

As illustrated in the table above, PRASA's metrics show that significant improvements have been achieved in several operational and commercial areas.

E.6. Capital Improvements Program (CIP) and Regulatory Compliance Status

PRASA's CIP has a comprehensive listing of projects and budgets for the ten years ending June 30, 2017. As of November 2007, PRASA's CIP includes $2.46B in capital expenditures over fiscal years 2007 through 2012, of which approximately $475M correspond to capital expenditures incurred in FY2007. The remaining $1.98B are programmed capital expenditures from FY2008 through FY2012. PRASA currently has programmed $1.97B in capital expenditures over the period from FY2013 to FY2017.

There are 642 projects currently included in the CIP, with 319 projects that commenced project development activities during or prior to FY2007, 172 projects programmed to commence during FY2008 through FY2012 and 105 projects programmed to commence in FY2013 through FY2017. The remaining 46 projects are programmed to commence beyond FY2017. Projects included in the CIP cover major capital improvements identified throughout all five Regions, as well as island-wide initiatives such as technological advancements, telemetry, preventive maintenance, meter replacement, and renewal and replacements to the system.

Of the 596 projects included in the FY2007 – FY2017 CIP, 180 projects have been categorized by PRASA as mandatory, which includes projects required by consent decrees with regulatory agencies. These 180 projects represent an estimated $1.76B of

programmed capital expenditures, or approximately 40% of the total CIP over this time period.

PRASA's CIP addresses the requirements of the current USEPA and Puerto Rico Department of Health (PRDOH) Consent Decrees. PRASA will need to perform additional assessments and implement operational changes or additional capital improvements to bring non-compliant facilities, which include WTPs, WWTPs, and WTP sludge treatment systems, into compliance. Review of PRASA's CIP showed that all of the WTP and WWTP facilities that were considered unacceptable in terms of compliance currently have CIP projects identified to either rehabilitate or close the facility, thus addressing existing compliance problems.

PRASA's FY2007 record of compliance with USEPA Consent Decree milestones and the positive transformation in communications with regulatory agencies (i.e. USEPA and PRDOH) supports PRASA's ongoing commitment to bring its System into compliance.

PRASA is currently in the process of negotiating a new consent decree with USEPA that will address current compliance issues associated with sludge treatment systems at WTPs. Sixteen (16) projects have been preliminarily included in the CIP to address sludge treatment system improvements. CIP modifications will be required to adequately accommodate resulting needs for the sludge treatment systems.

The full impact of future regulations on the System is not known at this time. In some cases, future regulations are expected to require minor process changes and in other cases major capital improvements, such as construction of new treatment processes. In general, the CIP does not include specific projects intended solely to address future regulations. However, PRASA is implementing some improvements projects with consideration for future regulations. Presently, regulatory agencies and PRASA's program management consultants actively participate in the planning and design phases, providing support to PRASA in the project development process, overseeing compliance with Consent Decrees, and searching for innovative solutions to comply with current, and when applicable, future regulations. As the effects of future regulations become more defined, CIP modifications will be required to adequately accommodate resulting needs.

E.7. Financial Analysis

In the preparation of this CER, MPPR/Malcolm Pirnie reviewed the PRASA-prepared financial forecast (the Forecast or Management's Base Case or Base Case) shown in Exhibit 1 (enclosed at the end of this section). A second financial forecast was also prepared by PRASA – Management's Alternate Case (Management's Alternate Case or Alternate Case) as shown in Exhibit 2. This second forecast presents a more fiscally conservative plan based on less favorable assumptions regarding various revenue enhancing and cost reducing initiatives.

The purpose of the MPPR/Malcolm Pirnie review was to assess the sufficiency of the current and proposed rates to provide the revenues necessary to support the projected costs shown in Exhibit 1, including capital expenditures, management, operations and maintenance expenses, as well as debt service. Additionally, the Forecast (presented on a modified accrual basis) illustrates the anticipated debt service coverage during the forecast period for the ten fiscal years from July 1, 2007 through June 30, 2017 (the forecast period).

The forecasts represent PRASA's estimate of the most probable results of operations and debt service coverage for the forecast period. Thus, the forecasts reflect PRASA's judgment, based upon present circumstances, as to the most likely set of conditions and course of action. However, there will usually be differences between forecasted and actual results, because events and circumstances frequently do not occur as expected, and those differences may be material.

The differences between the two PRASA forecasts, as reflected in Management's Alternate Case, indicate rate adjustments beyond the 4.5% annual increases contained in Management's Base Case. A comparison of the total percent change in revenues from rates is shown in Table ES-4 for both Management's Base Case (Exhibit 1) and Management's Alternate Case (Exhibit 2). These percentages reflect both rate adjustments allowed under the Rate Resolution and additional rate increases that would only be approved through the formal rate process. PRASA has the option of going through the formal rate process if a 4.5% annual rate adjustment is not sufficient and this would be required under Management's Alternate Case forecast (based on the projected 11.0% increase in FY2010).

Table ES-4.
Percent Increase in Revenues from Rates
FY2008 – FY2017

Year	Base Case	Alternate Case	Year	Base Case	Alternate Case
FY2008	0.0%	0.0%	FY2013	4.5%	6.0%
FY2009	0.0%	0.0%	FY2014	4.5%	4.5%
FY2010	4.5%	11.0%	FY2015	4.5%	5.8%
FY2011	4.5%	4.5%	FY2016	4.5%	5.0%
FY2012	4.5%	4.5%	FY2017	4.5%	5.1%

Management's Base Case includes results from operational initiatives that have been described throughout this report and assumptions regarding the future cost of payroll, electricity and chemicals. The initiatives include those that PRASA is in the process of, or about to be, implementing. In the case of initiatives that have not yet been

implemented, Management's Base Case reflects the results of PRASA pilot tests and/or judgment regarding the potential results to be achieved on an accelerated timeframe. These results are reflected, primarily, in the operational initiatives included in the forecast revenues and expenses (payroll, electric power and chemicals).

PRASA has made a commitment to the implementation of the initiatives described in this report. While PRASA is committed to the initiatives, there is a possibility that the results projected to be achieved and more specifically, the timing of those results, will not be achieved. This possibility is reflected in the differences between Management's Base and Alternate Cases.

The assumptions common to both forecasts, with material distinctions noted, are as follows:

- Historical average annual consumption by account is expected to be maintained, while the number of customer accounts is expected to grow slightly over the forecast period resulting in annual revenue growth of 1%.
- PRASA will implement the rate increases and initiatives described in this report (as projected for both forecasts – see Table ES-4) in order to achieve increases in revenue and to manage expenses as presented in the ten-year forecast period.
- New revenue is expected to be generated from the enforcement of non-paying customers.
  - Base Case: Achieve the majority of the potential revenue increase from this program in FY2010
  - Alternate Case: Achieve the potential revenue increase ratably over the ten-year forecast period
- Uncollectible accounts, as a percent of revenues, are projected to decrease from 6.7% in FY2008 to 5.3% by FY2015 and remain at 5.3%.
- The new installation fees charged to developers are expected to be doubled in FY2009.
- Payroll and related expenses are projected to continue to increase between approximately 3% and 4%, subject to future changes in labor union contract terms.
  - Base Case: Achieve all of the anticipated reductions in headcount and an average increase of 2.9% over the forecast period.
  - Alternate Case: Achieve less than the anticipated reductions in headcount and an average increase of 3.3% over the forecast period.
- Electric power expense is forecasted to increase annually at the rate of:
  - Base Case: 2% (1% inflation and 1% growth)
  - Alternate Case: 5% (4% inflation plus 1% growth)
- Chemical expenses are forecasted to increase annually at the rate of:

- Base Case: 1% in both FY2008 and FY2009 and 3.5% thereafter
- Alternate Case: 1% in both FY2008 and FY2009 and 5% thereafter

- The costs associated with the Superaqueduct service contract are projected to increase approximately 3.2% annually under current contract terms.
- Insurance expenses are projected to increase annually at the rate of 2%.
- Other expenses are projected to increase annually at the rate of 2.7%.

E.8. Conclusions/Professional Opinion

Set forth below are the principal opinions which MPPR/Malcolm Pirnie has reached regarding the review of the PRASA water and wastewater system and its two alternate financial forecasts. For a complete understanding of the assumptions upon which these opinions are based, this report should be read in its entirety.

1. Although the size and scale of PRASA is rather unique compared to most water and wastewater utilities in the United States, the current PRASA organization has many characteristics that are similar to these utilities. All of the components necessary to operate a well-performing utility are found in PRASA's organization. The objectives and strategies developed and currently being implemented by the new management team to address historical problems and issues are appropriate and a positive step towards achieving PRASA's goal of being a world-class utility.
2. Although some individual facilities have staffing shortages, PRASA's overall staff levels have been historically high compared to industry standards. Through the planned closure of a number of older treatment plants and consolidation to regional treatment plants, it is expected that PRASA will be able to maintain or possibly reduce the existing staffing levels. Currently PRASA has sufficient staff to operate and maintain the System.
3. PRASA is continuing to improve the quality of its professional staff and has been successful in attracting well-qualified personnel from the private sector. To improve its recruitment efforts and attract and retain top quality professional staff, PRASA is providing comprehensive benefit packages and exceptions to its official salary scale. With the continuation of these practices, PRASA is continuing to fill key management positions with qualified personnel.
4. PRASA's staff needs additional training to improve effectiveness and increase safe work practices. PRASA recognizes this need and has recently implemented a new comprehensive training program which provided an average of 16 hours of training per employee in FY2007 compared to an average of 3 hours per employee in FY2005. As this program continues, the capabilities and performance of staff working at PRASA is expected to improve over time.
5. Although historically droughts are uncommon in Puerto Rico, much of the island has experienced drought conditions throughout 2007. In 1994, drought conditions required water rationing and reduced water sales. Since that time, PRASA has

constructed and continues to construct new reservoirs and WTPs to supplement its water supply system, and the 2007 water levels in its major reservoirs have remained significantly above the levels in 1994. The construction and operation of the Superaqueduct system, which was implemented after the 1994 drought, significantly mitigates PRASA's exposure to droughts in the Metro Region. Although an extended period of drought could again require water rationing, based on the information available and reviewed during the investigation period, the water supply system generally provides adequate water supply.

6. PRASA's amount of unaccounted for potable water production is very high (approximately 62% of the estimated water produced in FY2007 was not sold to customers). However, the information used to calculate unaccounted for water is not entirely reliable given both the lack of existing or reliable meters at water production facilities (almost half of WTPs and all wells lack adequate meters) and the age and condition of customer meters. Nonetheless, the significant amount of unaccounted for water illustrates a potential opportunity available to increase revenues and decrease expenses as a result of the initiatives to reduce unaccounted for water. It also supports the need, as proposed by PRASA, to embark on aggressive meter replacement programs at both the source and usage locations. PRASA has developed several initiatives to reduce unaccounted for water and has demonstrated a commitment to making future reductions in the amount of unaccounted for water. Successful implementation of PRASA's planned initiatives to reduce unaccounted for water levels is critical to PRASA's effective management of the System. Unaccounted for water levels are expected to remain above typical industry levels over the forecast period.

7. The condition of the facilities visited varied from new to those requiring significant capital upgrades. Certain facilities are operating out of compliance with discharge permit limits and drinking water standards. Despite numerous compliance problems, the facilities are generally producing and delivering potable water and conveying and treating wastewater to some level of competency. The condition of many facilities is not entirely unexpected due to insufficient commitment of capital and operational resources over the years. PRASA demonstrates a thorough understanding of the System shortcomings. The planned CIP along with the O&M initiatives are generally in alignment with the System needs. Review of PRASA's CIP showed that all of the WTPs and WWTPs that were considered unacceptable in terms of compliance currently have CIP projects identified to either rehabilitate or close the facility, thus addressing existing compliance problems. Once implemented as planned, these initiatives are expected to result in significant improvement in the performance of the System, including substantial advances towards complying with regulatory requirements.

8. PRASA's CIP addresses the requirements of the current Consent Decrees with the USEPA and PRDOH. However, some of the projects already constructed, such as new sludge treatment systems, are not operating in compliance with permit limits. Additional assessments and a combination of capital and operational improvements are expected to be required to bring these facilities into compliance. PRASA is

expected to be addressing the sludge treatment systems in an upcoming consent decree with the USEPA.

9. Given the age of many components of the System, it will be necessary for PRASA to maintain a commitment to implement its new preventive maintenance initiative (the IPMP) and continue focused corrective maintenance, repair, and replacement in order to continue to maintain and improve the condition of the System and provide a program for the long-term preservation of the System assets. PRASA has included in its CIP provisions for implementing the IPMP.

10. PRASA's recent annual rate of pipeline renewal and replacement is 1.6% of the total system (based on lengths of existing pipelines recorded in PRASA's GIS). Coupled with the recent sewer lining work, this translates to a complete system renewal in approximately 61 years if the current renewal and replacement rate continues. This renewal and replacement rate is generally consistent with industry practices. PRASA reports that these pipe repairs and replacements, coupled with aggressive management of leaks and overflows, have reduced the duration of water main leaks and both frequency and duration of sewer overflows, although levels are still significantly above typical industry standards. Therefore, PRASA will need to continue to provide significant maintenance and repair funding for the water distribution system and the wastewater collection system. PRASA is under a consent order with the USEPA to perform sanitary sewer system evaluations and to develop and implement sanitary sewer system repair plans for its wastewater collection systems. The extent of needed repairs resulting from these evaluations and their associated costs have not yet been determined.

11. The full impact of future regulations on the water treatment and supply system are not known at this time. In some cases, future regulations are expected to require minor process changes (such as moving the point of chlorination within a facility) and in other cases major capital improvements, such as construction of new treatment processes. Although, the existing CIP does not include projects specifically to address future regulations, PRASA is making allowances in its new designs to improve capabilities to meet certain future regulations. As the effects of future regulations become more defined, PRASA may need to modify its CIP to accommodate resulting needs.

12. PRASA has developed a thorough and comprehensive financial plan – Management's Base Case – reflecting internally-established goals relating to various initiatives expected to enhance overall financial performance of the organization and to do so within the 4.5% annual revenue increases after June 30, 2009 allowed under Resolution No. 2167. However, PRASA recognizes that in the event it is unable to achieve the expected results or that the timing of the initiatives is delayed, or both, it must have a workable plan to maintain its financial integrity. Management's Alternate Case is intended to do this and is based on reasonable assumptions including a revenue increase in FY2010 that is expected to generate revenues sufficient to meet the debt service and related requirements in support of the issuance of new bonds for its infrastructure program.

Based on a review of the aforementioned, MPPR/Malcolm Pirnie has concluded the following with regard to the PRASA-prepared forecasts covering the ten-year forecast period:

- Both the Base Case and the Alternate Case demonstrate that PRASA can achieve satisfaction of the requirements of the Trust Agreement going forward at rates and charges which appear reasonable and are likely to be sustainable in light of: (i) PRASA's recent experience in implementing rate increases to support System needs, (ii) the services which PRASA provides, (iii) and the obligations of PRASA to attain environmental compliance and maintain and modernize the System.
- Projections of revenues and expenses have been reviewed in comparison with historical data and have been found to be consistent with the stated assumptions.
- Projections of revenue and expenses as contained in the Base Case, are generally reasonable, although a number of these components are based upon projections of the successful implementation of programs and initiatives which have either not yet begun or which are in their early stages of implementation. MPPR/Malcolm Pirnie believes that, if these programs and initiatives are successfully implemented as described throughout the CER, the financial impacts on revenues and expenses are reasonably projected.
- To properly assess the impact of these initiatives and programs, PRASA developed an Alternate Case to demonstrate the effects on future performance if these initiatives and programs require additional time for implementation or are less successful than anticipated. MPPR/Malcolm Pirnie has reviewed the assumptions in the Alternate Case and the results of the modifications as described in Section E.7 and find that these assumptions and their potential impact on future financial performance are also reasonable.

PUERTO RICO AQUEDUCT AND SEWER AUTHORITY **EXHIBIT 1**
Water and Sewer System Page 1
Forecast of Financial Results of Operations (in Thousands)

MANAGEMENT'S BASE CASE

		FY 2007 Unaudited	FY 2008 Forecasted	FY 2009 Projected	FY 2010 Projected	FY 2011 Projected	FY 2012 Projected	FY 2013 Projected	FY 2014 Projected	FY 2015 Projected	FY 2016 Projected	FY 2017 Projected
1	**RATE REVENUES**											
2	Base Fee and Service Charges	$ 786,924	$ 775,000	$ 775,000	$ 775,000	$ 775,000	$ 775,000	$ 775,000	$ 775,000	$ 775,000	$ 775,000	$ 775,000
3	Average Annual Growth	-	7,750	15,578	23,483	31,468	39,533	47,678	55,905	64,214	72,606	81,082
4	Rate Increases	-	-	-	-	-	-	-	-	43,230	90,064	137,275
5	Rate Adjustments (1)	-	-	-	35,576	73,109	112,690	154,415	198,384	201,537	201,537	201,537
6	Operational Initiatives	-	3,875	11,625	34,875	38,750	40,688	42,625	44,563	46,500	48,438	50,375
7	Reserve for Uncollectible Accounts	(39,346)	(52,468)	(50,138)	(51,875)	(53,538)	(55,074)	(56,594)	(58,095)	(59,576)	(62,589)	(65,626)
8	Collection Lag	(19,000)	-	-	-	-	-	-	-	-	-	-
9	Actual Collections Adjustment	(40,000)	15,000	-	-	-	-	-	-	-	-	-
10	Subsidy	(2,500)	(3,300)	(3,630)	(3,993)	(4,392)	(4,832)	(5,315)	(5,846)	(6,431)	(7,074)	(7,781)
11	Other Income	12,576	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000
12	Special Assessments	14,588	15,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
13	Interest Income	-	1,102	5,070	6,209	7,110	8,815	9,701	10,956	12,467	13,848	14,814
14	**Total Operating Revenues, Net**	**$ 713,242**	**$ 774,959**	**$ 786,505**	**$ 852,275**	**$ 900,506**	**$ 949,819**	**$ 1,000,510**	**$ 1,053,866**	**$ 1,109,941**	**$ 1,164,830**	**$ 1,219,676**
15												
16	**OPERATING EXPENSES**											
17	Payroll and Related	$ 320,698	$ 327,633	$ 338,433	$ 346,138	$ 352,852	$ 358,492	$ 371,216	$ 384,360	$ 397,935	$ 411,954	$ 426,510
18	Electric Power	110,830	114,709	117,003	119,343	121,730	124,165	126,648	129,181	131,765	134,400	137,088
19	Chemicals	28,691	28,977	29,267	30,292	31,352	32,449	33,585	34,760	35,977	37,236	38,539
20	Superaqueduct Service Contract	20,557	21,000	21,686	22,354	23,057	23,795	24,569	25,380	26,230	27,120	28,039
21	Insurance	12,676	14,050	14,331	14,618	14,910	15,208	15,512	15,823	16,139	16,462	16,791
22	Other Expenses (contingencies, admin, etc.)	138,791	150,497	154,574	158,766	163,078	167,512	172,073	176,764	181,589	186,551	191,655
23	Capitalized Operating Expenses	(41,096)	(42,696)	(43,894)	(44,948)	(45,954)	(46,905)	(48,334)	(49,807)	(51,326)	(52,892)	(54,510)
24	**Total Operating Expenses**	**$ 591,147**	**$ 614,170**	**$ 631,400**	**$ 646,563**	**$ 661,025**	**$ 674,715**	**$ 695,269**	**$ 716,461**	**$ 738,309**	**$ 760,831**	**$ 784,112**
25												
26	**NET REVENUES AVAILABLE FOR DEBT SERVICE**	**$ 122,095**	**$ 160,789**	**$ 155,104**	**$ 205,712**	**$ 239,481**	**$ 275,104**	**$ 305,240**	**$ 337,405**	**$ 371,632**	**$ 403,999**	**$ 435,564**
27												
28	**DEBT SERVICE**											
29	1) Senior Bonds (2)	$ 14,096	$ 35,346	$ 48,569	$ 97,442	$ 121,952	$ 188,782	$ 202,719	$ 233,843	$ 263,377	$ 301,718	$ 320,969
30	2) Senior Bond DSRF Replenishment	-	-	-	-	-	-	-	-	-	-	-
31	3) Total Senior Subordinate Bond Debt Service (Local Banks)	13,269	15,903	17,892	17,912	17,934	-	-	-	-	-	-
32	4) Senior Subordinate DSRF Replenishment	-	-	-	-	-	-	-	-	-	-	-
33	5) Total Subordinate Bond Debt Service (New RD & SRF)	-	-	-	-	3,897	7,372	10,407	13,234	16,079	18,924	21,769
34	6) LOC Fees for Operating Reserve Funds	-	-	-	-	-	-	1,325	1,365	1,407	1,450	1,531
35	7) Capital Improvement Fund	-	-	-	-	-	-	-	-	-	-	-
36	8a) Commonwealth Guaranteed (1995 Bonds, Rural, SRF)	54,855	42,755	52,005	59,126	59,109	57,921	57,892	57,904	57,736	56,976	56,756
37	8b) Commonwealth Supported Obligations (SuperAqueduct)	27,203	54,451	27,240	27,237	27,714	13,441	20,273	21,014	21,367	21,749	22,170
38	Total Debt Service	**$ 109,423**	**$ 148,455**	**$ 145,706**	**$ 201,717**	**$ 230,606**	**$ 267,516**	**$ 292,616**	**$ 327,360**	**$ 359,966**	**$ 400,817**	**$ 423,195**
39												
40	**DEBT SERVICE COVERAGE:**											
41												
42	**Senior Debt (Level 1)**	**8.66**	**4.55**	**3.19**	**2.11**	**1.96**	**1.46**	**1.51**	**1.44**	**1.41**	**1.34**	**1.36**
43												
44	**Senior Subordinate Debt (Levels 1-3)**	**4.46**	**3.14**	**2.33**	**1.78**	**1.71**	**1.46**	**1.51**	**1.44**	**1.41**	**1.34**	**1.36**
45												
46	**Subordinate Debt (Levels 1-5)**	**4.46**	**3.14**	**2.33**	**1.78**	**1.67**	**1.40**	**1.43**	**1.37**	**1.33**	**1.26**	**1.27**
47												
48	**System Indebtedness (Levels 1-8a)**	**1.48**	**1.71**	**1.31**	**1.18**	**1.18**	**1.08**	**1.12**	**1.10**	**1.10**	**1.07**	**1.09**
49												
50	**Commonwealth Supported (Levels 1-8b)**	**1.12**	**1.08**	**1.06**	**1.02**	**1.04**	**1.03**	**1.04**	**1.03**	**1.03**	**1.01**	**1.03**
51	**ADDITIONAL BOND TESTS:**											
52												
53	**Net Revenue Estimate / Levels 1-2**	n/a	**135%**	**135%**	**131%**	**145%**	**133%**	**137%**	**133%**	**128%**	**125%**	**126%**
54	**Net Revenue Estimate / Levels 1-4**	n/a	**115%**	**119%**	**118%**	**133%**	**133%**	**137%**	**133%**	**128%**	**125%**	**126%**
55	**Net Revenue Estimate / Levels 1-5**	n/a	**115%**	**119%**	**118%**	**129%**	**128%**	**130%**	**125%**	**121%**	**118%**	**119%**

(1) The Base Annual Coefficient used to calculate the Rate Adjustment was determined based on audited net revenues (revenues less expenses) on accrual basis and debt service on cash basis for FY2007 (the base year).
(2) Debt service is net of the capitalized interest funded from the 2008 Series A Bonds and capitalized interest assumed to be funded for the projected bond issuances.

PUERTO RICO AQUEDUCT AND SEWER AUTHORITY
Water and Sewer System
CIP Uses and Sources of Funds (in Thousands)

EXHIBIT 1
Page 2

MANAGEMENT'S BASE CASE

		FY 2007 Unaudited	FY 2008 Forecasted	FY 2009 Projected	FY 2010 Projected	FY 2011 Projected	FY 2012 Projected	FY 2013 Projected	FY 2014 Projected	FY 2015 Projected	FY 2016 Projected	FY 2017 Projected
1	**CIP - USES OF FUNDS**											
2	Repair & Replacement of Fixed Assets	$ 82,877	$ 42,527	$ 85,864	$ 65,212	$ 63,179	$ 63,555	$ 67,387	$ 70,555	$ 72,490	$ 72,706	$ 72,706
3	CIP Infrastructure Projects	350,716	404,410	360,230	304,799	205,816	163,873	193,670	293,967	357,549	303,643	206,802
4	Recoverable Expenses Capitalized to CIP	41,096	42,696	43,894	44,948	45,954	46,905	48,334	49,807	51,326	52,892	54,510
5	**Total Projected Capital Expenses**	**$ 474,689**	**$ 489,633**	**$ 489,988**	**$ 414,959**	**$ 314,949**	**$ 274,334**	**$ 309,391**	**$ 414,330**	**$ 481,365**	**$ 429,241**	**$ 334,018**
6												
7	**CIP - SOURCES OF FUNDS**											
8	Surplus Cash Available for Capital Projects	8,356	5,829	3,357	3,995	1,553	7,588	6,518	10,045	7,025	3,183	9,196
9	Federal Funds - Federal Matching	4,591	25,305	25,305	9,434	-	-	-	-	-	-	-
10	Federal Funds - Rural Development Bonds	24,023	47,384	47,384	30,945	12,610	13,089	13,089	13,089	13,089	13,089	13,089
11	Federal Funds - State Revolving Funds Borrowings	49,179	67,846	67,846	68,640	44,995	46,705	46,705	46,705	46,705	46,705	46,705
12	BDE Restricted Funds	20,041	-	-	-	-	-	-	-	-	-	-
13	PRIFA Contributions	35,644	88,356	-	-	-	-	-	-	-	-	-
14	Release of BAN Reserve	-	8,063	-	-	-	-	-	-	-	-	-
15	Interim Financings & Future Bond Proceeds	227,736	-	346,096	301,945	255,792	206,952	243,079	344,491	414,546	366,264	265,028
16	Carryover of BAN Proceeds to Future Years	(108,608)	108,608	-	-	-	-	-	-	-	-	-
17	Bond Proceeds	-	88,242	-	-	-	-	-	-	-	-	-
18	Working Capital Line of Credit	-	-	-	-	-	-	-	-	-	-	-
19	Draws on Existing GDB Lines of Credits	213,727	50,000	-	-	-	-	-	-	-	-	-
20	**Total Financing Activity**	**$ 474,689**	**$ 489,633**	**$ 489,988**	**$ 414,959**	**$ 314,949**	**$ 274,334**	**$ 309,391**	**$ 414,330**	**$ 481,365**	**$ 429,241**	**$ 334,018**

PUERTO RICO AQUEDUCT AND SEWER AUTHORITY **EXHIBIT 2**
Water and Sewer System Page 1
Forecast of Financial Results of Operations (in Thousands)

MANAGEMENT'S ALTERNATE CASE

		FY 2007 Unaudited	FY 2008 Forecasted	FY 2009 Projected	FY 2010 Projected	FY 2011 Projected	FY 2012 Projected	FY 2013 Projected	FY 2014 Projected	FY 2015 Projected	FY 2016 Projected	FY 2017 Projected
1	**RATE REVENUES**											
2	Base Fee and Service Charges	$ 786,924	$ 775,000	$ 775,000	$ 775,000	$ 775,000	$ 775,000	$ 775,000	$ 775,000	$ 775,000	$ 775,000	$ 775,000
3	Average Annual Growth	-	7,750	15,578	23,483	31,468	39,533	47,678	55,905	64,214	72,606	81,082
4	Rate Increases	-	-	-	86,964	86,964	86,964	140,266	140,266	152,079	157,059	206,893
5	Rate Adjustments (1)	-	-	-	-	35,932	73,840	73,840	114,183	156,712	201,529	204,743
6	Operational Initiatives	-	3,875	7,750	11,625	15,500	19,375	23,250	27,125	31,000	34,875	34,875
7	Reserve for Uncollectible Accounts	(39,346)	(52,468)	(49,895)	(53,555)	(55,086)	(56,599)	(58,832)	(60,185)	(62,134)	(65,404)	(68,647)
8	Collection Lag	(19,000)	-	-	-	-	-	-	-	-	-	-
9	Actual Collections Adjustment	(40,000)	15,000	-	-	-	-	-	-	-	-	-
10	Subsidy	(2,500)	(3,300)	(3,630)	(3,993)	(4,392)	(4,832)	(5,315)	(5,846)	(6,431)	(7,074)	(7,781)
11	Other Income	12,576	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000
12	Special Assessments	14,588	15,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
13	Interest Income	-	1,102	5,105	6,155	7,063	8,733	9,612	10,864	12,365	13,749	14,735
14	**Total Operating Revenues, Net**	**$ 713,242**	**$ 774,959**	**$ 782,907**	**$ 878,679**	**$ 925,449**	**$ 975,013**	**$ 1,038,499**	**$ 1,090,312**	**$ 1,155,806**	**$ 1,215,340**	**$ 1,273,900**
15												
16	**OPERATING EXPENSES**											
17	Payroll and Related	$ 320,698	$ 327,633	$ 340,053	$ 349,458	$ 357,941	$ 365,402	$ 380,183	$ 395,527	$ 411,456	$ 427,989	$ 445,186
18	Electric Power	110,830	116,150	121,957	128,055	134,458	141,181	148,240	155,652	163,435	171,606	180,187
19	Chemicals	28,691	28,977	29,267	30,731	32,267	33,880	35,575	37,353	39,221	41,182	43,241
20	Superaqueduct Service Contract	20,557	21,000	21,686	22,354	23,057	23,795	24,569	25,380	26,230	27,120	28,039
21	Insurance	12,676	14,050	14,331	14,618	14,910	15,208	15,512	15,823	16,139	16,462	16,791
22	Other Expenses (contingencies, admin, etc.)	138,791	150,497	154,574	158,766	163,078	167,512	172,073	176,764	181,589	186,551	191,655
23	Capitalized Operating Expenses	(41,096)	(42,790)	(44,321)	(45,759)	(47,171)	(48,554)	(50,450)	(52,422)	(54,475)	(56,609)	(58,831)
24	**Total Operating Expenses**	**$ 591,147**	**$ 615,517**	**$ 637,547**	**$ 658,223**	**$ 678,540**	**$ 698,425**	**$ 725,701**	**$ 754,077**	**$ 783,595**	**$ 814,301**	**$ 846,268**
25												
26	**NET REVENUES AVAILABLE FOR DEBT SERVICE**	**$ 122,095**	**$ 159,442**	**$ 145,360**	**$ 220,455**	**$ 246,909**	**$ 276,588**	**$ 312,798**	**$ 336,235**	**$ 372,211**	**$ 401,039**	**$ 427,632**
27												
28	**DEBT SERVICE (Seniority level indicated by number)**											
29	1) Senior Bonds (2)	$ 14,096	$ 35,346	$ 36,873	$ 108,330	$ 122,962	$ 194,831	$ 208,275	$ 231,750	$ 261,206	$ 299,319	$ 318,617
30	2) Senior Bond DSRF Replenishment	-	-	-	-	-	-	-	-	-	-	-
31	3.) Senior Subordinate Debt Service											
32	*Term Loan (Local PR Bank Syndicate) - Principal*	-	-	2,564	2,748	2,944	-	-	-	-	-	-
33	*Term Loan (Local PR Bank Syndicate) - Interest*	13,269	15,903	15,328	15,164	14,990	-	-	-	-	-	-
31	3) Total Senior Subordinate Bond Debt Service (Local Banks)	13,269	15,903	17,892	17,912	17,934	-	-	-	-	-	-
32	4) Senior Subordinate DSRF Replenishment	-	-	-	-	-	-	-	-	-	-	-
33	5) Total Subordinate Bond Debt Service (New RD & SRF)	-	-	-	-	3,897	7,372	10,407	13,234	16,079	18,924	21,769
34	6) LOC Fees for Operating Reserve Funds	-	-	-	-	-	-	1,395	1,449	1,506	1,565	1,626
35	7) Capital Improvement Fund	-	-	-	-	-	-	-	-	-	-	-
36	8a) Commonwealth Guaranteed (1995 Bonds, Rural, SRF)	54,855	42,755	52,005	59,126	59,109	57,921	57,892	57,904	57,736	56,976	56,756
37	8b) Commonwealth Supported Obligations (SuperAqueduct)	27,203	54,451	27,240	27,237	27,714	13,441	20,273	21,014	21,367	21,749	22,170
38	Total Debt Service	**$ 109,423**	**$ 148,455**	**$ 134,010**	**$ 212,605**	**$ 231,616**	**$ 273,565**	**$ 298,242**	**$ 325,351**	**$ 357,894**	**$ 398,533**	**$ 420,938**
39												
40	**DEBT SERVICE COVERAGE:**											
41												
42	**Senior Debt (Level 1)**	**8.66**	**4.51**	**3.94**	**2.04**	**2.01**	**1.42**	**1.50**	**1.45**	**1.42**	**1.34**	**1.34**
43												
44	**Senior Subordinate Debt (Levels 1-3)**	**4.46**	**3.11**	**2.65**	**1.75**	**1.75**	**1.42**	**1.50**	**1.45**	**1.42**	**1.34**	**1.34**
45												
46	**Subordinate Debt (Levels 1-5)**	**4.46**	**3.11**	**2.65**	**1.75**	**1.71**	**1.37**	**1.43**	**1.37**	**1.34**	**1.26**	**1.26**
47												
48	**System Indebtedness (Levels 1-8a)**	**1.48**	**1.70**	**1.36**	**1.19**	**1.21**	**1.06**	**1.13**	**1.10**	**1.11**	**1.06**	**1.07**
49												
50	**Commonwealth Supported (Levels 1-8b)**	**1.12**	**1.07**	**1.08**	**1.04**	**1.07**	**1.01**	**1.05**	**1.03**	**1.04**	**1.01**	**1.02**
51	**ADDITIONAL BOND TESTS:**											
52												
53	**Net Revenue Estimate / Levels 1-2**	n/a	**135%**	**133%**	**160%**	**154%**	**137%**	**144%**	**135%**	**132%**	**127%**	**128%**
54	**Net Revenue Estimate / Levels 1-4**	n/a	**115%**	**117%**	**144%**	**141%**	**137%**	**144%**	**135%**	**132%**	**127%**	**128%**
55	**Net Revenue Estimate / Levels 1-5**	n/a	**115%**	**117%**	**144%**	**137%**	**131%**	**137%**	**128%**	**124%**	**120%**	**120%**

(1) The Base Annual Coefficient used to calculate the Rate Adjustment was determined based on audited net revenues (revenues less expenses) on accrual basis and debt service on cash basis for FY2007 (the base year).
(2) Debt service is net of the capitalized interest funded from the 2008 Series A Bonds and capitalized interest assumed to be funded for the projected bond issuances.

PUERTO RICO AQUEDUCT AND SEWER AUTHORITY
Water and Sewer System
CIP Uses and Sources of Funds (in Thousands)

EXHIBIT 2
Page 2

MANAGEMENT'S ALTERNATE CASE

		FY 2007 Unaudited	FY 2008 Forecasted	FY 2009 Projected	FY 2010 Projected	FY 2011 Projected	FY 2012 Projected	FY 2013 Projected	FY 2014 Projected	FY 2015 Projected	FY 2016 Projected	FY 2017 Projected
1	**CIP - USES OF FUNDS**											
2	Repair & Replacement of Fixed Assets	$ 82,877	$ 42,527	$ 85,864	$ 65,212	$ 63,179	$ 63,555	$ 67,387	$ 70,555	$ 72,490	$ 72,706	$ 72,706
3	CIP Infrastructure Projects	350,716	404,316	359,802	303,988	204,599	162,225	191,554	291,352	354,400	299,926	202,481
4	Recoverable Expenses Capitalized to CIP	41,096	42,790	44,321	45,759	47,171	48,554	50,450	52,422	54,475	56,609	58,831
5	**Total Projected Capital Expenses**	**$ 474,688**	**$ 489,633**	**$ 489,987**	**$ 414,959**	**$ 314,949**	**$ 274,334**	**$ 309,391**	**$ 414,330**	**$ 481,365**	**$ 429,241**	**$ 334,018**
6												
7	**CIP - SOURCES OF FUNDS**											
8	Surplus Cash Available for Capital Projects	8,355	5,829	5,308	7,850	7,971	3,023	8,449	10,884	9,677	2,506	3,522
9	Federal Funds - Federal Matching	4,591	25,305	25,305	9,434	-	-	-	-	-	-	-
10	Federal Funds - Rural Development Bonds	24,023	47,384	47,384	30,945	12,610	13,089	13,089	13,089	13,089	13,089	13,089
11	Federal Funds - State Revolving Funds Borrowings	49,179	67,846	67,846	68,640	44,995	46,705	46,705	46,705	46,705	46,705	46,705
12	BDE Restricted Funds	20,041	-	-	-	-	-	-	-	-	-	-
13	PRIFA Contributions	35,644	88,356	-	-	-	-	-	-	-	-	-
14	Release of BAN Reserve	-	8,063	-	-	-	-	-	-	-	-	-
15	Interim Financings & Future Bond Proceeds	227,736	-	344,145	298,091	249,373	211,516	241,148	343,652	411,895	366,941	270,702
16	Carryover of BAN Proceeds to Future Years	(108,608)	108,608	-	-	-	-	-	-	-	-	-
17	Bond Proceeds	-	88,242	-	-	-	-	-	-	-	-	-
18	Working Capital Line of Credit	-	-	-	-	-	-	-	-	-	-	-
19	Draws on Existing GDB Lines of Credits	213,727	50,000	-	-	-	-	-	-	-	-	-
20	**Total Financing Activity**	**$ 474,688**	**$ 489,633**	**$ 489,987**	**$ 414,959**	**$ 314,949**	**$ 274,334**	**$ 309,391**	**$ 414,330**	**$ 481,365**	**$ 429,241**	**$ 334,018**

1. Introduction and Purpose

1.1. Introduction

Puerto Rico Aqueduct and Sewer Authority (PRASA) is a public utility responsible for the production and distribution of potable water and the collection, treatment, and disposal of a large portion of domestic and industrial pretreated wastewaters in Puerto Rico. Since PRASA is the only water and wastewater utility in Puerto Rico, it serves water to approximately 97% of the population and therefore can be considered a monopoly. While this is positive in terms of sales of services it also makes PRASA a critical entity for the well being of Puerto Rico. The effective operation of this vital public service is essential to the health and economic prosperity of Puerto Rico and its residents.

In order to maintain, grow and improve its infrastructure, PRASA has developed a comprehensive Capital Improvement Program (CIP) for the ten-year period of fiscal years (FYs) 2008-2017. PRASA plans to issue debt in early 2008, its first issuance in almost twenty years, and use the proceeds to repay and refinance existing PRASA debt and provide funding for the implementation of capital improvements to its water and wastewater systems (collectively, the "System").

The CIP consists of almost 600 projects and consists of upgrades to existing treatment plants, consolidation of some smaller plants, addition of new treatment plants, and improvements to the sanitary sewer collection system and water supply and distribution system. It also includes vehicle fleet replacements, implementation of preventive maintenance programs, technology improvements in telemetry and billing, equipment renewals and replacements, and various other projects related to the System.

1.2. Overview of PRASA's System

PRASA serves a population of approximately 4 million residents plus approximately 5 million visitors annually[2]. PRASA provides water and wastewater service to about 97% and 55% of Puerto Rico's population, respectively. PRASA provides water and wastewater service throughout the island, which is approximately 35 miles wide and 100 miles long. Due to the fact that Puerto Rico is an island with varied topography, isolated demographic distributions, and a diverse mix of users, PRASA has a somewhat fragmented and localized system of water sources, treatment systems and delivery systems. As a result, PRASA has many more treatment facilities than most utilities serving a similar number of customers. This results in a higher degree of diversity in PRASA's assets in terms of size, treatment technologies, and age when compared to

[2] Source: Puerto Rico Tourism Company statistics for fiscal years 2004 through 2006.

systems in the United States (U.S.) and Canada, which tend to have more centralized systems with larger regional facilities. These facts add complexity to the management of the System and contribute to higher operation and maintenance (O&M) costs compared to other utilities serving similar populations.

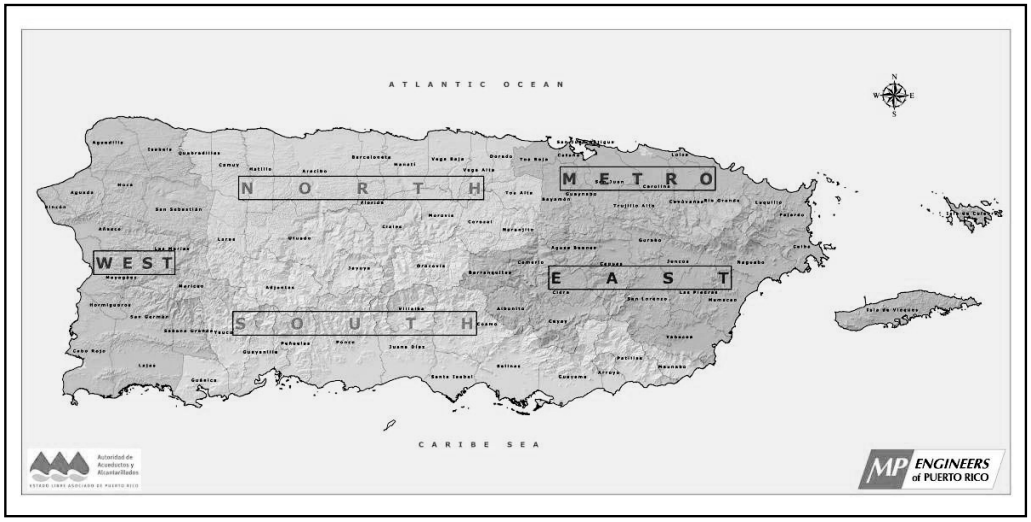
The Metro Region, which includes San Juan, has fewer and larger treatment plants than the rest of the island and therefore resembles large utilities in the U.S. more closely. The other Regions are composed of numerous, smaller treatment plants that serve small communities that are not interconnected. Where feasible, PRASA is looking to consolidate some of the smaller facilities and serve multiple communities with larger regional plants, but there are limited opportunities to do this in a cost effective manner due to the geographic spread of the communities and Puerto Rico's topography.

As of the time of this assessment, PRASA operates throughout the island 129 water treatment plants (WTPs), 349 wells, 1,057 pump stations, several large dams, over 600 wastewater pumping stations, and 62 wastewater treatment plants (WWTPs). The WWTPs discharge to a combination of shallow freshwater streams and deep ocean outfalls. Thus, PRASA has the very complex challenge of planning for a wide variety of water and wastewater assets and conducting very different types of operations and maintenance activities within the same organization.

The performance of the System has varied over the years due to aging of its infrastructure, the effects of new regulatory requirements, the varying use of public and private sector management, and the lack of sufficient capital for about 20 years. The combination of these factors has adversely affected PRASA's ability to address the System's needs in a timely manner.

Recognizing the need to make major changes to the System and significantly improve overall System performance, the Government of Puerto Rico embarked on a focused and comprehensive program starting in late 2003 to completely overhaul the utility, consistent with world-class utility standards. This resulted in the enactment of Act No. 92 on March 31, 2004 that significantly restructured the management of PRASA. Such restructuring included the division of the island into five operational Regions (North, South, East, West and Metro) as shown in Figure 1-1.

Figure 1-1: PRASA Regions



1.3. Purpose

MP Engineers of Puerto Rico, PSC (MPPR) and its subcontractor Malcolm Pirnie, Inc. has been retained by PRASA to prepare this Consulting Engineer's Report (CER) in support for the issuance of new debt for PRASA's infrastructure program. MPPR/Malcolm Pirnie (collectively, the "Consulting Engineer") has prepared this CER under a subcontract with CPM-MPPR Infrastructure Managers, PSC (CPM-MPPR). CPM-MPPR is one of the five consortiums providing program management services to PRASA for the development and implementation of its CIP. This CER presents MPPR/Malcolm Pirnie's opinion with respect to the technical, operational and financial issues and related matters of the System and organizational structure of PRASA, as they relate to the issuance of the new debt.

The MPPR/Malcolm Pirnie team has a proven record of success working on major projects in the U.S., including the Commonwealth of Puerto Rico, and international locations. Malcolm Pirnie is one of the largest consulting firms in the U.S. concentrating primarily on environmental disciplines. The firm provides wastewater treatment and collection engineering services, drinking water consulting and engineering services, solid and hazardous waste management, air pollution control services, financial consulting, and general management consulting services. For over a century, the firm has provided environmental engineering, science and consulting services to over 5,000 public and private clients. Malcolm Pirnie has provided extensive consulting services in connection with the issuance of local government debt for financing of capital improvement

programs. MPPR and Malcolm Pirnie are privately owned by the management of each firm.

Any statements in this CER involving estimates or matters of opinion, whether or not so specifically designated, are intended as such, and not as representations of fact. Changed conditions occurring or becoming known after the issuance of this CER could affect the material presented to the extent of such changes. MPPR/Malcolm Pirnie has no responsibility to update this report beyond the date of its issuance.

MPPR/Malcolm Pirnie has performed inspections of the major assets and a sampling of the minor assets that comprise the System. MPPR/Malcolm Pirnie has also evaluated the CIP, the regulatory compliance situation, the organizational structure, and PRASA's financial situation and projections. MPPR/Malcolm Pirnie has not independently verified the accuracy of the reports and other information provided by PRASA for the conduct of this assignment. To the extent that the information provided to MPPR/Malcolm Pirnie by PRASA is not accurate, the conclusions and recommendations contained in this CER may vary and are subject to change.

1.4. Conventions

PRASA's fiscal year begins on July 1st and ends June 30th. Throughout this report, fiscal year is identified as "FY" followed by the calendar year in which the fiscal year ends, i.e., FY2008 is the fiscal year from July 1, 2007 through June 30, 2008.

1.5. Acronyms

Appendix A contains a listing of acronyms or abbreviations of terms used in this report.

2. Organization and Management

2.1. Institutional Background

Since its creation in 1945, PRASA has been generally managed and operated as a public corporation, except for a period from 1995 through early 2004 where PRASA engaged private firms to assist with the management, operation, and maintenance of the utility and System. In 1995, PRASA engaged a private management company to operate and maintain the System, while the responsibility for capital improvements remained the responsibility of PRASA's public sector management. This came as a result of the need to improve the effectiveness and efficiency of PRASA's system and services.

In 1998, looking to improve its efficiency in executing capital improvement projects, PRASA also delegated the responsibility for the development of certain large capital projects to the Puerto Rico Infrastructure Financing Authority (PRIFA) via an inter-governmental agency agreement. Responsibility for the operation and maintenance of the System remained with the private management company during this period and such firm's management responsibilities were expanded during 1999. In 2002, PRASA changed private management companies as part of a competitive bidding process and the private company's responsibilities were further expanded to include the management of part of the capital program. PRIFA retained responsibility for the implementation of the larger portion of the capital improvement program.

These privatization efforts, while improving certain areas of PRASA's operations, did not yield the expected results. Additionally, in 2004, a significant contractual discrepancy between PRASA and the selected private company resulted in the cancellation of the contract.

On March 31, 2004, the Commonwealth of Puerto Rico approved Commonwealth Act No. 92 (Act No. 92) ordering the restructuring of PRASA by transferring operations and maintenance responsibility back to public sector management and decentralizing the System's administration into five Regions (North, South, East, West, and Metro).

Specifically, Act No. 92 included the following legislated actions:

- Modified PRASA's organizational and operational structure.
- Transitioned PRASA back to public sector management.
- Established a nine member Board of Directors (Board).
- Decentralized the system administration by creating five operational Regions.
- Created an Infrastructure Directorate responsible for the development and implementation of the CIP.

- Established seven new management positions, each with a six year appointment named by the Board.

The goal of this de-privatization and restructuring was to achieve the mission of the utility to provide a service of excellence in the provision of drinking water and the treatment of wastewater. PRASA also began transitioning the responsibility for implementing capital programs from PRIFA back to PRASA so that capital and operational programs were unified under single management.

As mentioned above, Act No. 92 established the requirements for a nine-member Board and created the position of the Executive President, the Executive Director of Infrastructure, and five Regional Executive Directors. Act No. 92 also specifies that these Executive management positions are appointed to six-year terms. This term duration intends to provide stability and continuity during a change in government administration and isolate these appointments from the political pressures that could influence appointment decisions during an election period.

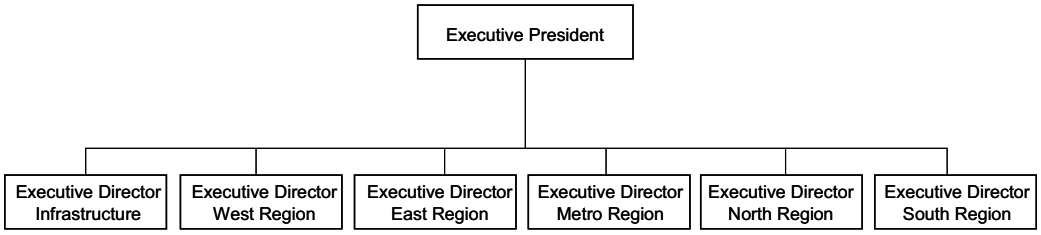
The five Regions included the four regions that previously existed (North, South, East, and Metro) and a newly created West Region. The West Region was developed by taking the far western parts of the North and South Regions.

From a financial standpoint, PRASA had historically been heavily subsidized by the Commonwealth's General Fund. There were few incentives for PRASA to provide cost-effective services. Additionally, PRASA had historically lacked the necessary funding to properly maintain and improve its infrastructure. In 2005, PRASA's Board of Directors approved a new rate structure which allowed PRASA to significantly increase its revenues. Prior to 2005, PRASA had not increased rates since 1986. Rates were raised in two increments: an initial minimum raise in the Base Fee in 2005 of 65% and a second increase in 2006 of an additional 38%. Both raises together raised the minimum Base Fee by a total of 128%. PRASA is now a self-sufficient public corporation and has since stopped receiving subsidies from the Commonwealth. This change has required PRASA to be financially accountable and has created an incentive for PRASA to improve the management of its operations. To achieve these improvements, PRASA's management has promoted the development of several initiatives. Some of these major initiatives are documented in Section 2.4.

2.2. Current PRASA Organization

Act No. 92 establishes the requirements for a nine-member Board and also creates the position of the Executive President, the Executive Director of Infrastructure, and the five Regional Executive Directors. Figure 2-1 outlines PRASA's legislated executive managerial structure.

Figure 2-1: PRASA Legislated Executive Structure – Management Positions



Details about the roles and responsibilities of the legislated positions are described in Act No. 92. Key roles and responsibilities for certain legislated positions and other Executive Staff are provided below.

2.2.1. Board of Directors

The Board consists of nine members of which five are private citizens appointed by the Governor with advice and consent of the Senate, and four are Executive Directors of other government agencies or professional organizations. The term of each Board member varies according to Act No. 92.

The Board is responsible for setting or approving all major decisions taken by PRASA, including overall institutional policies, PRASA strategies and programs, executive and key management manpower recruitments and removals, union contracts approval, professional services contracts approval beyond the limits accorded to the Executive President, and all contract changes that are beyond the limits accorded to the Executive President. As is common with most Boards, by-laws and rules for the Board have been established to facilitate prudent governance approaches.

The Board is assisted by an Internal Audit Unit which has responsibility to conduct institutional audits for the Board, and by a Board Secretariat, which maintains Board records, amongst other responsibilities.

2.2.2. The Executive Staff of PRASA

PRASA is managed by an Executive staff composed of seven positions that provide the day to day management oversight and coordination for all institutional activities. These positions are presented in Figure 2-1.

2.2.2.1. Executive President

The Executive President of PRASA is its Chief Executive Officer (CEO). The Executive President is a legislated position and is hired directly by the Board and reports to the

Board. The Executive President is appointed by the Board for a period of six years which allows the term to extend beyond the four-year political election cycle. The Executive President has overall responsibility for planning, managing, and implementing all institutional decisions, including the development of public policy, once approved by the Board. As CEO, the Executive President has complete control of the PRASA's performance as a public agency. The Executive President is accountable for implementing PRASA's programs, its administration, and its finances. All Executive Directors and key Managers report directly to the Executive President. The Executive President's authority to financially bind PRASA without having the Board's prior approval varies from up to $150,000 for equipment repairs to up to $1 Million for purchasing chemicals.

2.2.2.2. The Executive Director for Infrastructure

The Executive Director for Infrastructure is a legislated position and is hired by the Board at the recommendation of the Executive President. The Executive Director for Infrastructure is also appointed for a period of six years. The Executive Director for Infrastructure reports directly to the Executive President. The Executive Director for Infrastructure has overall responsibility for planning, implementing and managing PRASA's CIP.

2.2.2.3. The Regional Executive Directors

The Regional Executive Directors are also legislated positions and are named by the Board at the recommendation of the Executive President. They are appointed for a period of six years. The Regional Executive Directors report directly to the Executive President. They have overall responsibility for all services being provided by PRASA in their geographically defined jurisdiction, including operations, maintenance, administration, and finance.

2.2.2.4. Management Succession

Since Act No. 92 was implemented in 2004, PRASA has gone through several management changes at many levels of its organization including the Executive level. In general, these changes and their resulting successions and transitions have been smooth and have not affected the stability of the organization or the continuity of the operations. For example, in January 2007, the first Executive Director appointed under Act. No. 92 was appointed as Executive Director of the Puerto Rico Electric Power Authority (PREPA) and was replaced by the Executive Director for Infrastructure at the time. This event resulted in series of changes within PRASA's management that included the replacement of the Executive Director for Infrastructure with the Engineering Director as well as several other changes. The transition period for these successions was well managed and continuity was ensured for all the initiatives that had begun in the prior three years.

2.3. Current Management Structures

A utility of PRASA's size requires a management structure that is more comprehensive than what is required by legislation. In the past, PRASA operated as a large centralized agency, having most functions centralized and managing only day to day operations on a regional basis. This resulted in high levels of bureaucracy and removed many critical functions from the customers' reach. However, after Act No. 92 was implemented, PRASA's new executive management developed a new integrated organizational structure where certain functions remained centralized and others were de-centralized or regionalized. This effort has resulted in a matrix type organization with two main structural elements:

1. A regional element defined by geography and responsible for executing initiatives and managing operations in each of PRASA's five operational Regions. Regionalized functions generally are activities better handled on a regional basis, and include: management of system operations and maintenance, customer service in commercial offices, local compliance monitoring and implementation, engineering (support for local projects), regional administration and finance and preventive maintenance.

2. A centralized functional element that includes functions that generally dictate initiatives and standards and provides functional support to all the Regions or execute administrative duties better handled on an island wide basis. Centralized functions include: central administration and finance, central communications, information systems, human and labor relations, legal affairs, management of infrastructure programs, environmental compliance (policy and guidelines), purchasing and logistics, emergency management and corporate security.

MPPR/Malcolm Pirnie has summarized PRASA's current centralized and regional management structure in detail in a supplementary report to this CER entitled: Summary of PRASA's Organizational Structure.

MPPR/Malcolm Pirnie's analysis has determined that PRASA's current structure is well-developed and is consistent with the organizational structures found at utilities of similar size. The current decentralized approach of having front-line management execute certain activities enables PRASA to provide better and more agile services to its customers. Also, the selected functional disciplines that have been centralized help PRASA standardize and develop common initiatives and policies to be executed across all Regions while providing significant synergies in management cost.

2.3.1. Current Senior Management Team

PRASA's senior management team has been largely recruited from private sector entities, and each senior manager has a demonstrated history of success in top internationally recognized companies. Such personnel have brought a results-oriented business mindset to PRASA, which serves as the basis for the comprehensive improvement initiatives. Backgrounds and descriptions of key senior management personnel are provided in the paragraphs that follow.

Eng. José Ortíz Vázquez, Executive President, was appointed to that position in January 2007. Prior to his appointment, he was the Authority's Executive Director for Infrastructure, from 2004. Before that he spent 14 years in the manufacturing industry, having served as Engineering Director for multinational firms including Colgate-Palmolive and Unilever. He holds a Bachelor's Degree in Electrical Engineering from the Mayagüez Campus of the University of Puerto Rico and a Master's Degree in Business Administration from the University of Turabo.

Andrés García, Executive Vice President, assumed such position in August 2006. From February 2005 until assuming his current position, he worked as Executive Assistant to the Executive President of the Authority. Prior to that, he served as Assistant Advisor to the Governor on Environmental and Infrastructure Affairs and as Executive Assistant to the Governor's Chief of Staff from 2002-2003 and from 2003-2004, respectively. He holds a Bachelor's Degree in Environmental Sciences from the Río Piedras Campus of the University of Puerto Rico and a Master's Degree in Natural Resources Management from the University of Connecticut.

Eng. Alberto Lázaro, Executive Director for Infrastructure, assumed such position in January 2007 after having served as the Authority's Director of Engineering for two years. Prior to that, he served as Deputy Secretary for the Puerto Rico Department of Natural and Environmental Resources for two years and as an environmental engineer consultant for the private sector industry for seven years. He holds a Bachelor's Degree in Civil Engineering from the Cornell University in New York and a Master's Degree in Environmental Engineering from the Massachusetts Institute of Technology (MIT).

Efraín Acosta Reboyras, Executive Director of Administration and Finance, was appointed to such position in April 2004. Prior to that, he served as Deputy Executive Director of Finance for Puerto Rico Industrial Development Company. Before joining the government, Mr. Acosta worked in various senior financial and accounting positions in the private sector for companies such as 3M, Bacardi Corporation, Haskins & Sells and ITT Corporation. Mr. Acosta holds a Bachelor's Degree in Business Administration from the University of Puerto Rico and has pursued his Masters of Business Administration degree from the Inter American University of Puerto Rico.

Raquel Matos, Esq., General Legal Counsel, assumed such position in November 2006 after having served as the Authority's Internal Auditor for almost two years. Prior to that, she served as Legal Counsel to the Office of the Comptroller of the Commonwealth. Ms. Matos holds a Juris Doctor from the University of Puerto Rico School of Law and a Bachelor's Degree in Business Administration, with a major in accounting, from the University of Puerto Rico, Río Piedras Campus. She is also a CPA.

Belkin Nieves, Esq., Human Resources and Labor Relations Director, was appointed to such position in November 2004. Ms. Nieves joined the Authority in February 2003 as Auxiliary Chief Legal Counsel. In April 2004 she became the Labor Relations Director before assuming her current position. From 2001-2003 she worked as an associate in a San Juan law firm. Ms. Nieves obtained a Juris Doctor from Inter American University of Puerto Rico and a Bachelor's Degree in labor relations from the Río Piedras Campus of the University of Puerto Rico.

Eng. José Capeles, Executive Director of Environmental Compliance and Quality Control, was appointed to such position in February 2007, after having served as the Authority's Deputy Executive Director for Infrastructure since 2004. Prior to that, he served as Vice President of Compliance and Planning for the Authority, directing and administering the private operator's service contracts related obligations. Eng. Capeles joined the public sector in 2001 after 25 years of service in various technical and executive management positions for multinational manufacturing and marketing firms, including Sunoco and Enron. He holds a Bachelor's Degree in Chemical Engineering from the University of Puerto Rico, Mayagüez Campus, and several post-graduate courses including an Executive Business Program from Dartmouth College, New Hampshire.

Eng. Gerardo González, Executive Director for the Metro Region, was appointed to such position in December 2005. Eng. González has been with the Authority since 2004. Before 2004, he worked with Ondeo de Puerto Rico (a subsidiary of Suez Environnement) as the liaison between Ondeo and the Authority and during 2000-2003, he worked for Compañía de Aguas de Puerto Rico (a subsidiary of Vivendi) as the liaison between Compañía de Aguas and the Authority, all in connection with the Authority's operating agreements with these entities. Eng. González received his Bachelor's Degree in Civil Engineering from the Mayagüez Campus of the University of Puerto Rico.

Israel Hilerio, Executive Director for the North Region, was appointed to that position in February 2004. From 2003-2004, he served as the Director of Finance and Administration for the North Region. Prior to working with the Authority, Mr. Hilerio worked as Vice-President and General Manager for Cervecería India, Inc. for 22 years. Mr. Hilerio obtained his Bachelor's Degree in Accounting from the University of Puerto

Rico and a Master's Degree in Business Administration, specializing in finance, at the Inter American University of Puerto Rico.

Antonio Matías Rosario, Executive Director for the West Region, was appointed to such position in 2005. Mr. Matías has over 25 years' experience in the electronics manufacturing industry, having worked for Smart Modular Technologies, Inc. and Digital Equipment Corp. Mr. Matías has pursued studies for a Bachelor's Degree in Business Administration.

Juan Felipe Santos Cedeño, Executive Director for the South Region, has held such position since 2003. Before joining the Authority, Mr. Santos worked for DANA Engine Management Group in Ponce, Puerto Rico for twenty-three years, where he held various positions. He was Division Manager of the Engine Division before leaving DANA. Mr. Santos obtained a dual Bachelor's Degree in Business Administration and Accounting from the Pontifical Catholic University of Puerto Rico and is currently completing his MBA at the Inter American University of Puerto Rico.

Eufemio Toucet, Executive Director for the East Region, has held such position since 2005. Before joining the Authority, Mr. Toucet worked for Cemex de Puerto Rico, Inc. as Executive Director of Ready Mix, for four years. Prior to that, he was President and General Manager of Storage Technology Ponce, Puerto Rico, and Plant Manager of Digital Equipment Corporation, San Germán, Puerto Rico. Mr. Toucet obtained a Bachelor's Degree in Industrial Engineering from the University of Puerto Rico, Mayagüez Campus.

In MPPR/Malcolm Pirnie's opinion, PRASA has capable and experienced senior management as demonstrated by recent successes and the continuous improvement of the utility via its planned initiatives.

2.4. Management Initiatives

2.4.1. Overview

The new management team conducted an assessment of PRASA's problems and identified the major challenges and issues which had to be addressed at the end of the first 100 days after the team took office in 2004. Key challenges that were identified by the new management team included:

- Lack of an appropriate management framework.
- Existing infrastructure needed substantial upgrading to reach standard utility levels of performance.
- Absence of comprehensive System-wide plans for construction, operation and maintenance.

- The lack of management information systems.
- The lack of proper maintenance equipment (tools and fleet).
- Substandard customer service.
- Poor internal communication concerning objectives and strategies.
- Undue union influence/interference in PRASA operations and inappropriate control.

To help address these challenges, PRASA has identified three major objectives to transform it to a world-class utility. These objectives included:

- Re-establish the confidence in PRASA's ability to provide water and wastewater services consistent with the highest standards in the industry for the people of Puerto Rico.
- Transform the culture of PRASA and modernize the organizational structure.
- Revitalize PRASA so that it becomes a financially stable and self-sufficient entity.

To achieve the above objectives, PRASA embarked on a series of strategies to transform the entire utility. These strategies include:

- Compliance with local and Federal regulatory requirements.
- Development of needed projects within a comprehensive capital improvement program.
- Optimization of the system efficiency and use of available reservoirs.
- Reduction of unaccounted for water.
- Pipeline replacement to decrease water main breaks and sewer overflows.
- Improvement of the preventive maintenance program.
- Development of a comprehensive training and education program.
- Modernization of the System and use of advanced technologies.
- Cost reductions and revenue increases.
- Protection of watersheds and management of aquifers.
- Implementation of a water conservation plan.

Some of the specific programs to implement the identified strategies are addressed below and others in following sections.

2.4.2. Environmental Compliance

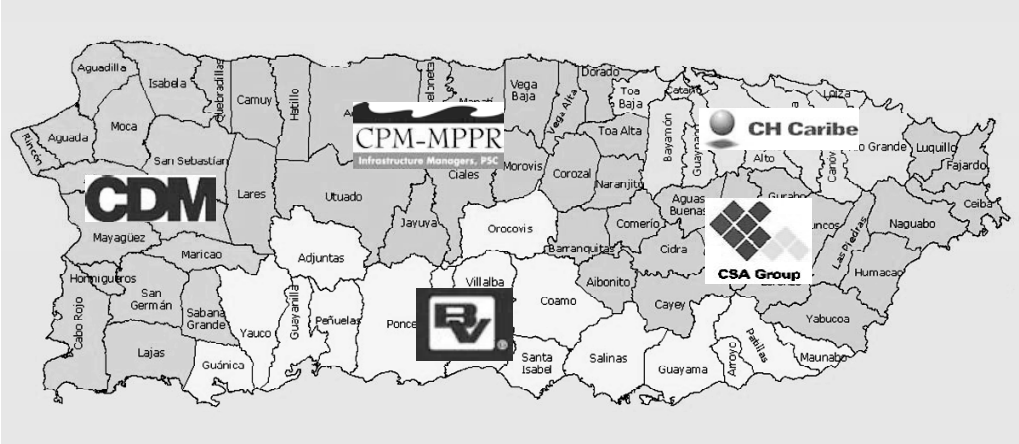
PRASA has historically faced many compliance issues with the regulatory agencies and has been subject to system-wide administrative and court orders for the past 30 years. PRASA has entered into broad agreements (Consent Decrees) with regulatory agencies,

such as the United States Environmental Protection Agency (USEPA) and the Puerto Rico Department of Health (PRDOH) to address key compliance problems and improve the management of compliance. Further discussion of the Consent Decrees, including stipulated requirements and compliance status, is provided in Section 6 of this report.

2.4.3. Infrastructure and Capital Improvements Program

Many of the urgent projects required to improve the water and wastewater systems were not being delivered due to insufficient funding and internal execution resources. Recognizing the need to successfully implement an extremely aggressive and robust infrastructure program, PRASA has obtained the services of five major firms or program management consultants (i.e. the PMCs) to plan, design, and manage the CIP in each of the five Regions. These firms are listed below with their respective geographic areas of responsibility shown in Figure 2-2. Further discussion of the CIP is provided in Section 6 of this report.

Figure 2-2: Regions of the Five Program Management Consultants



A. A local affiliate (known as CDM Caribe) of Camp, Dresser, and McKee (CDM) manages the CIP in the West Region. CDM is a large stateside consulting firm that provides technical support services and serves as the financial guarantor.

B. CPM-MPPR Infrastructure Managers, PSC manages the CIP in the North Region. CPM-MPPR is a professional services corporation created by Caribbean Project Management (CPM) and MPPR. Malcolm Pirnie, a large stateside environmental consulting firm, provides technical support services and serves as the financial guarantor.

C. A local affiliate (known as Black & Veatch of Puerto Rico) of Black & Veatch (B&V) manages the CIP in the South Region. B&V is a large stateside environmental consulting firm that provides technical support and serves as the financial guarantor.

D. A local affiliate (known as CH Caribe) of CH2M Hill manages the CIP in the Metro Region. CH2M Hill is a large stateside environmental consulting firm that provides technical support and serves as the financial guarantor.

E. The CSA Group headquartered in San Juan is the largest Puerto Rican environmental engineering firm and the largest Hispanic engineering firm in the U.S. CSA manages the CIP in the East Region.

2.4.4. Operations and Maintenance

PRASA is currently implementing a new comprehensive maintenance program that includes both preventive and corrective elements to be managed at the regional level. The program includes the implementation of initiatives that include new procurement policies, new information systems, organizational changes and improvements in inventory management. Additionally, PRASA is developing an aggressive component replacement program for critical equipment and has budgeted these replacements in its CIP.

Some of the specific organizational changes that have resulted from these initiatives include:

- The creation of a preventive maintenance initiative to be implemented at the regional level. This initiative includes a regional team of experts responsible for assessing, analyzing, and implementing preventive maintenance activities in each region. This initiative with adequate funding, should reduce the various problems that were often encountered in PRASA's assets (pipelines, pumps, equipment, treatment units, and other appurtenances).
- The addition of a Deputy Director for Compliance and compliance managers in the Operational Areas for meeting the requirements of the Consent Decrees signed with the Environmental Protection Agency and the Puerto Rico Department of Health.
- The separation of purchasing and logistics from the Finance & Administration Department which provides better management of the large volume of procurement that PRASA operations require.
- The inclusion of the Operational regional managers in the development process of the CIP. The increased participation from Regional managers has helped align the CIP with the needs of the respective regions through their interaction with the centralized Infrastructure department.

In addition to these organizational changes, PRASA has engaged numerous well-known consulting firms to assist with a variety of operational and maintenance initiatives. Such firms and their responsibilities include, but are not limited to:

- Gregory Morris Engineering, P.S.C.: Water Accountability Pilot Program.
- URS Caribe: Equipment inventories and inventory audits in support of the Integrated Preventive Maintenance Program (IPMP).
- PCG Corporation: Labeling equipment in support of IPMP; preparation of work plans, tasks and schedules, and equipment inventory for fleet and calibration.
- Watson Wyatt Worldwide, Inc.: Classification and remuneration project for regular employees – position classifications, new structure and positions.
- Accenture: Information technologies initiatives within IPMP, including the expansion of SAP usage for the computerized maintenance management program.
- McKinsey and Company: Streamlining activities and prioritizing requirements in connection with the IPMP.
- True North Corporation: Program management of the IPMP and technology transformation initiative.

2.4.5. Staffing

Historically, PRASA's ratio of number of customers to staff has been low in comparison to industry standards. At the end of FY2007, PRASA had a total staff of 5,841, with 1,259,415 water customer accounts and 729,413 sewer customer accounts, resulting in a ratio of about 340 customer accounts per employee. Current industry averages typically range from 350 to 740, with a median of approximately 500 customer accounts per employee.[3] Given the large number of PRASA facilities and wide geographic distribution of facilities, PRASA's comparatively low ratio of accounts to employees is not surprising.

PRASA's existing staff is categorized into four primary categories described below:

- Appointed Employees: This category includes: the executive staff, deputy directors, area directors and administrative assistants that provide support to key management personnel of the utility.
- Management Employees: These employees manage the day-to-day operations of the utility. They hold management positions both in the central and regional offices.

[3] Benchmarking Performance Indicators for Water and Wastewater Utilities: 2006 Annual Survey Data and Analyses Report, American Water Works Association (AWWA). Note that a customer with water and sewer service is counted as two accounts for the purpose of this benchmark. Benchmarks reported for "all utilities" category.

- HIEPAAA Employees (Hermandad Independiente Empleados Profesionales Autoridad de Acueductos y Alcantarillados): These employees are the unionized professional staff that includes accountants, engineers, insurance specialists, project inspections, and surveyors.
- UIA-AAA Employees (Unión Independiente Auténtica Autoridad de Acueductos y Alcantarillados): These employees are the unionized plant and system operators, maintenance and support staff, meter readers, customer service specialists, and administrative assistants.
- Temporary Employees: These employees are those that are hired and classified as temporary until formally assigned to a position. New hires are placed in a 90-day probationary period. They do not have full benefits during the probationary period. If still employed after probationary period, they either become full-time employees or remain temporary employees pending position confirmation, but with the same benefits as full-time employees. For FY2007, this category also includes an estimated 250 employees hired to assist with customer relations due to the recent rate increases and changes in PRASA billing practices; PRASA does not intend to transition these temporary employees to permanent employees.

Table 2-1 shows the staff levels by staff category over the last five fiscal years. PRASA is currently studying methods for reductions of staff, such as early retirement, retraining existing staff from overstaffed positions to reduce the need for new hires, and using staff attrition as a means to reduce staff level.

Table 2-1.
Staff Levels

End of FY	Appointed Employees	Management Employees	HIEPAAA Employees	UIA-AAA Employees	Temporary Employees	Total Employees
2003	36	942*	204	4428	181	5791
2004	56	920*	200	4383	115	5674
2005	127	872*	196	4323	196	5714
2006	146	882	194	4205	154	5581
2007	156	940	190	4046	509	5841

* - Includes some employees categorized as "contract" employees. PRASA is not categorizing any employees as "contract" employees for FY2006 and FY2007.

The temporary employees hired in FY2007 that become permanent employees are expected to largely become categorized as UIA-AAA employees. As PRASA seeks increased efficiency and effectiveness, it also seeks to improve the quality of its professional staff. PRASA continues to look for qualified individuals to fill key management positions as the need arises. PRASA is providing comprehensive benefit packages (fringe benefits are 56% of overhead) and exceptions to the official salary scale to attract and retain top quality professional staff.

Although PRASA currently has some staffing needs at individual facilities or within its executive and management teams, PRASA in general has been successful in filling most of its staffing needs, and currently PRASA has sufficient staff to operate and maintain the System.

2.4.6. Human Resources

Over the years, PRASA has had numerous human resource management challenges ranging from inefficient work rules to insufficient training of its personnel. The collective bargaining agreements of the past did not sufficiently align the union's practices with management's goals and programs. Additionally, personnel lacked fundamental training in areas such as compliance, operations, client services, information technologies, and health and safety.

The collective bargaining agreement between the UIA-AAA and PRASA expired in 2003. In 2004, as a result of impasses during the negotiations of a new collective bargaining agreement the union went on strike. Management took control and managed the System during the strike. During this period, management also learned the challenges of the System and the need for major capital investments. The success of management in effectively operating the System without interruption during the strike resulted in the union's return to work after 84 days. It also led to a cooperative negotiation posture among all parties for the collective bargaining agreement. While a new agreement has yet to be signed, most major issues including wage increases have been agreed upon and implemented. Issues still pending negotiation are those regarding contract term, discipline, and health care. Currently, despite not having a signed agreement, labor relations between management and union employees are generally considered as good.

With respect to the HIEPAAA, their collective bargaining agreement with PRASA was signed July 5, 2005 and is in effect until 2009.

In the past, the unions had substantial control and influence in the operation of the System. Since the strike, PRASA management has successfully reasserted control and has been able to implement numerous new policies, such as fingerprint-based time cards and drug testing.

Management's commitment to its employees and customers is demonstrated by the increase in training provided to its employees in the last three fiscal years. From FY2005 to FY2007 PRASA increased training hours provided to employees from 15,197 to 79,042, an increase of 420%. Approximately 95% of the current training is provided by external resources.

A sample of FY2006 (and where noted in FY2007) human resource achievements, which demonstrate PRASA's commitment to its personnel, are outlined below:

- Implemented SAP module to document and track human resources information.
- Provided plant operator training to 535 staff. Currently have 334 certified plant operators.
- Provided regulatory compliance training to 206 participants (4,473 hours).
- Provided sexual harassment and internal audit processes training to 457 participants (1,503 hours).
- Provided programmable logic controller training to 112 participants (6,717 hours).
- Provided Ethics training to 88 participants (308 hours).
- Provided training in services excellence, conflict resolutions and team work to 722 participants (26,764 hours).
- Provided Managerial Development Phases I and II training to 543 management employees.
- Provided training in topics such as chlorine management, confined spaces, and operator license Type 4 to over 1,100 employees, including plant operators (10,301 hours).
- Provided 94,357 hours in training and development in FY2007.
- Reduced OSHA complaints by more than 50% (from 15 to 6) in FY2007.

In addition, PRASA has hired an outside consultant (Watson Wyatt) to assist with the classification and remuneration of its employees, with focus on:

- Position classifications.
- New structure and positions.
- Position consolidation in order to optimize mobility and promotions within the utility.

The increased focus on employee training, as outlined above, is a clear indication that PRASA recognizes the importance of training as a major contributor to improved performance. The training programs address both technical and non-technical skills, which collectively are critical to improving the effectiveness of its work force.

In addition, PRASA has demonstrated its ability to better manage the unionized workforce via the successful negotiation of new collective bargaining agreements. Through such negotiations and related initiatives, PRASA has redirected and refocused the workforce to achieve a common mission of improved performance.

2.4.7. Customer Service

PRASA has recently adopted a new customer service initiative with a specific mission designed to offer an excellent and prompt customer service and improve communication

between PRASA and its customers. PRASA is implementing the following projects to positively transform PRASA's customer satisfaction:

- Creation of a new website for customer service and payment provisions.
- Installation of new signage at customer service centers.
- Renovation of commercial offices.
- Development of payment via telephone.
- Installation of electronic payment kiosks.
- Improvement of the customer call center.
- Initiation of a remote meter reading program.
- Improvement to the response time to customers.
- Implementation of the customer service polling program.
- Implementation of the customer service training program for employees.
- Implementation of new payment methods.
- Implementation of electronic teller machines.
- Creation of Employee Reward Program.
- Implementation of the Customer Service Decree.

These projects were designed in 2006 and some of them have already been implemented such as PRASA's new website, customer service training to employees, new call centers, more payment methods and customer service polling. Other projects are currently being implemented such as: introduction of electronic tellers and payment kiosks, better signage, renovation of commercial offices and employee reward programs.

Some positive results that have already been achieved include:

- Reduced average call waiting time from 91 seconds in January 2006 to 52 seconds in November 2006.
- Increased call center quality assurance from 24% of all monitored calls receiving excellent ratings in January 2006 to 60% in November 2006.
- Trained 833 employees in commercial offices and call centers on customer service topics.

These projects are not only improving customer satisfaction and communication, but are also making PRASA more efficient in providing these services as many of the initiatives use technology to replace older, less efficient means.

2.4.8. Information Technology

PRASA has made information technology one of the key areas for management improvement. As recently as 2004, PRASA lacked technological advancements commonly used and practiced by organizations, such as email communication and adequate database management. Presently, management is fully computerized at all levels and computerized information systems are widely used by all management personnel. Recognizing the importance of its information systems, PRASA established a special department for Information Systems at the central office. Information systems that are now used by PRASA include, among others: SAP, Kronos, GIS (Geographical Information System), and PMIS (Program Management Information System). Computerized maintenance management systems (CMMS) are not yet in wide-spread use. However, implementation of an effective CMMS throughout all Regions is an initiative of the IPMP and is expected to be in place by the end of 2009. Additionally, information technology currently supports the development of technological advancements in PRASA, such as telemetry and several client service initiatives.

2.5. Conclusions

PRASA has been diligent about addressing the organizational shortcomings identified in 2004 after the enactment of Act No. 92. Virtually all departments have been overhauled with the purpose of emphasizing System performance and customer service.

Critical to the success of the utility's mission is an effective management and workforce relationship. PRASA's management has been able to take control and align its workforce as a result of productive management of the 2004 strike. Additionally, PRASA has augmented the capabilities of its workforce via a commitment to train and empower its staff.

PRASA has also recognized the need to collaborate with numerous internationally recognized consultants to assist with several aspects of its transformation. The engagement of renowned program management consultants for the implementation of its infrastructure program, and the engagement of well-qualified consultants for the improvement of its operation and maintenance programs demonstrates PRASA's commitment to the transformation of the utility to raise it to world-class standards.

PRASA's leadership positions have been filled by personnel that have historically worked in the private sector and are well-versed in the needs of a water and wastewater utility. The business mindset of such leaders has provided PRASA with the ability to further transform itself into a more fiscally responsible and results-oriented organization. While many of the organizational initiatives to address the System are still being implemented, early indications are that improvements are noticeable and progress is being made.

Although PRASA currently has some staffing needs at individual facilities or within its executive and management teams, PRASA in general has been successful in filling most of its staffing needs, and currently PRASA has sufficient staff to operate and maintain the System.

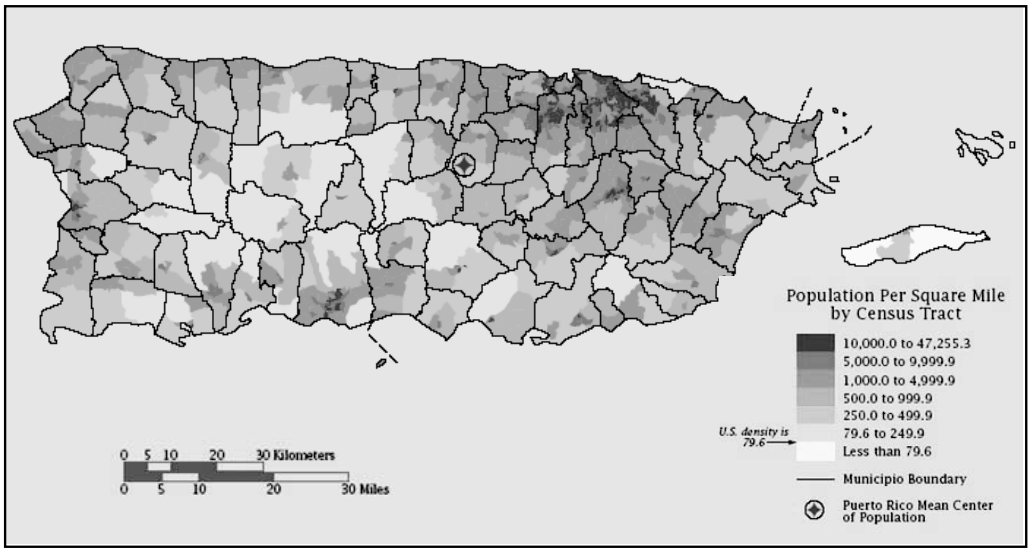
3. System Description

3.1. Introduction

PRASA serves a population of approximately 4.0 million residents plus approximately 5 million visitors annually[4]. PRASA provides water and wastewater service to about 97% and 55% of Puerto Rico's population, respectively. The island is approximately 35 miles wide and 100 miles long.

Due to the fact that Puerto Rico is an island with a wide variety of topography, isolated demographic distributions (shown in Figure 3-1), and a diverse mix of users (rural communities, dense urban areas and large industrial dischargers), PRASA has a somewhat fragmented and localized system of water sources, treatment systems and delivery systems. This results in a higher degree of diversity in its assets in terms of size, technology, and age when compared to systems in the U.S. and Canada.

Figure 3-1: Puerto Rico Population Density[5]

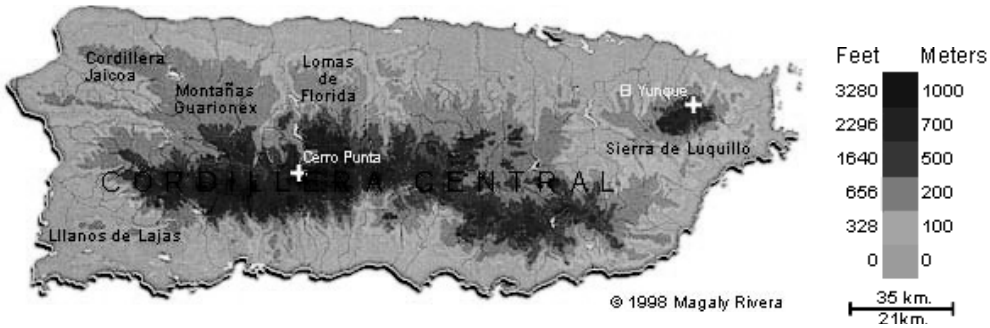


Puerto Rico's irregular topography, shown in Figure 3-2, has historically represented a major challenge to the planning and construction of large regional systems. Topography varies from coastal flatlands to mountainous central highlands. For example, the

[4] Source: Puerto Rico Tourism Company statistics for fiscal years 2004 through 2006.
[5] Source: U.S. Census Bureau

elevations vary from thousands of feet in areas such as Adjuntas to sea level in Ponce, both within the same operational Region.

Figure 3-2: Puerto Rico Topographic Map[6]



Highest Elevation: Cerro Punta 4,389 ft (1,338 m)

Most of PRASA's water and wastewater systems were historically developed on a community level and include numerous small treatment plants. These very diverse areas and corresponding needs have resulted in localized systems, including 129 WTPs, 349 wells, 1,057 pump stations, and several large dams located throughout the island. The numerous water service areas have correspondingly resulted in a need for over 600 wastewater pumping stations and 62 WWTPs. The WWTPs discharge to a combination of shallow freshwater streams and deep ocean outfalls.

PRASA has the very complex challenge of planning for a wide variety of water and wastewater assets and conducting very different types of operations and maintenance activities within the same organization. To illustrate the geographic spread of PRASA's facilities, Figures 3-3 and 3-4 show the geographic range of PRASA's existing WTPs and WWTPs.

[6] Source: http://topuertorico.org/reference/topo.shtml

Figure 3-3: Existing Water Treatment Plants

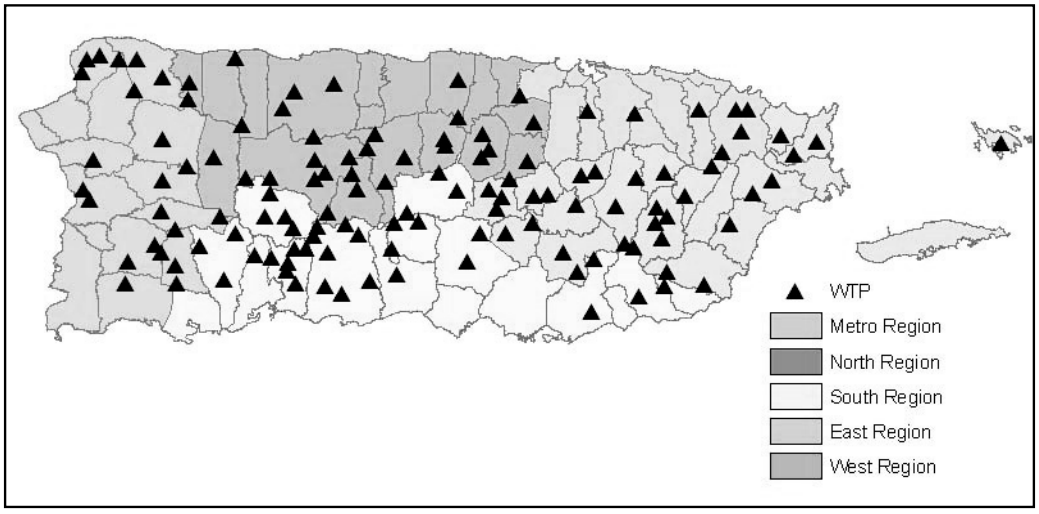
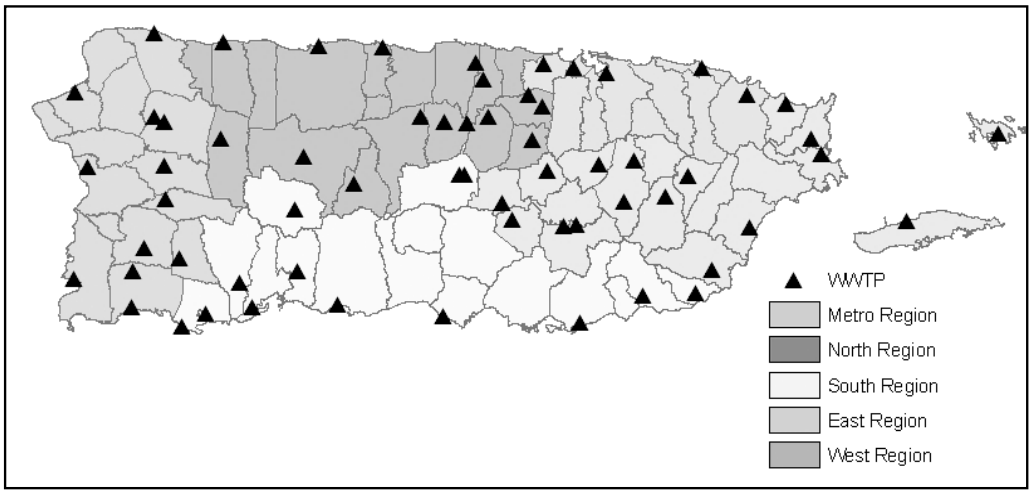


Figure 3-4: Existing Wastewater Treatment Plants

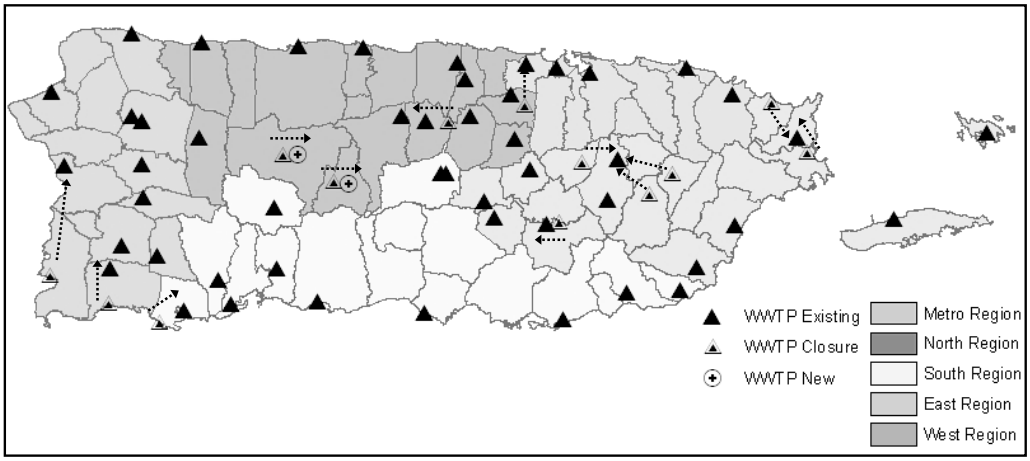


Due to the fact that PRASA serves numerous separate localities throughout the island, PRASA has many more treatment facilities than most utilities serving a similar number of customers. The Metro Region, which includes San Juan, has fewer and larger treatment plants than the rest of the island and resembles more closely large utilities in

the mainland U.S. The other Regions are composed of numerous treatment plants that serve small communities that are not interconnected.

Where feasible, PRASA is looking to close some of the smaller facilities and serve multiple communities with larger regional plants, but there are limited opportunities to do this in a cost effective manner due to the geographic spread of the communities and Puerto Rico's topography. PRASA plans closure and consolidation of numerous WWTPs, reducing the number of WWTPs by 17% (51 WWTP operating in FY2016). Figure 3-5 shows a simplified network of WWTPs and flow diversions to regional treatment facilities by FY2016. Also, by FY2025, PRASA plans to reduce the number of WTPs from 129 to 110, which represents a 15% reduction of the existing number of WTPs.

Figure 3-5: Future Wastewater Treatment Plants



Note: Arrows denote flow diversions to existing or new WWTPs.

Sections 3.2 and 3.3 describe the water system and wastewater system in further detail. This information was obtained from the Summary of Major Assets of PRASA System, prepared by CPM-MPPR, November 2006, and supplemented by MPPR/Malcolm Pirnie as additional information was received from PRASA and obtained from field inspections performed in February and March of 2007.

3.2. Water System

The following sections provide a general overview of PRASA's water system by:

- Service Areas/Client Type
- Water Demand and Supply

- Raw Water Supply Systems
- Wells
- Water Treatment Plants
- Water Pump Stations
- Storage Tanks
- Transmission and Distribution System Piping

3.2.1. Service Areas

The information presented in this section is based on information provided by PRASA for FY2007. Key aspects of PRASA's service areas are:

- PRASA currently services approximately 1,259,415 water customers covering approximately 97% of the island's population. The majority of these customers are residential units which comprise approximately 94% of the customer accounts and approximately 74% of the accounted for water consumption. Figure 3-6 presents the distribution of PRASA water clients among the four major client types.
- The Metro Region serves a third (32%) of the PRASA water service area, followed by the East Region (20%), the North Region (17%), the West Region (16%) and the South Region (15%) (Figure 3-7).

Figure 3-6: Quantity of Water Service Clients by Type[7]

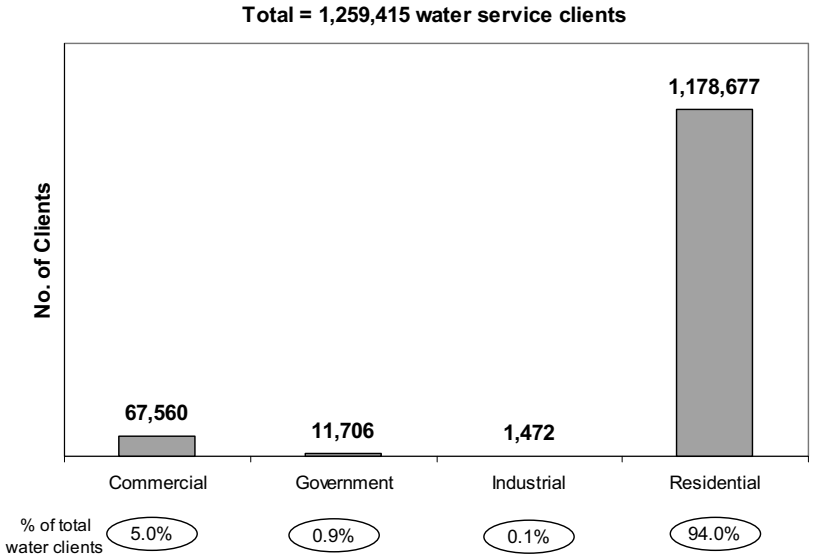
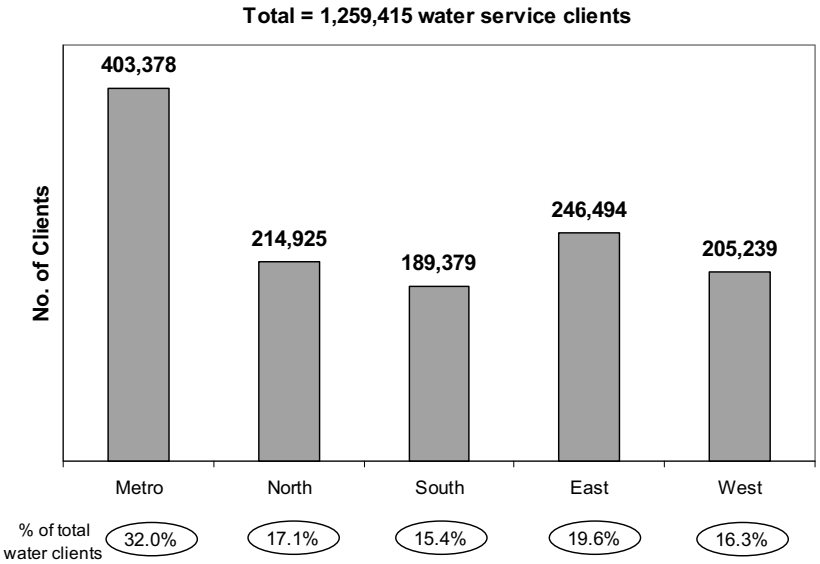


Figure 3-7: Quantity of Water Service Clients by Region



3.2.2. Water Demand and Supply

In 2004, the consulting firm of CDM prepared island-wide water demand forecasts, including non-PRASA systems. The CDM study was based upon estimated per capita water demand numbers. The "expected" scenario from these forecasts is presented below in Table 3-1. This "expected" demand forecast assumes that no water loss control or water conservation methods will be implemented and uses steady population growth projections based on U.S. Census data and information provided by the Puerto Rico Planning Board. PRASA anticipates some reductions in unaccounted for water as certain programs are implemented as later discussed in Section 4.9.1.

Table 3-1.
Island-Wide Water Demand Forecast in MGD[8]

	2000	2005	2010	2015	2020	2025
Residential	212	218	223	226	229	231
Nonresidential	95	97	99	100	101	102
Unaccounted	320	329	335	340	344	346
Total	628	645	656	666	674	679

[7] Total number of clients by type for FY2007 as provided by PRASA.
[8] Source: "Update of Puerto Rico Water Demand Forecast, Final Report", prepared by CDM Caribbean Engineers P.S.C. and PMCL@CDM, dated November 2004.

PRASA's reported actual water sales and estimated water production for fiscal years 2003 through 2007 is presented in Table 3-2. The information used to calculate unaccounted for water is not entirely reliable given both the lack of existing or reliable meters at water production facilities (almost half of WTPs and all wells lack adequate meters) and the age and condition of customer meters. Nonetheless, the significant amount of unaccounted for water illustrates the potential opportunity available to increase revenues and decrease expenses as a result of the initiatives to reduce unaccounted for water. It also supports the need, as proposed by PRASA, to embark on aggressive meter replacement programs at both the source and usage locations. Because unaccounted for water is the largest category of water produced, accurate demand forecasting is difficult.

Table 3-2.
Island-Wide Water Sales and Estimated Production in MGD[(1)]

	FY2003	FY2004	FY2005	FY2006	FY2007
Residential	185	189	189	192	190
Nonresidential	67	70	69	68	63
Unaccounted	326	329	373	382	422
Total [(2)]	577	588	631	642	676

[(1)] Production data through FY2004 was validated by the U.S. Geological Survey (USGS). Production data for FY2005 through FY2007 is reported by PRASA.
[(2)] Numbers may not add due to rounding.

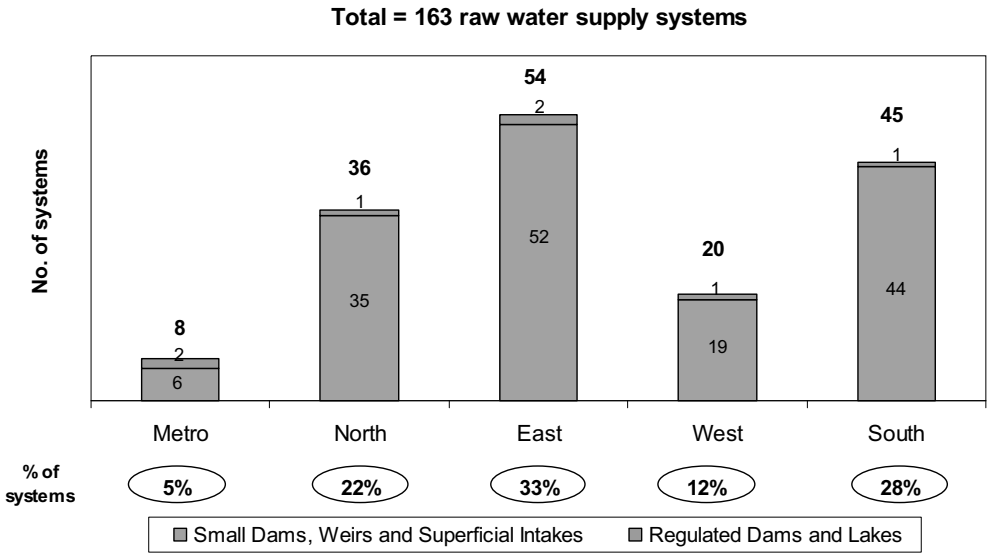
PRASA reports that it has maximum day demand supply deficits in some water service areas, which aggregate to approximately 82 million gallons per day (MGD) island-wide. This shortage of supply capacity has resulted in numerous WTPs operating above their design capacity. Many of the planned capital programs are aimed at providing additional water supply capacity to address supply shortfalls. In addition, PRASA's focus on reducing unaccounted for water, as discussed in Section 4.9.1, will also be beneficial in reducing the supply deficit. With these programs and efforts, and assuming PRASA is effective in controlling unaccounted for water, PRASA is expected to be able to substantially meet its water supply demands over the next ten years.

3.2.3. Raw Water Supply Systems

The PRASA system uses a total of 164 raw water supply systems, which consist mainly of Small Dams, Weirs, and Superficial Intakes. The other types of raw water supply are Regulated Dams and Lakes. Regulated Dams are water-impounding structures that are over 25 feet in height or impound more than 50 acre-feet of water. Regulated Lakes are impoundments supplied with raw water from other controlled sources (such as a diversion channel or flow piping). Small Dams, Weirs, and Superficial Intakes are river

or stream impoundments that do not meet the size or storage criteria to be classified as a Regulated Dam. Figure 3-8 shows the distribution of raw water supply systems by Region.[9]

Figure 3-8: Quantity of Raw Water Supply Systems by Region[10]



Historically, droughts[11] are rare in Puerto Rico. Significant droughts in recent years that affected large areas of Puerto Rico over an extended period of time occurred during 1966-68, 1971-74, 1976-77, and 1993-94. The 1971-74 drought was the most severe drought on record in terms of stream flow deficits and duration, whereas the 1993-94 drought was most severe in terms of water-supply problems. In 1994, during the peak of drought conditions, water customers were required to ration water and some customers received water every other day or every third day. This resulted in less water produced and sold in 1994 than in the years immediately prior.

Over much of 2007, the majority of Puerto Rico has been experiencing severe to extreme drought conditions according to the National Weather Service Palmer Drought Severity

[9] MPPR/Malcolm Pirnie did not determine capacity and age information of the PRASA raw water supply systems as part of this engagement.
[10] Only 163 raw water supply systems are accounted for. Since the location of 1 raw water supply system is unidentified, this system is not included in this figure.
[11] According to the USGS a drought can generally be defined as a period of deficit in rainfall or water supply for an extended period of time. Because a drought is "something of a nonevent," it is difficult to define its exact start, end and severity in terms of water supply and demand.

Index (PDSI)[12]. Despite these drought conditions, PRASA reports that its primary reservoirs have maintained adequate operating levels that are significantly above those levels experienced during past droughts, such as that experienced in 1994. During the period lasting from December 2006 to March 2007, when drought conditions were most severe, PRASA conducted active management of its reservoirs and distribution system pressures in order to avoid water restrictions.

Unlike in 1994, the current PRASA raw water supply system has some redundancy as a result of system interconnections in urban areas. This provides PRASA with the flexibility of supplying major urban areas with water from different regions. PRASA has recently constructed one new reservoir and has included in its CIP the construction of three additional reservoirs to supplement its water supply. These new reservoirs coupled with the recently constructed Superaqueduct WTP and pipeline will help to better position PRASA to deliver uninterrupted potable water even during drought conditions.

Depending on the duration and severity of the current and future droughts, it is possible that water use restrictions could again be required as provided for in PRASA's Water Rationing Program. Under this program, dams and reservoirs are constantly monitored. As water levels drop to a certain threshold, PRASA encourages the public to conserve water through press conferences and other media outlets. If levels continue to drop, water pressure is then reduced, and if levels do not improve, rationing starts. Rationing phases are divided into 12-hour periods, which in extreme circumstances can be extended up to 48 hours. The area affected is divided into sectors, and rationing phases of any given duration are first implemented locally, but in extreme circumstances, municipalities or island Regions can be affected simultaneously.

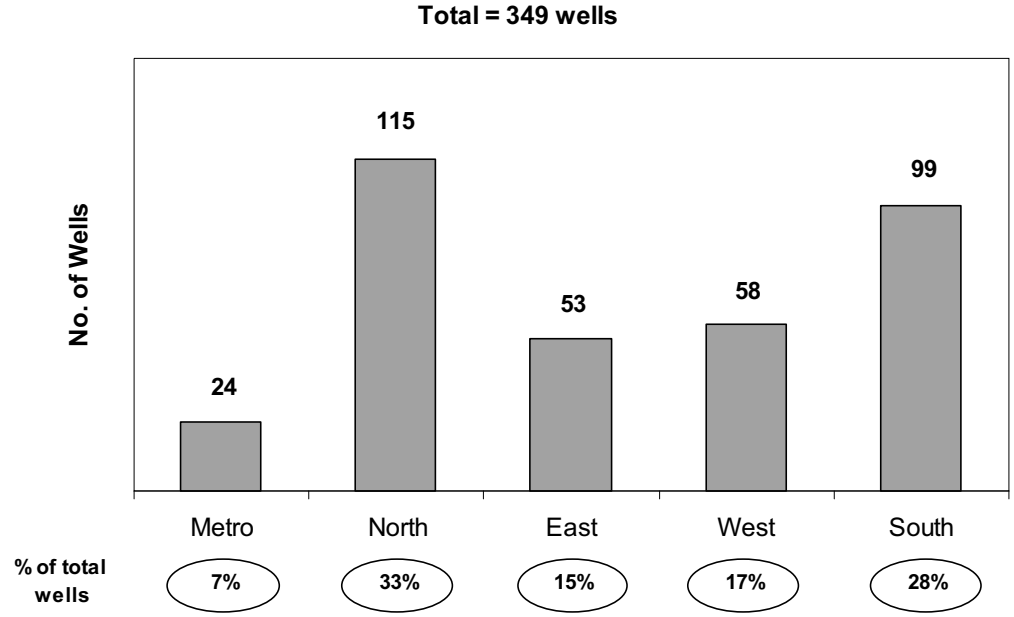
PRASA has also embarked on an island-wide initiative for educating the general population on the importance of water conservation. Through its Water Conservation Education Program, PRASA provides guidelines for managing water consumption in households through the use of water efficient equipment and offers guidelines to follow during severe drought periods when water conservation is most critical.

3.2.4. Wells

The data available show that the PRASA system has 349 registered wells. The design capacities of the wells range from 30 to 1,200 gallons per minute (gpm) and the average capacity of each well is 275 gpm. Figure 3-9 displays the quantity of wells by Region.

[12] Information obtained from the National Oceanic and Atmospheric Administration's website http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/cdus/palmer_drought/wpdsouth.txt

Figure 3-9: Quantity of Wells by Region



3.2.5. Water Treatment Plants

The PRASA water system consists of 129 WTPs located island-wide, with an estimated total design treatment capacity of 520 MGD, and estimated actual production of 591 MGD. Key observations regarding these facilities include:

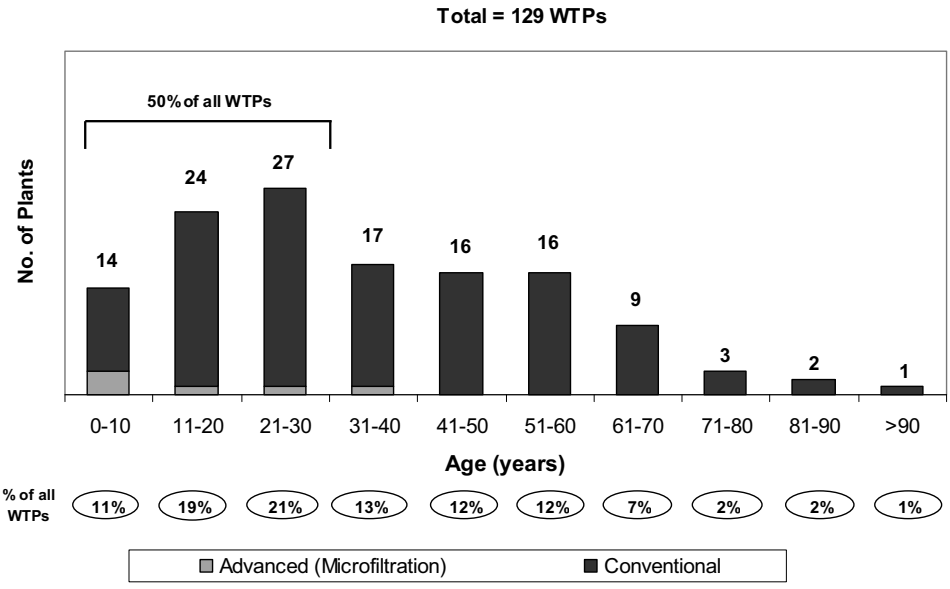
- Technology – 123 WTPs use conventional water treatment technology. Five use advanced water treatment technology (microfiltration) and 1 uses desalination (Figure 3-10).
- Age – Approximately half of the WTPs have been constructed in the last 30 years (Figure 3-10).
- Average Capacity – The WTPs owned by PRASA have an average design capacity of 4.0 MGD based on the available information for 129 WTPs.
- Typical Capacity – Approximately 84% of the WTPs have a capacity of less than 5 MGD (Figure 3-11). Based on plant operator statements made during field inspections, some of the WTPs typically operate below their design capacity, but approximately one third of the WTPs currently operate above their design capacity. Based on the information collected from the field inspections and information regarding anticipated plant closings from PRASA, about two thirds of the WTPs that typically operate above their design capacity are scheduled to be expanded, have a "compliance" project implemented or closed and replaced with a new WTP. It is

assumed that PRASA "compliance" projects will address any capacity limitations in the plant which contribute to compliance problems.

- Capacity by Region – The North Region provides 41% of the total water treatment capacity of the PRASA water system with 214 MGD followed by the Metro Region with 19%, the East Region with 17%, the West Region with 13%, and the South Region with 10% (Figure 3-12).
- Major Geographical Region – Approximately 29% of the WTPs are located in the East Region, followed by the North Region (26%), the South Region (24%), the West Region (18%), and the Metro Region (4%) (Figure 3-13).

It should be noted that the age of the WTPs, as calculated with respect to the year of construction, does not reflect the physical condition, the remaining useful life and the potential for expansion of the WTPs. In addition, as shown in Figure 3-12 the Metro Region has much larger WTPs compared to with an average size of 19.6 MGD per WTP, as compared to other Regions.

Figure 3-10: Age Distribution of WTPs by Type[13]



[13] The "Advanced (Microfiltration)" category includes one desalination water treatment plant.

Figure 3-11: Quantity of WTPs by Design Capacity

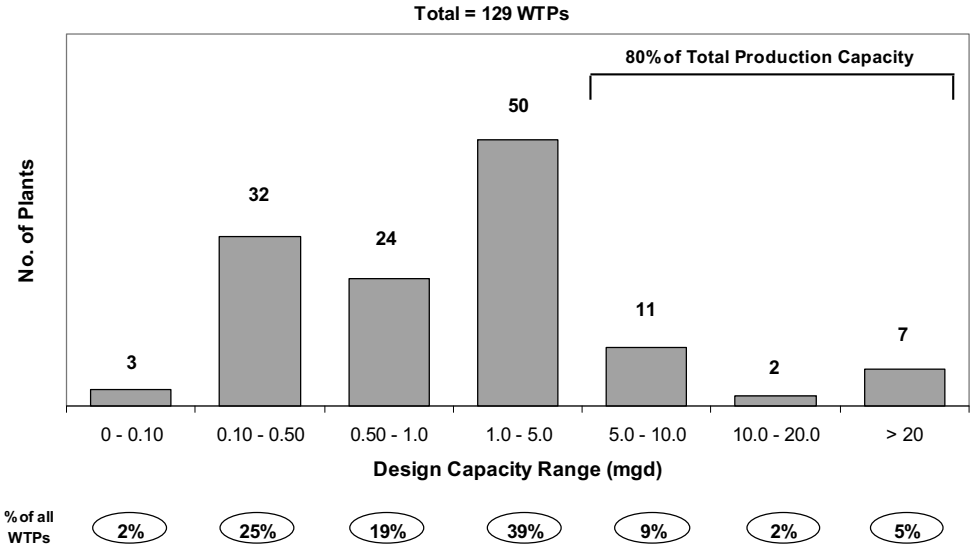


Figure 3-12: Quantity and Average Capacity of WTPs by Region

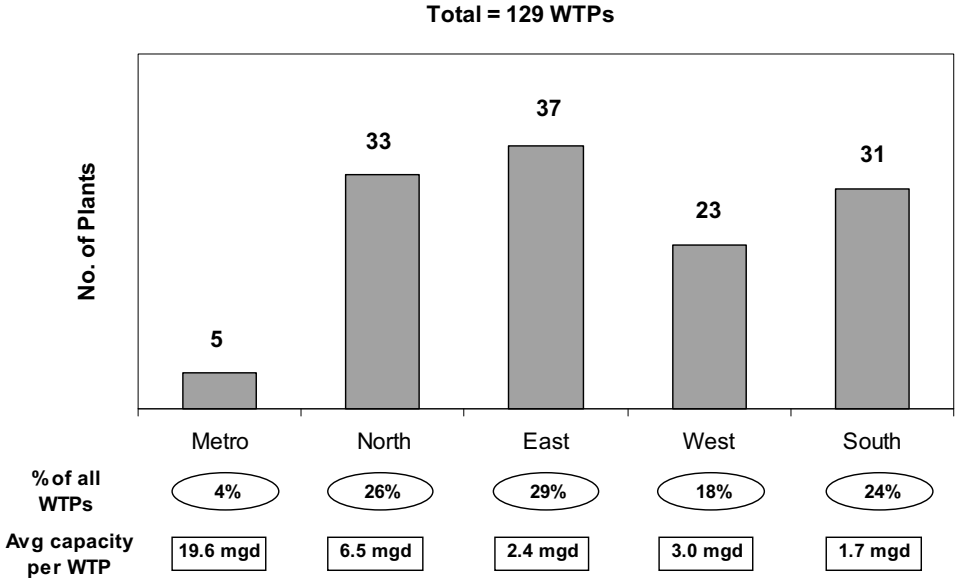
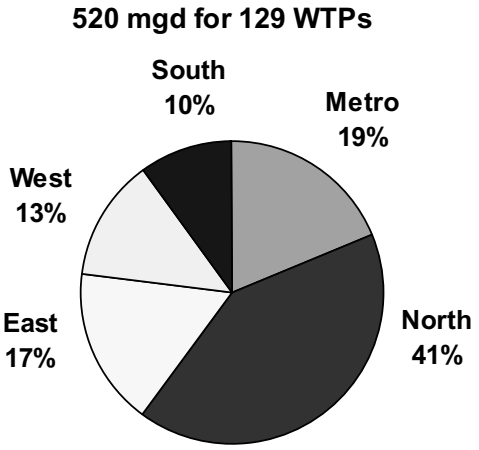


Figure 3-13: Design Capacity of WTPs by Region[14]



3.2.6. Water Pump Stations

The PRASA system consists of approximately 1,057 water pump stations, with 34% in the East Region, 22% in the South Region, 17% in the North Region, 17% in the West Region, and 10% in the Metro Region.

3.2.7. Storage Tanks (Outside of the Properties of Water Treatment Plants)

PRASA operates approximately 1,234 water storage tanks. Information is not available regarding tank use and capacity. Approximately three quarters of the tanks are located in the South, East and North Regions. The Metro Region has the fewest tanks (approximately 8%).

3.2.8. Water Meters

3.2.8.1. Production Meters

Many of PRASA's WTPs have historically lacked adequate treated water production flow meters to accurately calculate the volume of treated water produced by PRASA. In a recent survey, PRASA reports that 15% of its treated water production points were lacking a flow meter and 30% had flow meters that were not operating. Thus, treated water production estimates are much less accurate than if the production points were all effectively metered. PRASA is planning to address these production meter deficiencies in

[14] PRASA estimates total island-wide water production as of FY2007 is 676 MGD which includes well production.

a phased approach, first addressing the treated water flow meters at 26 of its largest WTPs, which account for 80% of PRASA's treated water production. The improvements to be implemented include installation of new meters, adjustments and calibrations, and other modifications. Phase I is expected to be completed in FY2008 and will be funded through PRASA's CIP and its maintenance budget. Phase II will address 52 WTPs, which account for 16% of PRASA's treated water production. Phase II is expected to be completed by FY2012 and will be funded through PRASA's CIP and its maintenance budget.

3.2.8.2. Customer Meters

The PRASA system includes approximately 1.4 million customer water meters island-wide. In some cases, PRASA installed customer water meters and updated the information into its asset database, but failed to also remove from its asset database the old water meters. This resulted in double counting of meters in these cases, and currently PRASA has more customer water meters than water customers. In some cases, database errors (e.g., account numbers entered incorrectly into the billing system) result in some customers receiving water service, but not being billed for such service. As part of the unaccounted for water initiative and the IPMP, PRASA will be updating its customer and meter database, therefore eliminating duplicates and converting non-billed customers to billed customers.

Key observations:

- Type – The majority (89%) of the meters are for residential purposes, followed by commercial purposes (6.1%) and other purposes (4.1%). Government and Industrial meters combine for 1% of total meters.
- Size – The majority (97%) of the meters are 5/8" diameter, followed by 1/2" diameter (1%) and 3/4" diameter (0.7%). The remaining meters range from 1" to 12" in diameter.
- Installation Date – 53% of the meters were installed between 2001 and 2006, followed by 27% between 1996 – 2001 and 20% before 1996.

3.2.9. Water Piping (Transmission and Distribution)

The information presented in this section has been obtained primarily from reading available GIS maps owned and managed by PRASA. Limitations of such an information source include:

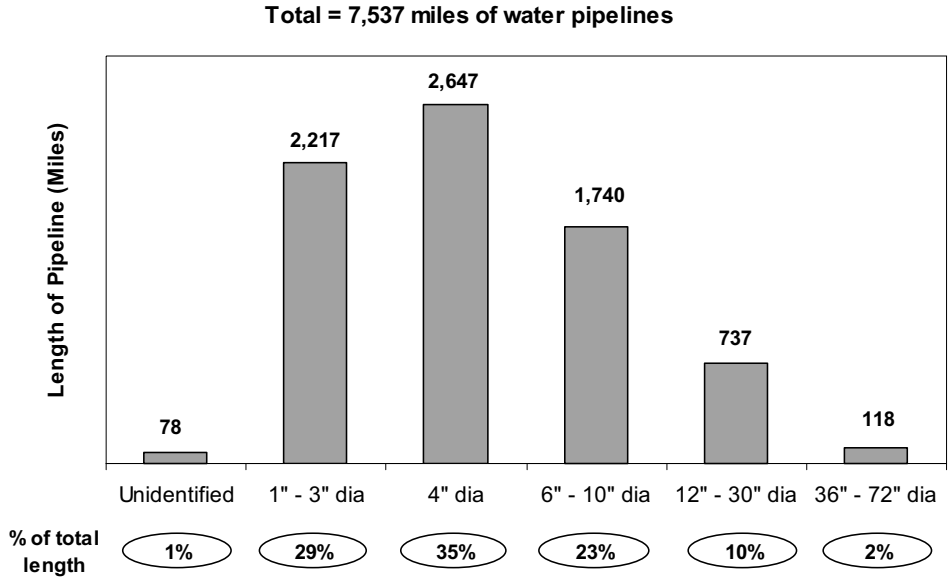
- No differentiation is made between transmission and distribution water pipes.
- Incomplete data set due to buried infrastructure and lack of field verification.
- Inability to determine the material of the water pipes.

Key observations:

- Total Length – The total length of registered water pipelines in the PRASA system is approximately 7,500 miles.
- Pipe Diameter Range – The diameters of the water pipelines range from 1 inch to 72 inches. The most common diameter size is 4 inches with 2,647 miles (Figure 3-14).

Defining transmission pipelines as having a diameter of 36 inches or larger, it is estimated that transmission pipelines make up about 1.6% of all water pipelines while distribution pipelines make up the remaining 98%.

Figure 3-14: Miles of Water Pipelines by Diameter



3.3. Wastewater System

The following sections provide a general overview of PRASA's wastewater system by:

- Service Areas/Client Type
- Wastewater Treatment Plants
- Wastewater Pump Stations

3.3.1. Service Areas

The information presented in this section is based on information provided by PRASA for FY2007. Key aspects of PRASA's service areas are:

- PRASA services approximately 729,413 wastewater customers, which represent approximately 55% of the island's total water customers. The majority (93%) of the wastewater customers are residential clients. Figure 3-15 presents the distribution of PRASA wastewater service clients among the four major client types.
- The Metro Region serves approximately 45% of the PRASA wastewater clients, followed by the East Region (17%) and the South Region (15%) North Region (12%) and West Region (10%) (Figure 3-16).

Figure 3-15: Quantity of Wastewater Service Clients by Type

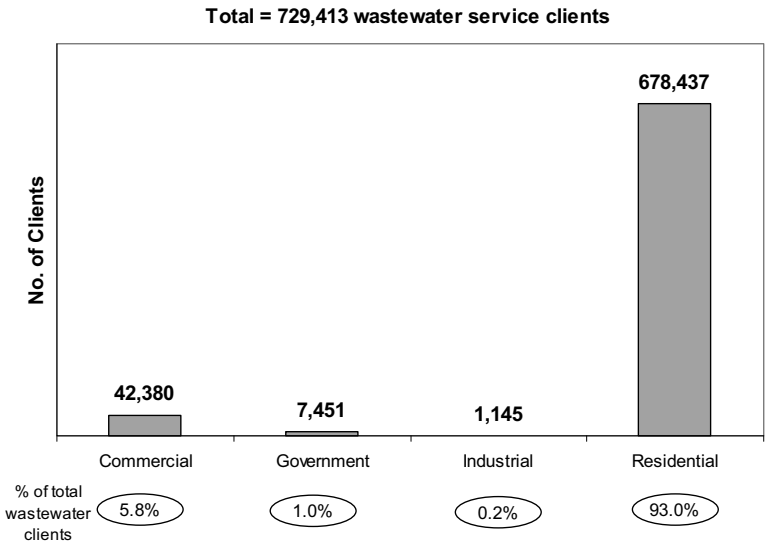
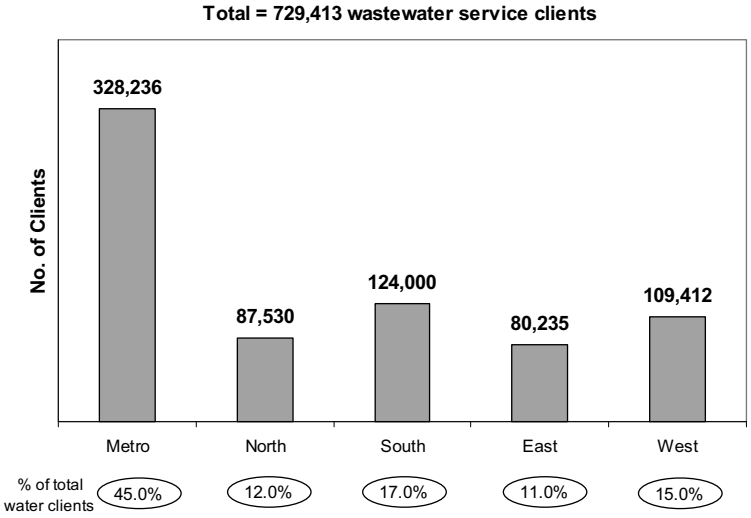


Figure 3-16: Quantity of Wastewater Service Clients by Region[15]



3.3.2. Wastewater Treatment Plants

The PRASA wastewater system consists of 62 WWTPs. There are six primary WWTPs and 56 WWTPs that feature secondary treatment. Total design treatment capacity for WWTPs is estimated to be 315 MGD, whereas actual treatment is estimated to be 245 MGD. The primary WWTPs have received waivers from secondary treatment, as provided for under Section 301(h) of the Clean Water Act. In 2000, PRASA and USEPA signed a memorandum of agreement in which the parties agreed that notwithstanding the 301(h) waivers at these six plants, PRASA and USEPA would work cooperatively to achieve voluntary plant upgrades to full secondary treatment over a 20-year period and to secure the necessary capital funding to support these upgrades in the form of federal grants or other means of federal financial assistance (coupled with the required "matching share" of PRASA funding. Failure by PRASA to comply fully with the existing 301(h) waivers applicable to these plants would entitle USEPA to issue and require PRASA to comply with secondary treatment orders for these plants, at PRASA's cost. At the time of execution of the memorandum of agreement, it was estimated that the incremental present worth of those upgrades exceeded $500 million in capital costs and over $600 million in incremental operation and maintenance costs. PRASA intends to maintain operation of the primary WWTPs as long as they are allowed by USEPA. Should the USEPA require secondary treatment for any of these WWTPs, additional unbudgeted capital and O&M expenses will be partially incurred by PRASA. The secondary treatment processes primarily consist of activated sludge processes and biofilters. There

[15] Total number of clients by type for FY2007 as provided by PRASA.

are miscellaneous other types of secondary treatment processes, including advanced secondary, aerated lagoons, oxidation ditches and rotating biological contactors. It should be noted that the age of the WWTPs, as calculated with respect to the year of construction, does not reflect the physical condition, the remaining useful life and the potential for expansion of the WWTPs.

Key observations:

- Technology – Approximately 40% of the WWTPs (25) use activated sludge, followed by biofilters (15) and by package treatment types (10) (Figure 3-17).
- Age – Close to two-thirds of the WWTPs have been constructed in the last 30 years.
- Average Capacity – The WWTPs owned by PRASA have an average design capacity of 5.2 MGD.
- Typical Capacity – Almost half of the WWTPs have a capacity of less than 1.0 MGD. Over three-quarters of the WWTPs have a capacity of less than 5.0 MGD. Based on plant operator statements made during field inspections, some of the WWTPs typically operate below their design capacity and about 10 to 15% frequently operate above their design capacity. Based on the information collected from the field inspections and information regarding anticipated plant closings from PRASA, most of the WWTPs that typically operate above their design capacity are scheduled to be closed in the future and replaced with a new WWTP or with the flow directed to a regional WWTP.
- Capacity by Region – The Metro Region provides 49% of the total wastewater treatment capacity of the PRASA wastewater system followed by the East Region (15%), South Region (13%), West Region (12%), and North Region (11%).
- Major Geographical Region – Approximately 28% of the WWTPs are located in the East Region, followed by the North Region (26%), South Region (21%), West Region (19%), and Metro Region (5%) (Figure 3-18).

Figure 3-17: Quantity of WWTPs by Type

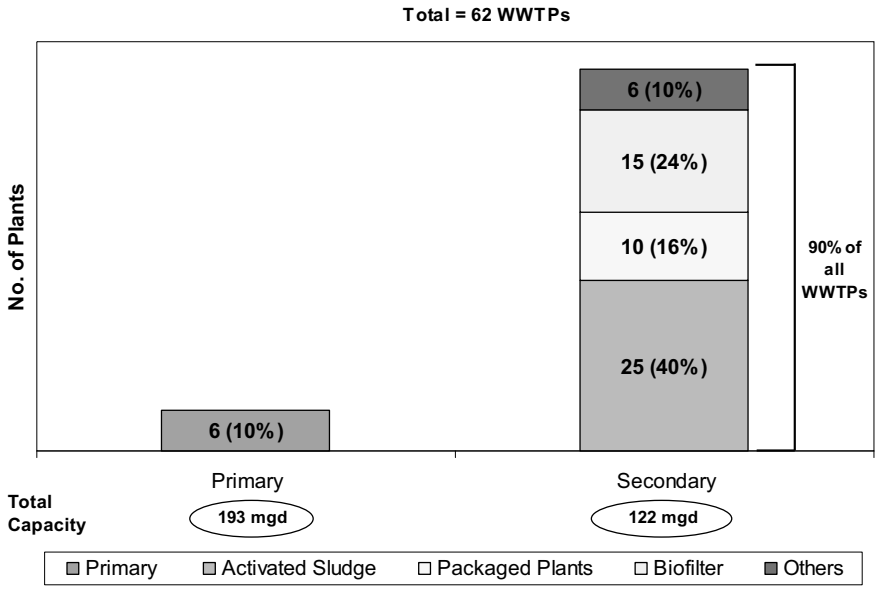
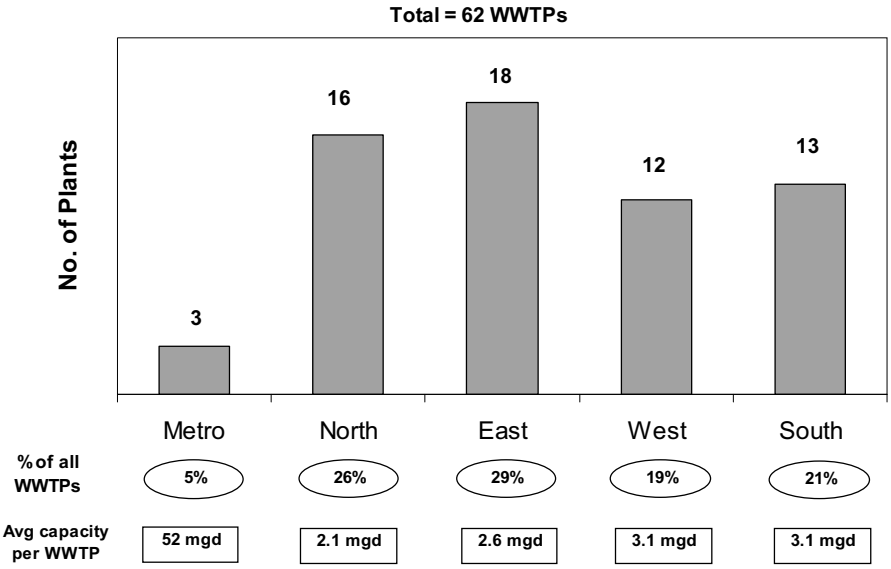


Figure 3-18: Quantity and Average Capacity of WWTPs by Region



3.3.3. Wastewater Pump Stations

The PRASA system comprises of approximately 619 wastewater pump stations, with 26% in the East Region, 26% in the Metro Region, 21% in the North Region, 16% in the West Region and 11% in the South Region.

3.3.4. Wastewater Collection Systems (Including Interceptors)

The information presented in this section has been obtained mainly from reading available GIS maps owned and managed by PRASA. Limitations of such an information source include:

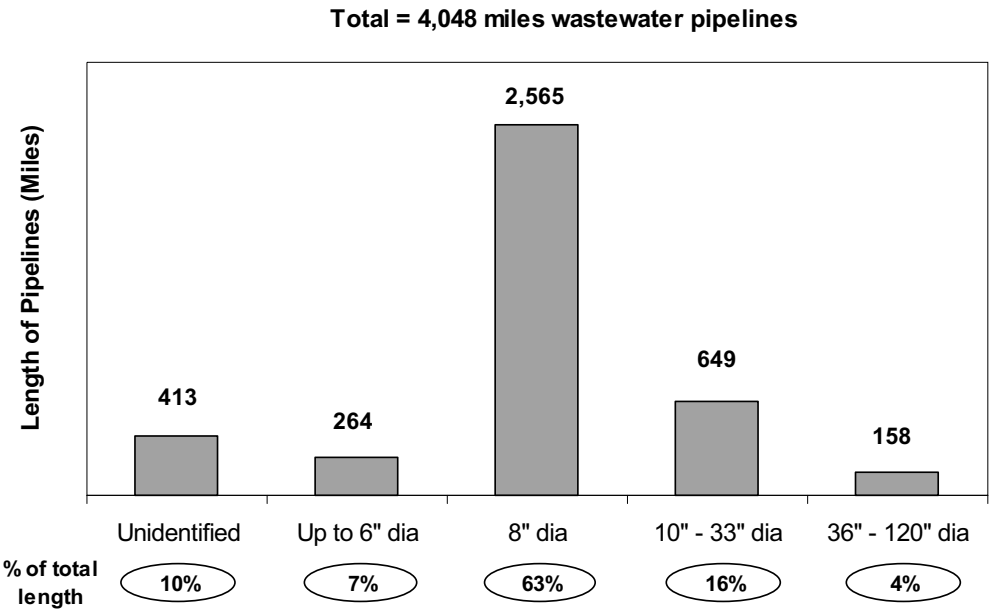
- Incomplete data set due to buried infrastructure and lack of field verification.
- Inability to determine the material of the pipes.

Key observations:

- Total Length – The total length of the registered wastewater pipelines in the PRASA system is approximately 4,050 miles.
- Pipe Diameter Range – The diameters of the wastewater pipelines range from 2 inches to 120 inches. The most common diameter size is 8 inches with 2,565 miles (Figure 3-19).

- Although detailed information is not available, PRASA has indicated that some of its sewers in metropolitan areas, especially where there are older pipelines, are combined (i.e. convey sanitary wastewater and storm water). Old San Juan, Santurce and Hato Rey are examples of areas that have combined sewers. As required by the USEPA Consent Decree, PRASA has included in its CIP projects to separate the combined sewers in Ponce de León Ave. and Martin Peña Channel. In addition, PRASA is performing sanitary sewer system evaluations on 59 of its collection systems. As a result of these evaluations, PRASA will determine stormwater contributions and other sources of infiltration to these wastewater collection systems, and identify corrective needs.

Figure 3-19: Miles of Wastewater Pipelines by Pipe Diameter Size



4. Condition of System

4.1. Introduction

PRASA owns a large variety of assets, including land, buildings, dams, wells, water and wastewater treatment facilities and pump stations, outfalls, buried infrastructure, vehicles, and water meters. MPPR/Malcolm Pirnie has assessed the condition of the PRASA System through an inspection program of major portions of the PRASA System. The purpose of these inspections was to identify the overall condition of the facilities to determine if they are being operated and maintained in a manner to achieve their operating goals and to see if PRASA's capital improvement program is aligned with identified needs.

Table 4-1 presents the categories of PRASA's assets that were inspected as part of the preparation of this CER, along with the total quantity of PRASA assets, number of facilities inspected, and percent of total facilities inspected. Due to the large value of the individual assets, all regulated dams, WTPs and WWTPs were inspected. Because of the lower individual facility value, a portion of the other assets was inspected as shown in the Table 4-1. In total, 548 inspections were performed out of a total of 3,613 facilities. No inspections were performed on PRASA's other assets, such as buried infrastructure, meters, outfalls, buildings, land, and other ancillary facilities; however, a discussion on buried infrastructure is included in Section 4.9.

Table 4-1.
Percent of Assets Inspected by Asset Category

Asset Category	Total PRASA Facilities	Inspections Performed	
		Quantity	Percent
Regulated Dams	7	7	100
Small Dams / Weirs /Superficial Surfaces	156	7	4
Wells	349	59	17
Water Treatment Plants	129	129	100
Water Pump Stations[(1)]	1,057	110	10
Water Storage Tanks	1,234	83	7
Wastewater Treatment Plants	62	62	100
Wastewater Pump Stations	619	91	15
Total	3,613	548	15

(1) Includes 25 site visits to underground booster stations. Full inspections were not completed due to inaccessibility of the vaults. General observations are discussed.

Inspections were performed throughout the five Regions of the island. An attempt was made to obtain a representative sampling of the small dams/weirs, wells, pump stations, and storage tanks (minor facilities) by inspecting a large number of facilities within several focused Operational Areas across the Island, rather than inspecting a uniform number of minor facilities within each Operational Area. As the specific assets to be inspected were not pre-determined, this approach provided some assurance that MPPR/Malcolm Pirnie would not be inspecting only the best assets in an Operational Area.

Upon arrival to a specific Operational Area, PRASA representatives guided inspectors to a selection of the minor facilities within their Operational Area. Table 4-2 shows the number of facilities inspected within each Region. Because the Metro Region has fewer, but larger water and wastewater treatment plants (100% of which were inspected) compared to the other Regions and no wells, the total number of inspections in the Metro Region is less than in the other Regions. However, the Metro Region was inspected to an overall level consistent with the other Regions.

Table 4-2.
Summary of Inspections by Region

Asset Category	East	Metro	North	South	West	Total
Regulated Dams	2	2	1	1	1	7
Small Dams / Weirs / Superficial Surfaces	2	0	2	2	1	7
Wells	21	0	15	23	0	59
Water Treatment Plants	36	4	35	31	23	129
Water Pump Stations[(1)]	0	29	18	15	23	85
Water Storage Tanks	0	19	18	17	29	83
Wastewater Treatment Plants	18	3	16	13	12	62
Wastewater Pump Stations	35	4	23	19	10	91
Total	114	61	128	121	99	523

(1) Does not include 25 site visits to underground booster stations which were not fully inspected.

Each category of asset was inspected using an inspection form, criteria, and criteria weighting customized to that specific asset category. The evaluation criteria were chosen from the following list for each asset inspection. These criteria are described in more detail in each of the asset class subsections in this Section 4.

- Compliance – degree to which the performance of the asset is in compliance with its permit limits and regulatory requirements.
- Operations / Process Control – degree to which asset condition and features allow it to be operated and controlled to meet its performance objectives.

- Equipment / Maintenance – assessment of the adequacy of the maintenance practices and the condition of the facility.
- Staffing / Training – assessment of the adequacy of facility staffing coverage and training.

Within each of the evaluation criteria, the asset inspected was assigned a numerical rating between 0 and 3. An overall facility rating was then determined based on the calculation of a weighted average of the ratings for each criterion. The numerical ratings are described generally below and in more detail in each of the asset class subsections in this Section 4:

Rating	Range
Good (Most of the criteria are adequately addressed)	2.5 – 3.0
Adequate (Many of the criteria are adequately addressed)	1.5 – 2.4
Poor (Many of the criteria are not adequately addressed)	0.5 – 1.4
Unacceptable (Most of the criteria are not adequately addressed)	0.0 – 0.4

An overview of the approach and results of the inspections for each asset category are discussed separately below. Additional details regarding the inspection approach and results, as well as the inspection forms for each inspection are provided in the Asset Condition Report for the PRASA Water and Wastewater System, prepared by MPPR/Malcolm Pirnie, dated January 2008.

4.2. Dams and Weirs

PRASA operates approximately 163 water supply systems that can be divided into two primary categories. The first type is large, regulated dams that impound reservoirs of greater than 50 acre-feet or have a measured height of greater than 25 feet. Only 7 of the water supply systems are classified as regulated dams. The second type is weirs that create minor impoundments on active streams or rivers, but do not meet the regulatory criteria to be classified as dams. Regulated dam structures are operated under the jurisdiction of the Dam Safety Unit of PREPA. PREPA administers the Dam Safety Program in association with the Department of Natural and Environmental Resources, Puerto Rico Planning Board, PRASA, and public sector appointees by the Governor. A Dam Safety Committee, of which PRASA is a member as required by law, oversees the Dam Safety Program.

In addition to size classification, the regulated dams in Puerto Rico are also assigned a Hazard Classification, which is based upon the downstream impacts that would result from failure of the dam where the impounded reservoir would be released into the lower watershed. The failure of a low hazard dam would result in the loss of the structure itself,

but little to no additional damage to other property. The failure of an intermediate hazard dam would result in very little loss of life and significant damage to property and project operation. The failure of a high hazard dam would cause more than very little loss of life and serious damage to communities, industry, and agriculture.

PREPA's Dam Safety Unit performed inspections on six of the seven PRASA regulated dams from 2004 to 2006, creating summary reports addressing the dam structure, appurtenant works, operations and safety for each facility (Fajardo Dam was being constructed during that time and was not included). MPPR/Malcolm Pirnie utilized these reports as a baseline from which to perform independent visual inspections and evaluations of the dam structures in 2007. According to Puerto Rico's Dam Safety regulations, regulated dam facilities are to be inspected every three years. Timely and sufficient inspection of these dams is essential to permitting or approval required for construction, modification, repair, or removal of the dam or the appurtenant works. Aside from the daily observation and operations of the fully-staffed dam facilities, all of these structures are given a cursory safety inspection annually by PREPA prior to hurricane season.

Small dams, weirs and superficial surfaces consist of the small, run-of-the-river impounding structures. These concrete structures create minor impoundment of active streams or rivers to submerge pump station or water treatment plant intakes. All of these structures fall far below the regulatory threshold of being less than 25 feet in height, and are estimated to impound less than 50 acre-feet of water. Citing these two criteria, the structures would not be classified as dams under the jurisdiction of the Dam Safety Group of Puerto Rico. They are however, an important part of the water supply system and should be maintained accordingly.

Each regulated dam facility was evaluated under the following four categories:

- Regulatory Compliance
- Operations/Process Control
- Equipment/Maintenance
- Staffing/Training

4.2.1. Inspection Results

4.2.1.1. Regulated Dams

A total of seven regulated dams were inspected. Table 4-3 provides a summary of the facility ratings by each of the evaluation criteria, as well as the overall facility rating. Of the 7 regulated dams inspected, one dam (or 14% of those inspected) received a poor

rating. The remaining 6 dams (or 86% of those inspected) received an adequate or good rating.

Table 4-3.
Regulated Dams

Number and Percentage of Ratings by Category

Rating Range	Regulatory Compliance		Ops/Process Control		Equipment/ Maintenance		Staffing/ Training		Overall Rating	
	Number	Percent[(1)]	Number	Percent[(1)]	Number	Percent[(1)]	Number	Percent[(1)]	Number	Percent[(1)]
Unacceptable (0-0.4)	0	0	0	0	0	0	0	0	0	0
Poor (0.5-1.4)	1	14	1	14	1	14	1	14	1	14
Adequate (1.5-2.4)	2	29	1	14	1	14	1	14	3	43
Good (2.5-3.0)	4	57	5	71	5	71	5	71	3	43
Average Rating	2.2		2.2		2.3		2.1		2.2	

[(1)] Percentages may not add to 100% due to rounding.

4.2.1.2. Weirs

A total of seven weirs were inspected. Table 4-4 provides a summary of the facility ratings by each of the evaluation criteria, as well as the overall facility rating. Of the seven weirs inspected, one structure (or 14% of those inspected) received a poor rating. The remaining 6 structures (or 86% of those inspected) received an adequate rating.

Table 4-4.
Weirs

Number and Percentage of Ratings by Category

Rating Range	Ops/Process Control		Equipment/ Maintenance		Staffing/ Training		Overall Rating	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Unacceptable (0-0.4)	0	0	0	0	0	0	0	0
Poor (0.5-1.4)	4	57	1	14	7	100	1	14
Adequate (1.5-2.4)	3	43	6	86	0	0	6	86
Good (2.5-3.0)	0	0	0	0	0	0	0	0
Average Rating	1.5		1.6		0.7		1.5	

4.2.2. Conclusions

With the exception of one facility, PRASA's regulated dams are generally in adequate to good condition. These facilities are inspected at the appropriate intervals by PREPA, with inspection items addressed in a timely manner. Las Curias (Rio Piedras) Dam requires numerous maintenance items as noted above, including a number of outstanding items from the latest PREPA inspection report. The Isabela Regulator Lake requires maintenance of the geomembrane liner to avoid a potential reduced lifespan for this facility. With attention to these items, the large dams are expected to continue to play their needed role in the water supply system.

The weirs (or small dams) are generally in adequate condition and are expected to continue to serve their intended function of submerging pump intakes for water supply.

4.3. Wells

PRASA has a large number of drinking water wells, most of which deliver chlorinated water directly into a distribution system. Each facility was evaluated under the following two categories:

- Operations/Process Control
- Equipment/Maintenance

While compliance information is relevant to the evaluation of wells, insufficient information is available to evaluate that criterion. Wells are not generally staffed and have a limited amount of equipment; therefore the staffing and training category was not included in the evaluation of wells.

4.3.1. Inspection Results

A total of 59 wells were inspected. Table 4-5 provides a summary of the facility ratings by each of the evaluation criteria, as well as the overall facility rating. Of the 59 wells inspected, poor ratings were given to 17% of the inspected wells. Adequate and good ratings were given to a combined 83%. However, it should be noted that three wells received an unacceptable rating for the Equipment/Maintenance criterion.

Table 4-5.
Wells

Number and Percentage of Ratings by Category

Rating Range	Ops/Process Control		Equipment/ Maintenance		Overall Rating	
	Number	Percent	Number	Percent	Number	Percent
Unacceptable (0-0.4)	0	0	3	5	0	0

Rating Range	Ops/Process Control		Equipment/ Maintenance		Overall Rating	
	Number	Percent	Number	Percent	Number	Percent
Poor (0.5-1.4)	7	12	9	15	10	17
Adequate (1.5-2.4)	51	86	14	24	38	64
Good (2.5-3.0)	1	2	33	56	11	19
Average Rating	1.8		2.1		2.0	

4.3.2. Conclusions

The wells are generally in adequate condition and are expected to continue to serve their intended function of supplemental water supply. Most of the deficiencies noted can be addressed through PRASA's renewal and replacement program and do not require major capital improvements. Future regulatory requirements (as discussed in Section 6.4) may require additional treatment for certain wells which would require significant capital improvements or closure of certain wells. Compliance information for wells was not available and therefore not considered in the above assessment of wells.

4.4. Water Treatment Plants

PRASA operates approximately 129 WTPs to provide potable water to the citizens and industries of Puerto Rico. The facilities range in size from several hundred gallons per day up to 100 MGD. All PRASA WTPs were inspected as part of this evaluation. Each facility was given an overall rating, based on an evaluation of each of the following four categories:

- Compliance
- Operations/Process Control
- Equipment/Maintenance
- Staffing/Training

4.4.1. Inspection Results

Table 4-6 provides a summary of the WTP ratings by each of the four evaluation criteria, as well as the overall facility rating. Poor ratings resulted for 12% of the WTPs, with 49% having an Adequate rating and 39% being rated in the Good category. The average plant overall rating was in the adequate range with an overall rating of 2.2. This is indicative of the fact that most of the WTPs visited are able to produce water which has a disinfectant residual and meets turbidity and disinfection byproduct (DBP) standards at least most of

the time. The plants ranked in the poor range need prompt attention to ensure their continued ability to produce potable water.

Table 4-6.
Water Treatment Plants

Number and Percentage of Ratings by Category

Rating Range	Regulatory Compliance		Ops/Process Control		Equipment/ Maintenance		Staffing/ Training		Overall Rating	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Unacceptable (0-0.4)	17	13	1	1	0	0	0	0	0	0
Poor (0.5-1.4)	12	9	19	15	3	2	3	2	16	12
Adequate (1.5-2.4)	21	16	49	38	102	79	66	51	63	49
Good (2.5-3.0)	79	61	60	47	24	19	60	47	50	39
Average Rating	2.2		2.2		2.1		2.2		2.2	

4.4.2. Conclusions

The WTPs are generally in adequate condition and are expected to continue to serve their intended function of providing potable water supply. Seventeen (17) of the WTPs (approximately 13%), however, are considered unacceptable in terms of compliance, typically due to multiple violations of combined filter effluent turbidity limits. All 17 WTPs rated as unacceptable from a compliance perspective are being addressed by measures identified in the new Consent Decree between PRASA and PRDOH or are otherwise being addressed in the CIP. The performance of these WTPs will be expected to increase in the future. Although PRASA is intending to close several of the worst performing WTPs, such closures are typically several years or more in the future.

Many of the WTPs have inadequate sludge treatment systems (STSs) and are out of compliance with their National Pollutant Discharge Elimination System (NPDES) effluent limits. PRASA has entered into Consent Decrees regarding many of these STSs and continues its dialogue with the USEPA regarding the STSs. PRASA reports that USEPA will be completing inspections the WTP STSs by October 2007 and that a new Consent Decree will be negotiated and effective by 2009. This new Consent Decree will substitute, and in turn close, the existing WTP STS decrees (PRASA II and PRASA III, defined in Section 6).

Future regulatory requirements (as discussed in Section 6.4) may require additional capital improvements to achieve higher levels of treatment at certain facilities depending on the characteristics of the source water and the distribution system. The effects of these future regulations will not be known until PRASA performs data collection and studies to determine what, if any, additional capital improvements will be needed to comply with these future regulations.

In summary, the WTPs are aging with an average age of approximately 34 years and several plants have significant compliance issues. Nevertheless, in its effort to improve System-wide compliance, PRASA has participated in joint efforts with regulatory agencies, such as the 2007 USEPA Drinking Water Needs Survey and in the Watershed Stewardship Program, to identify current needs for capital improvements and improvements in processes such as permit applications.

The Needs Survey is conducted every four years and it reports the infrastructure needs for the next 20 years that will qualify for funds from State Revolving Fund for selected systems. Presently, PRASA has participated with full commitment, whereas in the past, PRASA had participated in a limited manner. PRASA showed its commitment and desire to improve by submitting all the required documents in the first round. Only four jurisdictions completed all the documentation for the first round and these have no more than 2 systems, while PRASA has 63 systems.

The Watershed Stewardship Program is a joint venture program between PRASA, USEPA, PRDOH, and the Puerto Rico Environmental Quality Board (PREQB). Through this program, agencies are aligning efforts to facilitate processes such as permit applications and renewals, (i.e. NPDES), and the creation of a Stakeholder Advisory Committee. For example, agencies agreed to a permit issuance strategy for NPDES which will allow for improved coordination between them. This strategy includes submission of a complete application by PRASA, performance and completeness review by USEPA, and coordinated Water Quality Certification/NPDES permit issuance process.

PRASA has entered into a Consent Decree with PRDOH to monitor and address compliance issues and is implementing a CIP to modernize many WTPs, construct new facilities and decommission many old facilities. Furthermore, PRASA is investing in the training of its staff, and is planning on implementing modern systems for conducting and tracking maintenance activities. With these initiatives, the performance of PRASA's WTPs is expected to improve.

4.5. Water Pump Stations

The Water Pump Stations consist of two major categories: (1) above ground pumps and (2) below ground pumps in vaults with heavy covers that cannot be readily removed by

field inspectors (underground booster stations). 85 of the above ground pump stations were fully inspected and the assessment of those stations is described below. Site visits were made to 25 of the below ground pump stations and general observations are discussed at the end of this section.

Each facility was evaluated under the following two categories:

- Operations/Process Control
- Equipment/Maintenance

Because the water pump stations do not treat the water, the compliance category is not significant to the evaluation of water pump stations. Pump stations are generally not staffed and have a limited amount of equipment, therefore, the staffing and training category was also considered insignificant to their evaluation.

4.5.1. Inspection Results

A total of 85 water pump stations were inspected. Table 4-7 provides a summary of the facility ratings by each of the three evaluation criteria, as well as the overall facility rating. Of the 85 water pump stations inspected, poor ratings were given to 6% of the inspected water pump stations. Adequate and good ratings were given to a combined 94%.

Table 4-7.
Water Pump Stations

Number and Percentage of Ratings by Category

Rating Range	Ops/Process Control		Equipment/ Maintenance		Overall Rating	
	Number	Percent[(1)]	Number	Percent[(1)]	Number	Percent[(1)]
Unacceptable (0-0.4)	0	0	0	0	0	0
Poor (0.5-1.4)	6	7	10	12	5	6
Adequate (1.5-2.4)	56	66	28	33	59	69
Good (2.5-3.0)	23	27	47	55	21	25
Average Rating	2.1		2.3		2.2	

[(1)] Percentages may not add to 100% due to rounding.

4.5.2. Underground Booster Pump Stations

Site visits were made to 25 underground booster stations. At these stations, the pumps were located below ground surface in a vault covered with metal panels immediately

adjacent to a street. The associated electrical and control panel were located adjacent to the vault but above ground. During the site visits, direct observation of the pumps was not possible and therefore complete inspections were not performed. Where possible, interviews were conducted with PRASA personnel to determine the configuration and condition of these pump stations.

4.5.3. Conclusions

The water pump stations are generally in adequate to good condition and are expected to continue to serve their intended function of delivering drinking water throughout the distribution systems. Most of the deficiencies noted are related to lack of features to optimize operation and maintenance practices, but are not critical to basic function of the water pump station. Other noted deficiencies, such as leaks and overgrown vegetation can be addressed through routine maintenance or PRASA's renewal and replacement program and do not require major capital improvements.

4.6. Water Storage Tanks

Each facility was evaluated under the following two categories:

- Operations/Process Control
- Equipment/Maintenance

Since water storage tanks are not used to treat the water, there are no compliance issues considered in their evaluation; however, presence of chlorine boosters at facilities were noted. Because water storage tanks are not generally staffed and have a limited amount of equipment, the staffing and training category was not included in the evaluation of the water storage tanks.

4.6.1. Inspection Results

A total of 83 water storage tanks were inspected. Table 4-8 provides a summary of the facility ratings by each of the two evaluation criteria, as well as the overall facility rating. None of the tanks received an overall unacceptable rating. Poor ratings were given to 16% of the inspected tanks and 84% were rated as adequate or good. Although no tanks received an overall unacceptable rating, it should be noted that six tanks received an unacceptable rating for the Operations/Process Control Category.

Table 4-8.
Water Storage Tanks

Number and Percentage of Ratings by Category

Rating Range	Ops/Process Control		Equipment/ Maintenance		Overall Rating	
	Number	Percent[(1)]	Number	Percent[(1)]	Number	Percent[(1)]
Unacceptable (0-0.4)	6	7	0	0	0	0
Poor (0.5-1.4)	32	39	3	4	13	16
Adequate (1.5-2.4)	31	37	57	69	62	74
Good (2.5-3.0)	14	17	23	28	8	10
Average Rating	1.6		2.2		1.9	

[(1)] Percentages may not add to 100% due to rounding.

4.6.2. Conclusions

The water storage tanks are generally in adequate condition and are expected to continue to serve their intended function of providing potable water storage throughout the distribution systems. Some of the noted deficiencies are related to lack of features to optimize operation and maintenance of the tanks (e.g. local or remote tank level monitoring) and are not critical to basic function of the tanks. However, there were a few deficiencies that should be addressed to ensure the tanks provide a safe, reliable source of stored potable water. These deficiencies do not require significant capital upgrades, but rather a modification to operation and maintenance practices (e.g. removal of overgrown vegetation, routine water tank water quality testing and periodic tank internal inspections) or can be addressed through PRASA's renewal and replacement program (e.g. repairs to tank hatches, vents and security fences).

4.7. Wastewater Treatment Plants

All 62 of the WWTPs were visited once for this part of the evaluation. Each visit consisted of a site walkthrough and an interview with the operator, plant supervisor or designated person. Thus, information was at least in part based on the understanding of the individual whom was being interviewed. Each facility was given an overall rating, based on an evaluation of each of the following four categories:

- Compliance
- Operations/Process Control
- Equipment/Maintenance

- Staffing/Training

4.7.1. Inspection Results

Table 4-9 provides a summary of the WWTP ratings by each of the four evaluation criteria, as well as the overall facility rating. Poor ratings resulted for 23% of the WWTPs, with 58% having an Adequate rating and 19% being rated in the Good category.

Table 4-9.
Wastewater Treatment Plants

Number and Percentage of Ratings by Category

Rating Range	Regulatory Compliance[1]		Ops/Process Control		Equipment/ Maintenance		Staffing/ Training		Overall Rating	
	Number	Percent[2]	Number	Percent[2]	Number	Percent[2]	Number	Percent[2]	Number	Percent[2]
Unacceptable (0-0.4)	19	32	0	0	0	0	0	0	0	0
Poor (0.5-1.4)	11	18	1	2	3	5	14	23	14	23
Adequate (1.5-2.4)	16	27	29	47	44	71	38	61	36	58
Good (2.5-3.0)	14	23	32	52	15	24	10	16	12	19
Average Rating	1.3		2.4		2.2		1.8		1.9	

[1] Two WWTPs that discharge to underground injection were not evaluated under this criterion because compliance information was not available.

[2] Percentages may not add to 100% due to rounding.

4.7.2. Conclusions

The WWTPs generally range from poor to good condition with compliance as the category of primary concern. Compliance with NPDES effluent limits has been the greatest challenge for many of the WWTPs. Of the 30 WWTPs that received a poor or unacceptable compliance score, all are either recently closed, scheduled to be closed, or have capital improvement projects planned in the near future that will improve process performance. Once these closures and improvements are complete, it is anticipated that the effluent quality will improve and that the overall combined compliance rating for the WWTPs would elevate to at least adequate.

In addition, monitoring of WWTPs that are not staffed 24 hours per day is insufficient to provide prompt notice of problems. However, PRASA has included a telemetry program in its CIP and estimates that by the end of calendar year 2010, the number of its facilities

with remote monitoring will increase from just over 100 to over 1,500 facilities. The facilities to be included in the telemetry program will be prioritized to first include those where telemetry is necessary to comply with USEPA and PRDOH Consent Decrees, followed by other facilities where it is deemed operationally critical, as verified with Operational Area directors.

In summary, the WWTPs are aging, with an average age of approximately 26 years, and there have been significant compliance issues. However, PRASA has entered into a Consent Decree with USEPA to monitor and address compliance issues and is implementing a CIP to modernize many WWTPs, construct new facilities and decommission many old facilities. Furthermore, PRASA is investing in the training of its staff, and is planning on implementing modern systems for conducting and tracking maintenance activities. With these initiatives, the performance of its WWTPs is expected to improve.

4.8. Wastewater Pump Stations

PRASA operates a total of 619 wastewater pump stations. A total of 91 or 15% of these pump stations were inspected. In general, the inspected pump stations predominantly used wet pit type using submersible pumps, although several dry pit type stations were also inspected. There was a wide range of pumping capability from less than 100 gpm to over 10,000 gpm, depending on the population density and its proximity to the receiving WWTP.

Each facility was evaluated under the following three categories:

- Operations/Process Control
- Equipment/Maintenance
- Staffing/Training

Because the wastewater pump stations do not treat the wastewater and there are no effluent standards, the compliance category is not significant to the evaluation of wastewater pump stations.

4.8.1. Inspection Results

A total of 91 wastewater pump stations were inspected. Table 4-10 provides a summary of the facility ratings by each of the three evaluation criteria, as well as the overall facility rating. One of the pump stations received an overall unacceptable rating. Poor ratings were given to 31% of the inspected wastewater pump stations and 68% were rated as adequate or good. Although only one wastewater pump station received an overall unacceptable rating, it should be noted that 22% of the wastewater pump stations received an unacceptable rating for the Operations/Process Control Category.

Table 4-10.
Wastewater Pump Stations

Number and Percentage of Ratings by Category

Rating Range	Ops/Process Control		Equipment/ Maintenance		Staffing/ Training		Overall Rating	
	Number	Percent[(1)]	Number	Percent[(1)]	Number	Percent[(1)]	Number	Percent[(1)]
Unacceptable (0-0.4)	20	22	1	1	0	0	1	1
Poor (0.5-1.4)	31	34	9	10	10	11	28	31
Adequate (1.5-2.4)	33	36	39	43	59	65	51	56
Good (2.5-3.0)	7	8	42	46	22	24	11	12
Average Rating	1.3		2.2		2.1		1.7	

[(1)] Percentages may not add to 100% due to rounding.

4.8.2. Conclusions

The wastewater pump stations generally range from poor to good condition. More than half of the wastewater pump stations inspected had at least one piece of equipment out of service (e.g. generator or pump). In some cases the equipment had been out of service for an extended period of time. Approximately 13% of the wastewater pump stations reported bypasses or local overflows within the past six months as noted in the station log books. Greater attention to wastewater pump station equipment maintenance is necessary to improve reliability and reduce the frequency of bypasses. PRASA's new preventive maintenance program should increase equipment reliability and reduce the frequency and duration of equipment outages.

In addition, monitoring of wastewater pump stations is insufficient to provide prompt notice of problems and reduce the frequency and duration of bypasses. However, PRASA has included a telemetry program in its CIP and estimates that by the end of calendar year 2010, the number of its facilities with remote monitoring will increase from just over 100 to over 1,500 facilities. The facilities to be included in the telemetry program will be prioritized to first include those where telemetry is necessary to comply with USEPA and PRDOH Consent Decrees, followed by other facilities where it is deemed operationally critical, as verified with Operational Area directors.

4.9. Buried Infrastructure

Although buried infrastructure (i.e. water mains, buried valves, sewer mains, manholes, etc.) was not inspected, the following sections provide some discussion regarding indirect indicators of the condition of these assets and the steps PRASA is taking to improve them. Historically, PRASA has not kept a detailed database of its buried infrastructure. Nevertheless, PRASA is currently developing and updating a GIS database to allow for a better control and record of buried assets.

4.9.1. Water Distribution System

As discussed in Section 3.2.9, PRASA owns over 7,500 miles of water pipelines, which include both transmission and distribution pipes, with sizes ranging from 1 inch to 72 inches. Although the water transmission and distribution system was not inspected, it is reasonable to assume that a portion of the water distribution system will require some structural repairs, as well as rehabilitation to reduce leakage. Through the renewal and replacement program, PRASA is implementing aggressive pipe repairs and replacements to improve water transmission and distribution and reduce water losses. These initiatives, in conjunction with others (i.e. meter replacement and reduction of illegal connections), target PRASA's objectives for reducing unaccounted for water.

Although pipeline and meter replacements and detections of illegal connections may provide some reduction in unaccounted for water, unaccounted for water is expected to remain at levels significantly above typical industry standards. PRASA recognizes that aggressive reduction in unaccounted for water could increase revenues, reduce operating costs and reduce the need for plant expansions.

During FY2007, approximately 62% of the potable water produced and distributed by PRASA was unaccounted for water. Unaccounted for water is defined as follows:

$$\text{Unaccounted for Water} = \frac{\text{(volume produced – volume billed – volume unbilled but authorized)}}{\text{volume produced}}$$

Sources of unaccounted for water include:

- Theft of water (from hydrants or unauthorized connections to system).
- Metering deficiencies at plants, wells and at the point of delivery.
- Use of meter reading estimates and misreads.
- Leakage in water mains.
- Water main breaks.
- Storage tank overflows and leaks.

- Hydrant use for firefighting and other authorized, but unmetered uses.

Based on a comparison to other utilities in the U.S. and Canada, PRASA's unaccounted for water is extremely high. In a recent utility survey, the median unaccounted for water for all survey participants was 9.7%[16]. The benchmarking data is broken down and summarized under various different categories of participating utilities. The categories most applicable to PRASA and referenced throughout this report are:

- Utilities serving a population greater than 500,000.
- Utilities providing both water and wastewater services.
- All Utilities (includes 100% of the survey participants).

The benchmarks results for unaccounted for water published in the report are summarized below in Table 4-11:

Table 4-11.
Unaccounted for Water (%) Utility Benchmarks

Utility Category	Top Quartile	Median	Bottom Quartile
Serve > 500,000	5.8	11.2	12.9
Combined W & WW	5.3	9.7	13.1
All Utilities	5.7	9.7	13.5

Source: Benchmarking Performance Indicators for Water and Wastewater Utilities: 2006 Annual Survey Data and Analyses Report, AWWA.

As indicated above, PRASA's unaccounted for water falls well outside the normal range for this performance metric. PRASA management recognizes this amount of unaccounted for water is unacceptable and has designated this as a top improvement priority. Therefore, PRASA is implementing a series of actions to address the primary contributors of water losses: a) water line losses, b) poor metering at both the production (plants) and sale (customer connections) points, and c) theft. PRASA also recognizes that if it can reduce unaccounted for water, it will increase revenue, reduce O&M expenses, and reduce the need for capital improvements to increase water supply. The significance of unaccounted for water and the measures PRASA is implementing to reduce unaccounted for water are discussed below in more detail.

Cost of Unaccounted for Water: Assuming 50% of PRASA's electricity and chemical consumption is associated with producing and distributing potable water, the estimated FY2007 cost of chemicals and electric power for producing and distributing the 62% unaccounted for water is approximately $26M. Because a portion of the unaccounted for

[16] "Benchmarking Performance Indicators for Water and Wastewater Utilities: 2006 Annual Survey Data and Analyses Report, published by the AWWA".

water is assumed to be overestimates of treated water production, the actual potential annual cost savings from reducing unaccounted for water is less than $26M. However, if PRASA were able to reduce leakage and other distribution system losses, there would be a direct cost savings. For example, reducing leaks to achieve a 10% reduction in unaccounted for water would result in an estimated annual savings in chemicals and electric power to PRASA of approximately $2.6M.

Water Accountability Pilot Program: On January 18, 2007 the Board declared the reduction of unaccounted for water part of PRASA's public policy, and approved the execution of a Water Accountability Pilot Program, currently being implemented. The pilot program intends to document the non-revenue water in five different service areas, each consisting of approximately 5,000 customers, to determine the causes of the high percentage of unaccounted for water, and to field test the effectiveness and cost of different management strategies to reduce non-revenue water. The pilot program includes, but is not limited to:

- Customer by customer meter census, to ensure all customers that have water service have an active PRASA account and meter.
- Billing system corrections and updates.
- Field inspection and correction of all meter problems.
- Preparation of accurate system maps using GIS and hydraulic modeling of the pilot areas.
- Leak detection surveys (i.e. listening for leaks at valves and hydrants).
- Water audit both before and after correction in the pilot areas.
- Technology and knowledge transfer of the techniques and experiences learned in the pilot program to PRASA personnel.

The pilot program is expected to determine many of the causes of unaccounted for water and produce cost-effective strategies to be implemented on an island-wide basis. Field experience from the pilot project will be used to develop procedures and prioritize tasks to substantially reduce unaccounted for water. So far, three of the five meter census pilots have been completed. Preliminary results show that approximately 24% of meters inspected presented problems that may affect billing and revenues, ranging from incorrect account number to missing meters. Given the preliminary results and the potential to increase revenues, PRASA will conduct an island-wide census (the "Mega Census") to eliminate illegal connections, replace old, malfunctioning and broken meters, update PRASA's customer database, and reduce billing problems. The Mega Census is expected to be completed by FY2010.

Revenue Loss from Unaccounted for Water: Based on the pilot program results in three service areas (which account for approximately 1.4% of PRASA's water customers), PRASA estimates that approximately 10% of the customer water meter locations go unbilled due to theft, absence of current customer data for billing, and other similar issues. As these sources of unbilled consumption are identified and addressed, they will either reduce costs (if water service terminated) or increase revenue (if the service is maintained and billed). If the unbilled water in these pilot areas is representative of the island-wide water systems, the potential additional annual revenue from these sources is estimated at $43M. PRASA is in the process of completing pilot studies in two additional pilot areas. The results from these other pilot areas will help refine the estimate of island-wide potential additional revenue from these sources. PRASA's projected increase in revenue from its efforts to reduce unaccounted for water are further discussed in Section 7.4.2.

Customer Meters: PRASA has embarked on a comprehensive, system-wide program to replace old water meters at all customer locations. Between January 2005 and June 2007, PRASA replaced approximately 370,000 customer meters. PRASA is planning to replace an additional 144,000 of its older customer water meters by the end of FY2010 and then continue ongoing meter replacements to maintain reliability of customer meters. PRASA's CIP includes an investment of over $40M during the next five years for meter replacements. Although PRASA customer meters are currently manually read, beginning in 2008 PRASA is planning to begin installing some meters with remote reading capability to increase meter reading accuracy and efficiency.

Treated Water Production Meters: Many of PRASA's WTPs have historically lacked adequate treated water production flow meters to accurately calculate the volume of treated water produced by PRASA. Therefore, treated water production from many WTPs is estimated and thus a probable significant source of unaccounted for water (i.e. overestimation of production may contribute to the high unaccounted for water reported). In a recent survey, PRASA reports that 15% of its treated water production points were lacking a flow meter and 30% had flow meters that were not operating. PRASA is planning to address these production meter deficiencies in a phased approach, first addressing the treated water flow meters at 26 of its largest WTPs, which account for 80% of PRASA's treated water production. The improvements to be implemented include installation of new meters, adjustments and calibrations, and other modifications. Phase I is expected to be completed in FY2008. Phase II will address 52 WTPs, which account for 16% of PRASA's treated water production. Phase II is expected to be completed by FY2012. Once these treated water flow meter improvements are implemented, PRASA will be able to more accurately calculate its treated water production and better assess and monitor its unaccounted for water.

Pipe Repair and Replacement: During the 15-month period ending March 2007, PRASA replaced approximately 225 miles of pipe, or approximately 1.9% of the total water and wastewater system pipe networks (based on lengths of existing pipelines recorded in PRASA's GIS). This exceeded PRASA's goal for pipe replacement over this time period by almost 20%, reflecting PRASA's commitment to pipeline renewals and ability to implement these capital projects. In addition, over this same time period, PRASA has repaired over 10.5 miles of piping using pipe lining technology. PRASA plans to continue replacing and repairing piping at a similar rate, in order to bring the system to optimal operating conditions. Pipe repair and replacement, which targets pipe break and leak-prone areas, are identified by PRASA's Operational Areas and prioritized according to severity of the problem. This recent rate of pipe repair and replacement corresponds to an annual renewal rate of approximately 1.6% and translates to a complete system renewal in approximately 61 years if the current repair and replacement rate continues. This rate of renewal is consistent with many utility practices, which vary widely based on age of systems, soil conditions and other factors. Over time, PRASA's pipeline replacement efforts should reduce water system leaks and sewer overflows, reduce service calls, and lower the cost of emergency repairs. With proper prioritization of pipeline replacements, PRASA's pipeline replacement program is expected to allow PRASA to continue to provide adequate water and wastewater service.

Leak Monitoring and Control: PRASA reports that in the last two fiscal years, the active water distribution system leaks (i.e. reported leaks not yet repaired) have decreased from an average of 1,506 in FY2006 to 1,040 in FY2007. PRASA reports active leaks on a weekly basis. Figure 4-1 shows total active leaks on a monthly basis (i.e. the totals from one of the weekly reports are displayed each month). This figure also shows the active leaks of more than 7 days in duration, which reduced from an average of 559 in FY2006 to 131 in FY2007. Monitoring of active leaks is part of the weekly metrics discussed at PRASA's staff meetings with its Executive President. Although not supported by FY2007 unaccounted for water estimates, this reduction in active water system leaks is expected to result in a reduction in unaccounted for water and improved customer service.

The total number of leaks reported for FY2006 and FY2007 are 80,195 and 83,634, respectively. This results in an average leak occurrence rate of almost 1,100 leaks per 100 miles of water distribution piping per year. As shown in Table 4-12, PRASA's rate of leak occurrence is very high compared to other utilities in the U.S. and Canada. Therefore, although PRASA is more promptly repairing leaks compared to past practice, the rate of occurrence is still high and will continue to contribute to unaccounted for water. Note that PRASA's systems currently do not filter out duplicate leak reports and PRASA has indicated that not all leaks are reported; therefore, the total number of actual leaks may vary from the quantities reported.

Figure 4-1: 2005-2007 Active Water System Leak Reduction

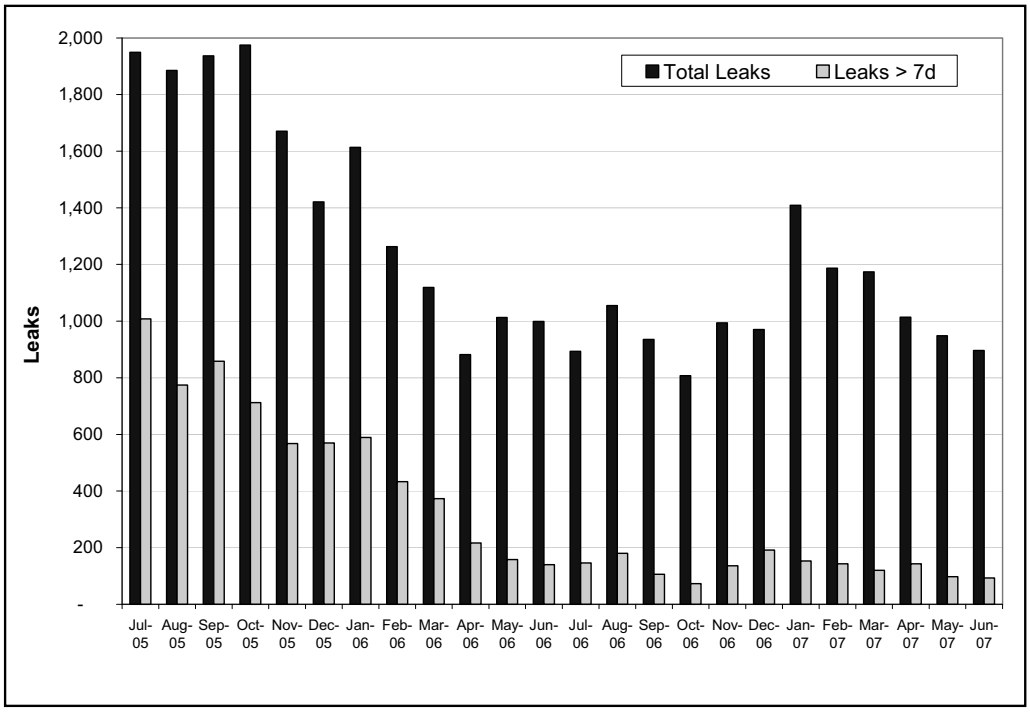


Table 4-12.
Water Distribution System Integrity Utility Benchmarks

(Annual leaks and breaks per 100 miles)

Utility Category	Top Quartile	Median	Bottom Quartile
Serve > 500,000	32.4	66.9	82.2
Combined W & WW	17.5	45.2	77.3
All Utilities	16.7	39.1	68.8

Source: Benchmarking Performance Indicators for Water and Wastewater Utilities: 2006 Annual Survey Data and Analyses Report, AWWA.

Theft: In addition to leakage, theft of water is a likely significant contributor of unaccounted for water. PRASA is in the process of identifying these illegal connections and charging fines and pursuing legal action against offenders. During FY2007, PRASA identified 21,700 illegal connections through Regional intervention initiatives and weekend incursions. Identification of illegal connections should reduce unaccounted for

water and increase revenues. Furthermore, pursuing legal action and implementing fines against offenders should act as a deterrent to illegal connections.

4.9.2. Wastewater Collection System

Although the wastewater collection system was not inspected, it is reasonable to assume that a significant portion of the wastewater collection system will require some structural repairs, as well as rehabilitation to reduce inflow and infiltration. The PRASA V Consent Decree requires PRASA to develop and implement a sanitary sewer system evaluation plan (SSSEP) and a sanitary sewer system repair plan for collection systems associated with seven WWTPs. For the balance of its wastewater system, PRASA is to develop and implement a Preliminary Sanitary Sewer System Evaluation Plan (PSSSEP). Based on the results of the PSSSEP, PRASA is to develop and implement a SSSEP for these remaining systems.

According to the Quarterly Progress Report No. 3 (covering period through May 31, 2007) for the PRASA V Consent Decree, progress is being made on the implementation of the SSSEP for the initial seven areas, although the extent of repairs to be required in these areas and throughout the entire wastewater collection system is not yet identified.

As discussed above, PRASA is actively replacing portions of its wastewater collection piping network. These replacements, coupled with aggressive management of sewer overflows have reduced both the frequency and duration of sewer overflows. PRASA reports that in the last two fiscal years, the active sewer overflows have decreased from an average of 389 per week in FY2006 to 250 per week in FY2007. PRASA reports active sewer overflows on a weekly basis. Figure 4-2 shows total active overflows on a monthly basis (i.e. the totals from one of the weekly reports are displayed each month). This figure also shows the active overflows of more than 7 days in duration, which were reduced from an average of 92 in FY2006 to 5 in FY2007. Data are not available regarding frequency of overflows in combined sewer systems compared to separate systems. Monitoring of active overflows is part of the weekly metrics discussed at PRASA's staff meetings with its Executive President.

The total overflows reported for FY2006 and FY2007 are 40,366 and 34,121, respectively. This results in a sewer overflow rate of 997 and 843 overflows per 100 miles of sewer per year for FY2006 and FY2007, respectively. As shown in Table 4-13, PRASA's sewer overflow rate is very high compared to other utilities in the U.S. and Canada. Note that PRASA's systems currently do not filter out duplicate overflow reports and PRASA has indicated that not all overflows are reported; therefore, the total number of actual overflows may vary from the quantities reported.

Figure 4-2: 2005-2007 Active Sewer Overflow Reduction

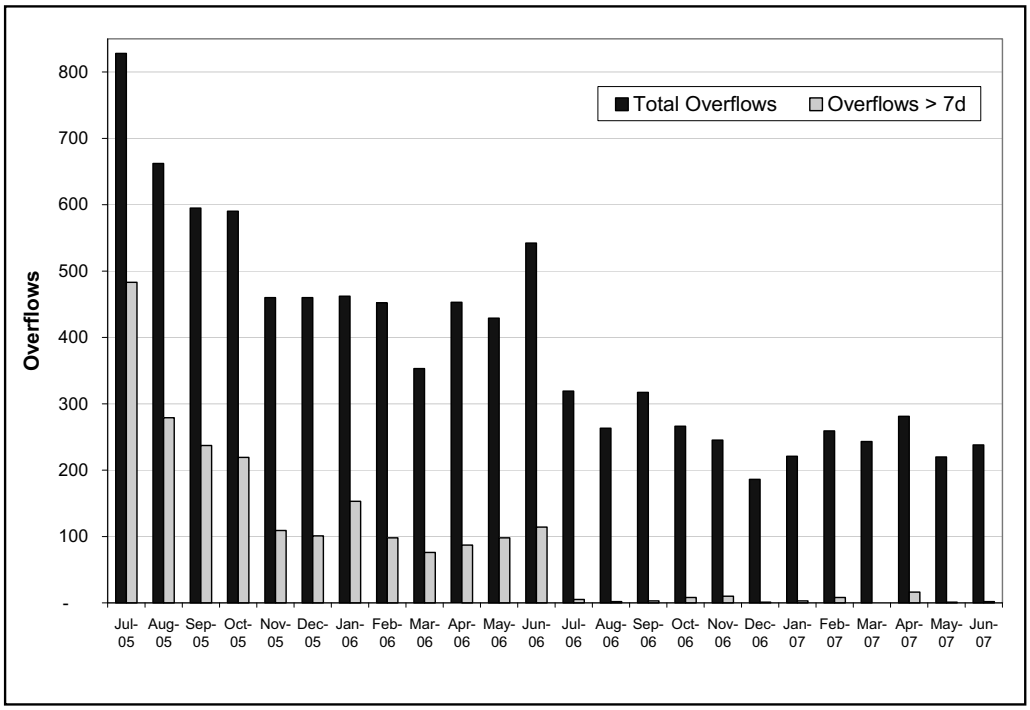


Table 4-13.
Sewer Overflow Rate Utility Benchmarks

(Annual overflows per 100 miles)

Utility Category	Top Quartile	Median	Bottom Quartile
Serve > 500,000	1.10	4.83	7.70
Combined W & WW	1.15	2.85	7.04
All Utilities	1.2	3.2	7.7

Source: Benchmarking Performance Indicators for Water and Wastewater Utilities: 2006 Annual Survey Data and Analyses Report, AWWA.

As indicated above, PRASA's sewer overflow rate falls well outside the normal range for this performance metric. Through continued aggressive management and the implementation of the sanitary sewer system repair plans being prepared in accordance with the PRASA V Consent Decree, PRASA should continue to see reductions in sewer overflows.

4.9.3. Conclusions

PRASA recognizes that the current amount of unaccounted for water and the frequency of sewer overflows is unacceptable and is taking steps to reduce these through pipeline replacements, meter replacements, finding illegal water system connections, and aggressively managing leaks and overflows that do occur so as to minimize their duration. Under the PRASA V Consent Decree, PRASA is implementing sanitary sewer evaluations and repair plans to reduce levels of infiltration and inflow that must be treated at its WWTPs. Through the implementation of continued pipeline replacements as evidenced in PRASA's CIP and the aggressive management of leaks and overflows, PRASA is expected to continue to improve its performance with regard to water distribution system leaks and sewer overflows.

4.10. Summary of Findings and Conclusions

The condition of the facilities visited varied from new to those requiring significant capital upgrades. Compliance with discharge permit limits and drinking water standards varied greatly depending on the plant age, condition and experience of operators. Facility conditions ranged from poor to good with 83% in the adequate to good range. A number of PRASA's WTPs and WWTPs are the subject of current Consent Decrees with the USEPA and PRDOH and many of these facilities are either scheduled for closure (through consolidation to regional facilities) or have ongoing or planned capital improvements to increase capacity and address compliance problems.

Despite numerous compliance problems, the facilities are producing and delivering potable water and conveying and treating wastewater. The condition of many facilities is not entirely unexpected, due to historically insufficient commitment of capital and operational resources over the years. PRASA demonstrates a thorough understanding of the System shortcomings. The planned capital programs along with the operation and maintenance improvements are generally in alignment with the System needs. Once implemented as planned, the System should demonstrate improvement in performance, including substantial advances towards complying with regulatory requirements.

5. Operations and Maintenance Practices Evaluation

5.1. Introduction and Background

The evaluation of the adequacy of PRASA's O&M practices is based on compliance with regulatory requirements, interviews with PRASA personnel and facility observations by field inspectors. With respect to maintenance, MPPR/Malcolm Pirnie's evaluation focuses on those assets that require continuous maintenance attention, including WTPs, WWTPs, wastewater pump stations, and large dams.

The water and wastewater utility industry has experienced similar shifts in trends as other utility markets such as electricity and telephone. For example, most water utilities now carry out some form of asset management, ranging from relatively simple maintenance programs to integrated programs linked to the utility's business planning process. Effectively managing water and wastewater assets such as pumps and unit processes is critical to a utility's long-term ability to reliably provide high-quality service at affordable rates.

Many high-performing water and wastewater utilities are developing formal asset management plans that support the development, security, and preservation of utility assets. Asset management is broadly defined as managing the life cycle costs (both capital and O&M expenses), use, and reliability of a utility's assets to optimize their value in support of utility operations. A utility's O&M policies and procedures should include the following:

- A process for prioritizing and scheduling maintenance activities
- A formal process for tracking maintenance activities and costs by specific asset
- A process that compares scheduled maintenance activities with actual maintenance tasks performed
- A set of performance measures for rating maintenance performance
- A formal and effective O&M plan
- Standard operating procedures (SOPs) for all maintenance activities

Of critical importance to evaluating the adequacy of O&M practices is the operational and performance history of the facilities and systems. Operational performance history is fundamentally measured by compliance with potable water and wastewater effluent quality requirements. As part of the condition assessment described in Section 4 of this

report, compliance ratings were developed for WTPs and WWTPs. The WTPs and WWTPs received some of their lowest ratings in the compliance category. Although this may be some indication of the effectiveness of O&M practices, in many cases capital projects (or in some cases planned plant closures) are needed to achieve reliable compliance.

Numerous WTPs and WWTPs that received poor or unacceptable compliance ratings are either scheduled for closure or have planned capital improvements. The net effect of these substantial physical modifications or closures should result in improved compliance. After implementation of these projects, a better assessment of the effectiveness of O&M practices as it relates to compliance issues can be made.

As part of the facility visits to conduct the condition assessments described in Section 4, MPPR/Malcolm Pirnie also evaluated the O&M practices and conditions by which the assets are maintained and long term compliance is achieved. It should be mentioned that while each facility was only visited once, which represented a snapshot in time, collectively, there were many common O&M practices observed consistently across the inspected assets. The following analysis will consider the observed O&M practices and industry standards.

5.2. Maintenance

PRASA acknowledges the need of standardized process for prioritizing and scheduling preventative, corrective and routine maintenance activities. Currently, preventive maintenance is not formally conducted at most facilities. Nearly all the plant operators described a verbal process of reporting unscheduled (corrective) maintenance (e.g., malfunctions, equipment failures, etc.) to their supervisor. Once notified, the supervisor would, in turn, begin the process of generating a work order request, and/or pass it on to the regional maintenance manager. After a written work order is generated, it then goes through a process of approvals to authorize the repair (depending on amount and nature of the work). The local facility is largely separated from the process after the problem has been "reported." While effective communication using mobile phones was observed between many of the field staff and supervisors, the lack of formal systems in place leaves prioritization up to individuals.

Furthermore, the mechanisms available to the supervisors by which maintenance activities are carried out vary significantly between Operational Areas. These non-standardized processes may hinder long-term efficient and effective maintenance. For example, some areas rely on PRASA mechanics and electricians to do maintenance, others rely on outside contractors, and others use a combination. The process for implementing maintenance then becomes heavily vested in the supervisor's approach and

memory, and when a supervisor leaves, the maintenance history is lost or needs to be recreated.

During facility inspections, MPPR/Malcolm Pirnie found that many equipment units throughout the water and wastewater systems were out of service for an indefinite period of time, indicating a critical need for an effective maintenance program. Some of the units have been out of service for months, some for years. While the root causes for maintenance issues observed were not independently verified, operations staff cited a combination of factors that have contributed to the long-term outstanding maintenance issues including:

- inadequate funding for maintenance,
- low spending caps at the plant level,
- a slow bureaucratic process in processing written work orders, and
- supplier and vendor issues, with some located as far away as Canada.

Costs for repairs were generally not available at the plants, unless there was a regional or Operational Area supervisor located at that plant who was involved in the budget appropriations process.

PRASA's plant maintenance personnel work out of regionally-managed offices or shops. These regional maintenance centers service pump stations and plants, an approach that provides some economies of scale since many of the WTPs and WWTPs are small facilities where it would not be cost effective to have dedicated maintenance personnel. However, there are facilities that are large and complex enough to require dedicated maintenance personnel in order to operate reliably. For example, the Miradero WTP (a 20-MGD facility) would qualify as a large plant and the large number of long-standing maintenance issues observed at the Miradero WTP confirms the need for on-site maintenance staff. Many of the larger WWTPs (i.e. capacities above 5 MGD) had a dedicated maintenance staff. During the inspections, MPPR/Malcolm Pirnie noted that in many Operational Areas, maintenance personnel with electro-mechanical skills were in high demand and short supply. Several centers and large WWTPs had unfilled job openings for people with these skills. Subcontractors were used to fill these skill gaps and various other maintenance needs. For example, routine maintenance on pump stations was often conducted by PRASA staff; however, for maintenance on confined space areas, or repairs to pumps or motors, outside contractors are often utilized.

5.2.1. Integrated Preventive Maintenance Program (IPMP)

PRASA has previously acknowledged that its maintenance practices require improvement and is in the early stages of improving its maintenance practices. The Consent Decree signed by PRASA and the USEPA in 2005, requires PRASA to

implement a comprehensive IPMP to ensure the proper operation and maintenance of its plants. PRASA is in the process of implementing several initiatives that are part of the IPMP and is in the process of developing others. Through the IPMP, PRASA will establish a plan to enable programmed and continuous maintenance to plants, pump stations, vehicles, and equipment to provide for more reliable service, improve client satisfaction, and achieve long term operational cost savings through preservation of assets. The four overriding initiatives of the program that will be integrated include:

- Defining new purchasing and logistic processes to provide the appropriate services and materials at the proper time in an efficient manner.
- Developing the required skills within the organization to support all processes.
- Developing infrastructure standards for new facilities including equipment, and information technology tools for remote monitoring and control.
- Developing detailed maintenance work plans with specific schedules and tasks.

In March 2007, PRASA began implementing SAP PM as the application software to support the maintenance/asset management process. The software will be regionally managed and centrally monitored. The software is expected to be in place in all Regions by the end of 2007 and full implementation will be completed within the next few years, since it will take some time to get inventories and data for all facilities into the software. PRASA currently reports a total inventory value of approximately $17M, with a 70% availability of parts. With the implementation of the SAP PM for material requirement planning, PRASA estimates a 30% inventory value reduction, to approximately $12M, and an increase to 98% in parts availability. PRASA has hired the consulting firm Accenture LLP to implement the SAP PM software.

Some of the major benefits that PRASA expects from the implementation of the IPMP include:

- Improvement in asset useful life, resulting in an improvement in reliability of service and reducing the need for future capital programs and maintenance expense.
- More efficient maintenance processes by expediting work order process and allowing planning of work plans in advance (e.g. route planning).
- Improvement in inventory management resulting in a reduction of inventory waste, efficient access to replacement availability information and better procurement terms.
- Standardized equipment in facilities, reducing inventory costs, unnecessary equipment training, and increasing economies of scale in equipment procurement

PRASA plans to submit a comprehensive IPMP draft plan and implementation schedule to the USEPA on October 31, 2007. The USEPA will make comments to the plan and

PRASA must submit a revised plan within the following 90 days. PRASA has agreed to have the IPMP fully implemented by January 31, 2009.

5.3. Operations and Documentation

One recurring finding in the facility inspections is the need for facility-specific O&M plans or manuals for treatment plants. O&M manuals normally consist of written policies and SOPs for process equipment, such as pumps, sand filters, and other treatment processes. The O&M manuals at many of the small WTPs were written solely for the operation of their renovated sand filters. The SOPs at the WTPs deal mostly with procedures for analyzing process control samples for various parameters in the lab, not with equipment or treatment processes.

In general, the inspected large dams had O&M plans or manuals, but in some cases they needed to be updated. Even though the majority of WWTPs had O&M plans or manuals available these were written by the equipment provider at the time the plant was designed or built. It is industry practice to review and, if needed, update O&M plans on an annual basis. In addition, it is industry practice to have an independent O&M manual or O&M plan in addition to manuals provided by equipment manufacturers. An O&M plan is a core management tool used for an effective operations strategy and serves as a basis for managing the entire operation of a facility.

In the case of wastewater pump stations, the common finding was that these facilities did not keep documentation beyond the operator log book locally at the station. Most information was maintained at the regional service center for the pump stations. Industry practice is to keep a certain minimal level of information present at the pump stations, including, but not limited to a copy of the O&M manual, emergency procedures, relevant safety information (e.g., confined space procedures), vendor manuals and copies of as-built drawings.

In order to address its need for improved O&M manuals, SOPs and plans of operation for its WTPs and WWTPs, PRASA is planning to develop standardized O&M manuals by type of plant, and later customizing these to each specific plant. This effort will be implemented as part of the Process Control System program required by a USEPA consent decree for PRASA's WWTPs, and expanded to include WTPs. The standardized manuals will be developed taking into consideration USEPA guidelines. This initiative is programmed for completion beyond 2010. Currently, PRASA is requiring that project scopes for all plants undergoing rehabilitation include the preparation or updating of the plant's O&M manual.

5.4. Staffing and Training

5.4.1. Staffing

Nearly all the WTPs operate 24 hours per day, seven days per week. There is usually only one operator per shift. Several of the plants cover their night shift with overtime pay because they lack a permanently-assigned operator for that shift. Some of the plants have an on-site extra or "stand-by" operator while other plants share an "at-large" operator to fill in for absences and vacations, but this occasionally causes staffing problems when absences and vacations coincide. Other plants have a "celador" or maintenance person who checks the pumps at water intakes and other major equipment. Sometimes these "celadores" stand in for operators, though they are usually not certified operators. Several of the plants have operator vacancies which have not been filled due to recruitment problems.

The majority of WWTPs are staffed with one shift and several plants have two shifts. There are only a few WWTPs with 24-hour-per-day staffing. A critical issue with the WWTPS that are not staffed 24 hours per day is that there is no telemetry at most of the plants to notify the operator if there is a serious problem such as chlorine alarm, loss of pumping, power or serious electrical problem (e.g., blower malfunction).

While a few of the wastewater pump stations have telemetry capacity for a few basic functions, the majority still lack this feature. Many of the wastewater pump stations are checked by the operator less than seven days per week. Typically, the frequency of checks on the wastewater pump station is two, three, five or seven times a week depending on the Operational Area. Thus, there are no systems in place to monitor the status of these assets (e.g., whether they are working, etc.) between visits. PRASA is, however, in the process of installing telemetry systems throughout a large number of its facilities and the majority of the wastewater pump stations are expected to have telemetry within two to three years.

All of the large dams have network connectivity for security and monitoring of reservoir levels. Staffing is usually assigned in combination with adjacent pump stations or WTPs. Dam staffing usually covers a standard 40-hour work week. If weather conditions mandate, full 24-hour staffing is provided for monitoring water levels.

There is a need to review and fill staffing needs at many of the WTPs and WWTPs, especially the larger plants. For example, a strike by the operators at the Ponce de Leon WTP two years ago brought the sludge dewatering activities at that plant to a halt. There has been no resolution to the staffing of the Ponce de Leon WTP's sludge dewatering facilities and the sludge belt presses are still idle. Other observed issues included the four open operator positions at the 45 MGD Carolina WWTP, five at the Fajardo Regional WWTP, and approximately 20 at the Puerto Nuevo WWTP. On the other hand, PRASA

reports that approximately 119 new operator positions have been approved for FY2008, as part of PRASA's active recruitment initiative to fill existing open positions in treatment plants such as the ones mentioned above.

5.4.2. Training

Training is an important O&M issue that is currently being improved throughout the PRASA operating system. For example, at the time of facility inspections, many of the water and wastewater operators had a minimal level of training beyond the training necessary to receive their licenses. Most wastewater operators had basic chlorine instruction (for plants using chlorine) and many (but not all) operators had confined space training. PRASA, however, has recently embarked on an ambitious plan to provide training to plant operators in order to prepare them for the certification exam and plans to have all operators take such exam by the end of FY2008, since Consent Decree requirements obligate plant operators to have a valid operator license by June 2008 (PRDOH Consent Decree) and October 2008 (USEPA Consent Decree).

PRASA's training initiative is scheduled to provide training in seven major program areas as illustrated in Table 5-1 below. This training initiative was implemented in FY2006 and expanded in FY2007. Table 5-2 shows the increase in training provided by PRASA from FY2005 to FY2007 and projected for FY2008. Through this increased training, the capability and productivity of staff working at PRASA is expected to continue to improve.

Table 5-1.
2007 Projected PRASA Training Program

TYPE		TOPIC	Number of Participants
Regulatory	Health and Occupational Safety	Introduction to occupational risk management Risk management and risk communication programs Handling of dangers substances Forklift operation General introduction to health and security regulations Chlorine safety management Confined spaces HAZWOPER 40 hrs, HAZWOPER 8 hrs First aid Excavations	5,500

TYPE		TOPIC	Number of Participants
Operations	Plant Maintenance and Operation	Daily maintenance reports Pumping station Plant operator certification Transitional agreement (potable water) Orientation EPA Consent Agreement of 2006	4,450
	Water Collection and Water Distribution Systems	Desktop access Panel control Disinfection protocols	450
Human Resources	Organizational Philosophy	Special Project: Motivation Harassment prevention in the work place	5,500
	Computer and Information System	Lotus Notes 7.1 Keyboard operation MS Access, Excel, MS Powerpoint, MS Project, MS Word (basic, Intermediate, and Advanced)	1,120
	Management Development	Spanish writing Conversational English Persuasive communication Coaching Problem solving Team building	1,920
Commercial	Customer Service	Excellence and trust in client service Conflict Management Teamwork	2,610

Table 5-2.
Training Hours (FY2005-FY2007)

	FY2005	FY2006	FY2007	FY2008 (Projected)
Total Training Hours	15,197	73,411	94,357	79,042
Average Hours per Employee	3	13	16	14

Since May 2005, PRASA reports to have provided training for 535 plant operators (196 wastewater and 339 water), with 334 operators passing the certification exam to date. PRASA plans to have all operators take the certification exam by the end of FY2008. Table 5-3 summarizes the number of current licensed operators and operators in training as of October 2007. Currently a total of 267 of 546 WTP operators and 67 of 178 WWTP operators have valid operator licenses.

Table 5-3.
Licensed WTP and WWTP Operators by Type

WTP Operator Type	Quantity	WWTP Operator Type	Quantity
Operator License I	21	Operator License I	0
Operator License II	95	Operator License II	21
Operator License III	67	Operator License III	8
Operator License IV	84	Operator License IV	38
Operators in Training	279	Operators in Training	111
Total	546	Total	178

PRASA must report to the USEPA by October 15, 2008 and to the PRDOH by June 30, 2008, on the full compliance status of operator certification. Recently, PRASA's Human Resources Department began tracking and monitoring the training each employee has received and is in the process of establishing the specific skill and training requirements for each position to ensure employees have the required preparation to successfully perform their jobs and participate in continuous education and training if required for the position. With effective coordination and scheduling of the training courses, many of the training deficiencies noted for plant operators will be addressed. PRASA's program for continuing education is in the early stages of implementation, and thus its ultimate impact on plant operator performance cannot be assessed.

Based on a comparison to other utilities in the U.S. and Canada, PRASA's historical level of training was very low. The recent increase in training has brought PRASA to near, although still below the median for comparable utilities. The benchmarks for training hours per employee are summarized below in Table 5-4.

Table 5-4.
Training Hours per Employee Utility Benchmarks

Utility Category	Top Quartile	Median	Bottom Quartile
Serve > 500,000	31.8	24.5	16.4
Combined W & WW	31.7	21.8	11.7
All Utilities	32.3	21.4	11.6

Source: Benchmarking Performance Indicators for Water and Wastewater Utilities: 2006 Annual Survey Data and Analyses Report, AWWA.

5.5. Other Issues

5.5.1. O&M Budgets

5.5.1.1. Water

PRASA's total FY2007 O&M budget allocated for the water service system is approximately $414M, which is estimated as 70% of PRASA's total O&M budget. This is equivalent to an annual O&M cost per account of $329, which is slightly above the median compared to other utilities in the U.S. and Canada. The benchmarks for O&M cost per account for water service are presented in Table 5-5.

Table 5-5.
Water O&M Cost per Account Utility Benchmarks

Utility Category	Top Quartile	Median	Bottom Quartile
Serve > 500,000	$206	$292	$443
Combined W & WW	$180	$278	$420
All Utilities	$195	$278	$418

Source: Benchmarking Performance Indicators for Water and Wastewater Utilities: 2006 Annual Survey Data and Analyses Report, AWWA.

Another metric in which PRASA could be compared with other utilities is O&M cost per million gallons (MG) of treated water processed. PRASA reports that it currently produces approximately 676 MGD of treated water, resulting in a ratio of O&M cost per MG processed of $1,680 which is also slightly above the median compared to other utilities in the U.S. and Canada. The benchmarks for O&M cost per MG processed are presented in Table 5-6.

Table 5-6
Water O&M Cost per MG Processed Utility Benchmarks

Utility Category	Top Quartile	Median	Bottom Quartile
Serve > 500,000	$1,009	$1,474	$1,723
Combined W & WW	$1,028	$1,512	$2,316
All Utilities	$1,010	$1,507	$2,304

Source: Benchmarking Performance Indicators for Water and Wastewater Utilities: 2006 Annual Survey Data and Analyses Report, AWWA.

Given the complexity of its water system, a slightly higher O&M cost per account or per MG processed in comparison to stateside utilities is not unexpected. This suggests that PRASA's water system O&M budget is in the appropriate range. It is possible, however, that internal realignment of priorities and efficiency initiatives may be required to better

optimize the use of such budget. Further discussion and analysis of O&M budgets and costs is included in Section 7.

5.5.1.2. Wastewater

PRASA's total FY2007 O&M budget for wastewater services is approximately $177M, which is estimated as 30% of PRASA's total O&M budget. This is equivalent to an annual O&M cost per account of $242, which is slightly below average compared to other utilities in the U.S. and Canada. The benchmarks for O&M cost per account for wastewater service are presented in Table 5-7.

Table 5-7.
Wastewater O&M Cost per Account Utility Benchmarks

Utility Category	Top Quartile	Median	Bottom Quartile
Serve > 500,000	$197	$266	$407
Combined W & WW	$190	$278	$433
All Utilities	$202	$276	$433

Source: Benchmarking Performance Indicators for Water and Wastewater Utilities: 2006 Annual Survey Data and Analyses Report, AWWA.

Another metric in which PRASA could be compared with other utilities is O&M cost per MG of wastewater processed. PRASA reports that it currently treats approximately 245 MGD of wastewater, resulting in a ratio of O&M cost per MG processed of $1,976 which is about average compared to other utilities in the U.S. and Canada. The benchmarks for O&M cost per MG processed are presented in Table 5-8.

Table 5-8
Wastewater O&M Cost per MG Processed Utility Benchmarks

Utility Category	Top Quartile	Median	Bottom Quartile
Serve > 500,000	$881	$1,440	$2,728
Combined W & WW	$1,300	$2,074	$3,392
All Utilities	$1,272	$1,865	$3,202

Source: Benchmarking Performance Indicators for Water and Wastewater Utilities: 2006 Annual Survey Data and Analyses Report, AWWA.

One reason that could help explain why PRASA's wastewater O&M budget is low compared to its water O&M budget (relative to the benchmark comparisons) is that PRASA has several large primary treatment plants (i.e., all the plants with 301(h) waivers) which account for 61% of PRASA's total wastewater treatment capacity. Secondary treatment plants have significantly more equipment to operate and maintain at a higher cost. Another consideration is that this comparison could also suggest that the current O&M budget may be lower than what it should be in order to address all the

outstanding maintenance needs of the wastewater system. Further discussion and analysis of O&M budgets and costs is included in Section 7.

5.5.2. Metrics

Since 2004, PRASA has implemented a series of metrics for internally measuring its progress. The metrics have been classified under three primary categories: Departmental, Commercial and Operational. These metrics are evaluated every one to two weeks at the executive level. In 2005, the metrics were focused on operational issues such as frequency of sewer overflows and water leaks. PRASA's improvements in these areas of performance are illustrated in Section 4.9. Presently, PRASA has also started to focus on billing and client service metrics. Table 5-9 summarizes some of PRASA's metrics.

Table 5-9.
PRASA Operational and Performance Metrics Examples

Area	Metric	Results (June 2005)	Current Results (June 2007)
Clients without water service	No. of clients without service/ week	14,483	9,459
Generators	% operating	66.4%	98.3%
Purchase/Logistics	-Days to process purchase order -Days to process warehouse reserve -Inventory turns -Value of excess/obsolete inventory	30 25 N/A $3.5 million	14 9 1.8 $3.5 million
Actual meter readings	% actual meter reading (achieve 95% by 2010)	73%	87%
Customer service	Average telephone call wait time for customers (<5 minutes)	>4 minutes	52 seconds

Regional metrics are also used to target issues specific to the Regions. Similar to PRASA's overall organizational metrics, the Regions have developed and implemented the three primary categories (Departmental, Commercial, and Operational) adapted to their regional settings. These metrics target key managerial and operational aspects necessary for the Regions to maintain their part of the System and stay within the established budget. Some key metrics that Regions measure to assess achievement of goals and determine areas of needed improvement include regional budget and inventory controls, out-of service equipment disposal, payment to suppliers, training in the IPMP, telemetry and calibration implementation, compliance targets (i.e., bacteriology and chlorine incidents), reduction of illegal connections, piping renovation and leaks and overflow reductions.

5.5.3. Emergency Management

Based on past experience, PRASA's Emergency Management Department has developed protocols to address emergencies that affect the System. These protocols are implemented at a central and regional level in order to minimize disruption of service, minimize effects on System infrastructure, and optimize response time to stabilize the System. Protocols that have been developed include those to address hurricanes, droughts, strikes, earthquakes, and terrorist attacks. Protocols include actions that are performed throughout the year, such as preventive maintenance and continuous monitoring of reservoir and water supply levels, and actions performed right before, during, and after the event takes place. Procedures to address power outages, droughts and strikes are discussed below.

Hurricanes and prolonged power interruptions: Currently, 98% of PRASA's installed generators are operational. This allows for PRASA to continue System services in generator-equipped facilities during emergency events that cause electrical power interruptions such as hurricanes. As part of the CIP, PRASA has implemented projects to interconnect systems to allow for flexibility and redundancy in the water distribution service and also projects to rehabilitate or install generators in critical facilities to ensure minimal service interruption. For example, the Superaqueduct raw water pump station and WTP, Sergio Cuevas WTP, Puerto Nuevo WWTP, and Carraizo (Loiza) Regulated Dam, are equipped with emergency generators that allow for continuous operation for more than 48 hours. Also, in a joint effort with the Federal Emergency Management Agency (FEMA) and the United States Army Corps of Engineers (USACE), PRASA has planned generator procurements in case additional generators are required after a hurricane or other disaster.

Droughts: PRASA has undertaken measures to reduce water distribution service interruptions, including improvements to the Carraízo (Loiza) Regulated Dam which included an intensive dredging project completed in 1999 that removed approximately six million cubic meters of sediment, and the recent addition of new infrastructure that allows PRASA to draw water at lower levels. PRASA is developing and implementing other initiatives to provide alternate ways for water distribution, such as the bottling of 64,000 gallons of water to be sold to the Puerto Rico Emergency Management Agency and negotiations with the PRDOH to implement a recirculation program in WTPs to decrease treated water losses.

Strikes: PRASA continues to provide System operation training for management personnel to equip them with the knowledge and tools necessary to assume their subordinates' responsibilities and to operate the System in case of a strike. Protocols have been developed and implemented for logistics coordination during strikes that include entrance/exit from facilities, chemical delivery, and interagency coordination. As recently

as 2004, PRASA was forced to implement said protocols, as a result of the UIA-AAA strike. During the strike, the System continued to operate with minimal effects on service.

5.5.4. Old, Out-of-service Equipment

Nearly every WTP and some WWTPs had old, unused, or out-of-service equipment, some of it stored on the grounds or in the buildings. This was also the case with some of the wastewater pump stations. Many of the operators said that the equipment could not be removed until it was inventoried, appraised, and tagged for disposal or sale. The initiative that PRASA is implementing to inventory items and tools and regional efforts to reduce out-of-service equipment, as earlier mentioned, should help in the reduction of this unused equipment.

5.5.5. Record-Keeping

Though there seems to be good record-keeping at the individual plants as far as process control sampling goes, higher level record-keeping involving compliance issues and maintenance tracking are not available at the individual WTPs. Compliance records for the WTPs are maintained in PRASA's Department of Compliance offices. Compliance records should be available to the operators at each WTP. On the wastewater side, discharge monitoring reports were often sent back to the plant. However, there was often a delay receiving the report, which limited the value of the information to the operator.

5.6. Conclusions

While MPPR/Malcolm Pirnie's assessment of PRASA's O&M practices yielded several findings that illustrate the need for improvement in certain areas, there is evidence that PRASA is currently going through a major operational transformation that, if implemented effectively, should greatly improve PRASA's O&M practices. Some of the major areas for improvement are listed in Table 5-10 with their corresponding transformation initiative listed next to it.

Table 5-10.
Summary of O&M Findings and PRASA Initiatives

Area	Findings	Initiatives
Operational Practices	Several facilities with operational concerns documented in Section 4 and Asset Condition Report	Many of the operational concerns are being addressed through training, additional hires and capital improvements
Maintenance Practices	Primarily corrective in nature with no preventive maintenance	IPMP initiative to be fully implemented by January 2009
O&M Training	Limited training to most operators, not all operators certified	Training program in seven areas for all operators, including certification training
O&M Staffing	Several staffing needs unfilled	Recruitment initiative approved 119 new positions to fill current needs

Area	Findings	Initiatives
O&M Budget	Slightly higher than peers on water, slightly lower for wastewater	No changes in budget are planned, except for inflation and growth adjustments.
Operational Metrics	Several PRASA wide and regional metrics currently being measured and tracked at different levels	Continuing to develop and measure new metrics.

MPPR/Malcolm Pirnie reviewed the implementation plans for these initiatives and some of their early achievements and results. The implementation plans provide additional evidence that PRASA's transformation in O&M practices is well under way. While it is still early in PRASA's efforts to overhaul its O&M practices, MPPR/Malcolm Pirnie concludes that PRASA is focused on making improvements in O&M practices and is headed in the right direction. Further discussion and analysis of O&M budgets and expenses is provided in Section 7.

6. Capital Improvements Program and Regulatory Compliance Status

6.1. Introduction

PRASA is implementing a Capital Improvements Program to improve its water and wastewater infrastructure. The purpose of the CIP is to modernize PRASA's infrastructure, protect public health, safeguard environmental quality, permit continued economic development and help bring PRASA's infrastructure into compliance with all regulatory requirements.

The CIP is a dynamic program that is constantly evolving and undergoing revision as needs arise, funding is identified, and projects transition from planning through design, construction and startup. PRASA's CIP has a comprehensive listing of projects and budgets through June 30, 2017. A total of 596 projects will be implemented between FY2007 and FY2017. As required by PRASA's Board of Directors, PRASA's Infrastructure Department must submit annually to the Board an updated five-year CIP plan for approval. Given the magnitude of the CIP, it is understandable that it will continue to evolve over time and the number and budgets of projects is expected to be updated regularly.

As of November 2007, PRASA's CIP includes $2.46B in capital expenditures over fiscal years 2007 through 2012, of which approximately $475M correspond to capital expenditures incurred in FY2007. The remaining $1.98B are programmed capital expenditures from FY2008 through FY2012. In addition, PRASA has estimated projected capital expenditures for FY2013 through FY2017 at $1.97B. The projects are divided into categories, groups and types. In addition, PRASA has implemented a grading system to prioritize projects to better manage the CIP, given its size and complexity. The individual project cost estimates within the CIP, including the renewal and replacement program, have not been independently verified. However, the information regarding project costs estimates in the North Region for projects assigned to the management of CPM-MPPR for projects in the FY2007-2011 period appear reasonable. This section of the report provides:

- an overview of PRASA's CIP, including summary of the program by project category,
- an assessment of the adequacy of the CIP to address identified system deficiencies and current requirements stipulated in open Consent Decrees with regulatory agencies, and
- an overview of the potential effects of future regulations to the PRASA system and the CIP.

6.2. Capital Improvements Program: Project Distribution and Costs

There are 596 projects currently included in the FY2007 – FY2017 CIP, with 319 projects that commenced during or prior to FY2007, 172 projects to commence in FY2008 through FY2012, and 105 projects to commence in FY2013 through FY2017. In addition, PRASA has 46 projects programmed beyond FY2017. Projects included in the CIP cover major capital improvements identified throughout all five Regions (East, Metro, North, South, and West), as well as island-wide initiatives such as technological advancements, telemetry implementations, preventive maintenance, meter replacement, and renewal and replacements to the system.

The CIP is developed by PRASA taking into consideration a) current and future infrastructure and operational needs identified from system planning studies, and b) regulatory commitments as stipulated in Consent Decrees, administrative orders, and other agreements with regulatory agencies. Once the need for a capital improvement project is identified, a project creation form ("Formulario de Alta") is prepared. The form summarizes the project scope, preliminary schedule, and cost estimates, amongst other information. The project is then assigned a CIP project number and added to the CIP, where it is categorized and classified according to PRASA's classification and prioritization system. The CIP analyzed in this section will be presented in the near future to PRASA's Board for revision and approval.

Total CIP investments per project are calculated taking into consideration the following estimated costs:

- Planning, Studies, and Land Acquisition Costs
- Design Costs
- Construction Costs
- Project Management and Inspection Costs
- Contingencies
- Miscellaneous Cost (includes financing costs, insurance, O&M documents and administrative costs)

The project management and inspection costs are assumed to be 7.5% of the construction cost. Contingencies are assumed to be 10% of the construction cost. Project cost estimates are inflated, on a compound basis, by 3.8% until the construction notice to proceed is executed. Also, throughout the development of the planning and design phases of the project, the contingencies are modified as the construction cost estimates are updated. Once the project goes out to bid and the bid is awarded, the amount calculated for contingencies is no longer updated and it remains as part of the assigned funds of the

project until it is completed and closed-out. During the construction phase of the projects, contingencies are used to cover change order costs and other costs that may occur, such as additional land acquisition, permitting, or design activities.

PRASA's PMCs assist PRASA in the development, implementation, and evolution of the CIP. PMCs provide support to PRASA in the project development process and actively participate in the planning, design and construction phases. They also manage key tasks that drive CIP project budgets, such as defining project scopes, negotiating consultant contracts for studies and design services, and preparation of project construction cost estimates.

6.2.1. Project Classification and Prioritization

CIP projects are classified into mandatory or non-mandatory categories. Mandatory projects are those that are required by law, as stipulated in Consent Decrees, administrative orders, and agreements with regulatory agencies. There are five CIP categories, listed below in order of importance:

- Mandatory (USEPA, PRDOH, Civil Action, Administrative Orders)
- Non-Mandatory Compliance (Health and Safety)
- Non-Mandatory Quality, Efficiency, Reliability and Redundancy
- Non-Mandatory Growth
- Non-Mandatory Other

Projects are further classified into groups and types of projects, which include:

- Water System (water supply, water distribution, WTP capacity increase and improvements, new WTP, water pump stations, and WTP STSs)
- Wastewater System (wastewater collection, WWTP capacity increase and improvements, new WWTP, wastewater pump stations)
- Preventive Maintenance (includes water and wastewater project types)
- Planning (includes water and wastewater project types)
- Renewal and Replacement (includes water and wastewater project types)
- PAP Projects, or "Proyectos Apremiantes" (includes water and wastewater project types)
- Technology (includes water and wastewater project types)
- Meters
- Buildings
- Fleet

Table 6-1 summarizes the complete CIP project distribution by category and group.

Table 6-1.
Number of Capital Projects by Category and Group

Category	Group	Number of Projects Initiated			
		FY2007[(1)]	FY 2008-2012	FY 2013-2017	Total
Mandatory (Consent Decrees, Administrative Orders, Agreements)	Water System	44	21	28	93
	Wastewater System	45	11	28	84
	Preventive Maintenance	1	2	0	3
	Subtotal	90	34	56	180
Non-Mandatory Compliance	Water System	30	24	9	63
	Wastewater System	79	61	2	142
	Subtotal	109	85	11	205
Non-Mandatory Quality, Efficiency, Reliability, Redundancy	Water System	48	18	9	75
	Wastewater System	10	6	0	16
	Meter Replacement	1	5	5	11
	Fleet	1	5	5	11
	PAP Projects	2	0	0	2
	Planning	5	0	0	5
	Renovation and Replacement	1	5	5	11
	Technology	10	0	0	10
	Subtotal	78	39	24	141
Non-Mandatory Growth	Water System	31	6	14	51
	Wastewater System	3	6	0	9
	Subtotal	34	12	14	60
Non-Mandatory Other	Buildings	5	2	0	7
	Technology	3	0	0	3
	Subtotal	8	2	0	10
TOTAL		319	172	105	596

[(1)] Projects were initiated during or prior to FY2007.

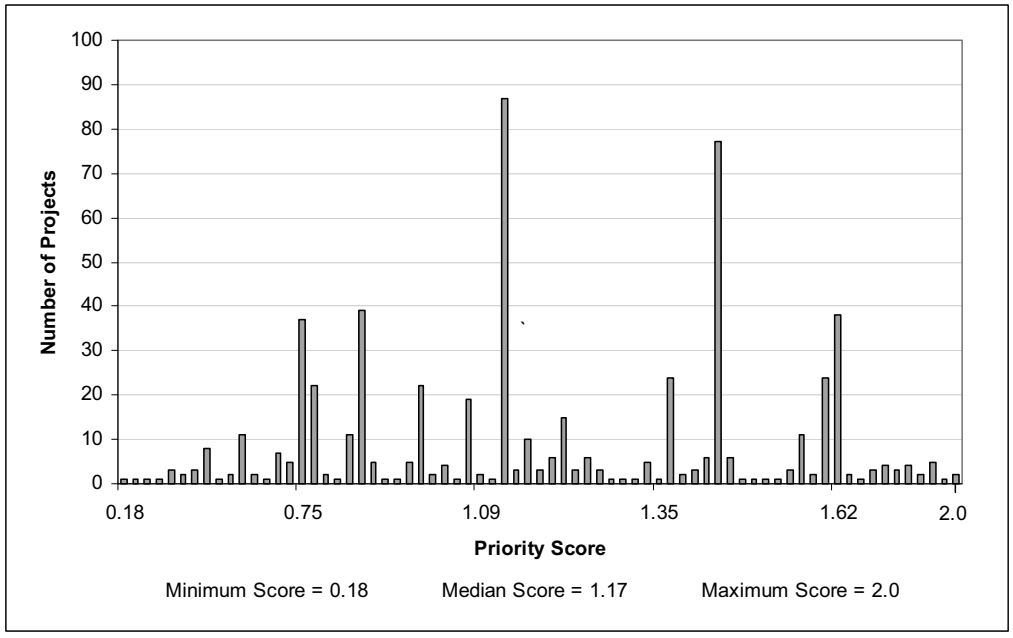
In addition to project classification, CIP projects are ranked according to a prioritization score. This score is the result of the weighted sum of the evaluation criteria adopted in PRASA's Master Plan. Categorizing and prioritizing projects gives PRASA the ability to maintain an organized and dynamic CIP. The criteria and associated weight of importance by which each project is evaluated are:

- Environmental Compliance (35% weight) – Satisfying local and federal environmental regulations, discharge limits, watershed protection, and sludge treatment and handling.
- Quality of Service (22% weight) – Service quality improvements, improvements to existing service areas, service continuity, WTP capacity expansion to meet demand, and treated water storage.

- Operational Efficiency (17% weight) – Reduction of operational costs and physical losses, plant improvements, and instrumentation.
- Reliability and Redundancy (13% weight) – Distribution redundancy for emergencies and other transient events, raw water storage, transmission redundancy, electrical power redundancy, and intake improvements.
- System Growth (9% weight) – Wastewater service extension, WWTP expansions in to accommodate service extension, and inclusion of Non-PRASA water systems.
- PRASA Management Privilege (4% weight) – Used by PRASA's management to increase priority of a project and break ties, when necessary.

The maximum score a project can receive is 2 (High Priority), and the minimum is 0 (Low Priority). As shown on Figure 6-1, most projects fall between the medium to high priority ranges. Figure 6-1 shows the score distribution throughout all 596 projects included in the CIP.

Figure 6-1: Project Distribution by Prioritization Score



6.2.2. FY2007 CIP

PRASA incurred $475M of capital expenditures in FY2007, which included $192M for projects in the mandatory classification. During FY2007, PRASA managed 319 capital projects that commenced during or prior to FY2007.

6.2.3. CIP Programming: FY2008-2012

The CIP budget for FY2008 through FY2012 is $1.98B and includes $979M for projects in the mandatory classification.

Figure 6-2 shows the total capital expenditures by category and the percentage each category represents of the total for FY2007 and projected for FY2008 through FY2012. Table 6-2 shows the capital expenditures for FY2007 and projected for FY2008 through FY2012. Table 6-3 includes the project distribution and capital expenditure by group and type classification.

Figure 6-2: 2007-2012 Total Capital Expenditures by Project Category

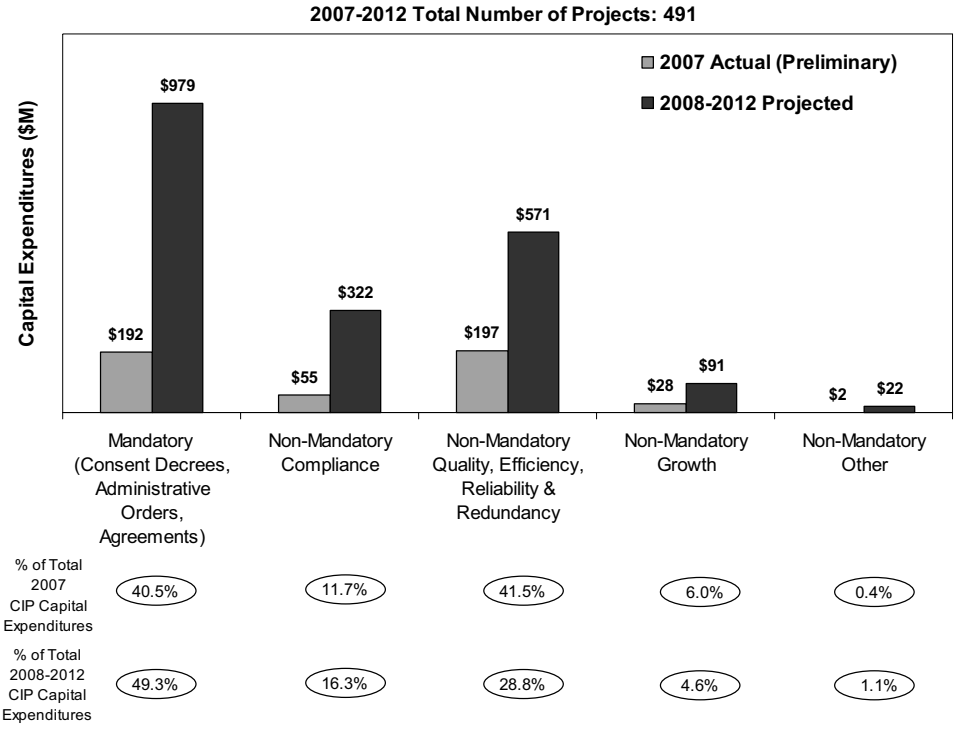


Table 6-2.
Capital Improvements Program 2007-2017 ($M) by Category

PROJECT CATEGORY	FISCAL YEAR ENDING JUNE 30						Total[1]	Total
	2007	2008	2009	2010	2011	2012	2008-2012	2013-2017
Mandatory (Consent Decrees, Administrative Orders, Agreements)	$192.3	$278.1	$243.2	$197.6	$141.4	$118.4	$978.7	$591.0
Non-Mandatory Compliance	$55.4	$80.1	$80.9	$75.8	$55.1	$30.5	$322.5	$409.1
Non-Mandatory Quality, Efficiency, Reliability & Redundancy	$196.8	$88.9	$142.8	$124.2	$108.0	$106.6	$570.5	$760.3
Non-Mandatory Growth	$28.3	$38.6	$19.5	$12.5	$6.9	$13.2	$90.7	$185.0
Non-Mandatory Other	$1.8	$4.0	$3.6	$4.8	$3.5	$5.7	$21.5	$23.0
TOTAL[1]	$474.7	$489.6	$490.0	$415.0	$314.9	$274.3	$1,983.9	$1,968.3

[1] Numbers may not add due to rounding.

Table 6-3.
Capital Improvements Program 2007-2017 ($M) by Project Type

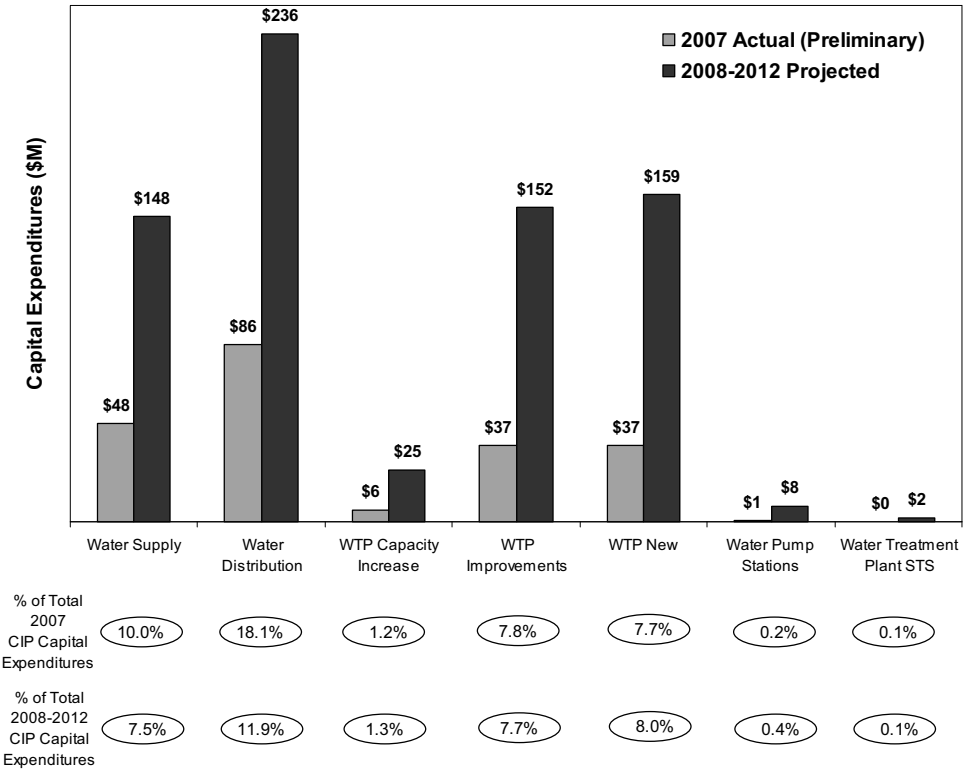
CATEGORY TYPE	SUB-CATEGORY	FISCAL YEAR ENDING JUNE 30						Total[1]	Total
		2007	2008	2009	2010	2011	2012	2008-2012	2013-2017
Water System	Water Supply	$47.5	$28.3	$20.6	$23.2	$29.0	$46.9	$148.0	$119.3
	Water Distribution	$85.9	$66.7	$55.4	$49.0	$39.3	$25.9	$236.2	$215.0
	WTP Capacity Increase	$5.5	$8.7	$7.2	$6.3	$1.9	$0.8	$24.9	$63.3
	WTP Improvements	$37.2	$46.9	$30.9	$18.5	$24.3	$31.9	$152.5	$165.5
	WTP New	$36.7	$70.9	$41.0	$23.7	$15.4	$7.7	$158.7	$56.7
	Water Pump Stations	$0.7	$1.5	$2.6	$2.2	$0.7	$0.6	$7.6	$4.8
	Water Treatment Plant STS	$0.3	$0.4	$0.4	$0.1	$0.4	$0.7	$2.0	$6.8
	SUBTOTAL[1]	$213.8	$223.5	$158.0	$122.9	$111.0	$114.5	$729.9	$631.3
Wastewater System	Wastewater Collection	$50.5	$74.0	$86.3	$94.3	$55.9	$34.9	$345.5	$414.6
	WWTP Capacity Increase	$46.2	$52.4	$49.5	$41.2	$19.1	$18.1	$180.4	$266.0
	WWTP Improvements	$7.1	$22.2	$27.9	$19.0	$14.4	$9.4	$92.9	$42.9
	WWTP New	$4.6	$1.8	$0.1	$0.0	$0.0	$2.6	$4.5	$70.9
	Wastewater Pump Stations	$11.8	$14.8	$12.9	$14.4	$9.8	$1.9	$53.9	$5.0
	SUBTOTAL[1]	$120.2	$165.3	$176.7	$169.0	$99.3	$66.9	$677.2	$799.4
Preventive Maintenance	Water & Wastewater	$1.1	$31.2	$37.8	$27.0	$10.6	$0.6	$107.2	$0.0
Planning	Water & Wastewater	$0.3	$4.8	$0.6	$0.0	$0.0	$0.0	$5.4	$0.0
Renovation and Replacement	Water & Wastewater	$82.9	$42.5	$85.9	$65.2	$63.2	$63.6	$320.3	$355.8
Meters	Water Meters	$12.0	$2.4	$7.8	$8.8	$9.0	$11.4	$39.4	$94.7
Buildings	Buildings	$1.6	$3.7	$3.5	$4.7	$3.4	$5.6	$21.0	$23.0
Fleet	Fleet	$0.2	$3.3	$5.1	$5.5	$5.6	$7.3	$26.9	$63.1
PAP Projects	Water & Wastewater	$33.8	$5.3	$8.8	$1.4	$0.0	$0.0	$15.5	$0.0
Technology	Water & Wastewater	$8.9	$7.5	$5.8	$10.5	$12.8	$4.5	$41.1	$0.9
	SUBTOTAL[1]	$140.7	$100.8	$155.3	$123.0	$104.7	$92.9	$576.7	$537.6
TOTAL[1]		$474.7	$489.6	$490.0	$415.0	$314.9	$274.3	$1,983.9	$1,968.3

[1] Numbers may not add due to rounding.

6.2.3.1. Water System Projects

The water system projects include projects to improve compliance, new WTPs, new reservoirs and upgrades to water distribution systems. Total capital expenditures in water system projects for FY2008-2012 are estimated at $730M, of which approximately $443M is allocated for projects in the mandatory classification. Figure 6-3 shows the FY2008-2012 CIP expenditures for water system projects, alongside the FY2007 expenditures, and the percentage of the total capital expenditures each project type represents with respect to each period.

Figure 6-3: Water System Capital Expenditures by Project Type

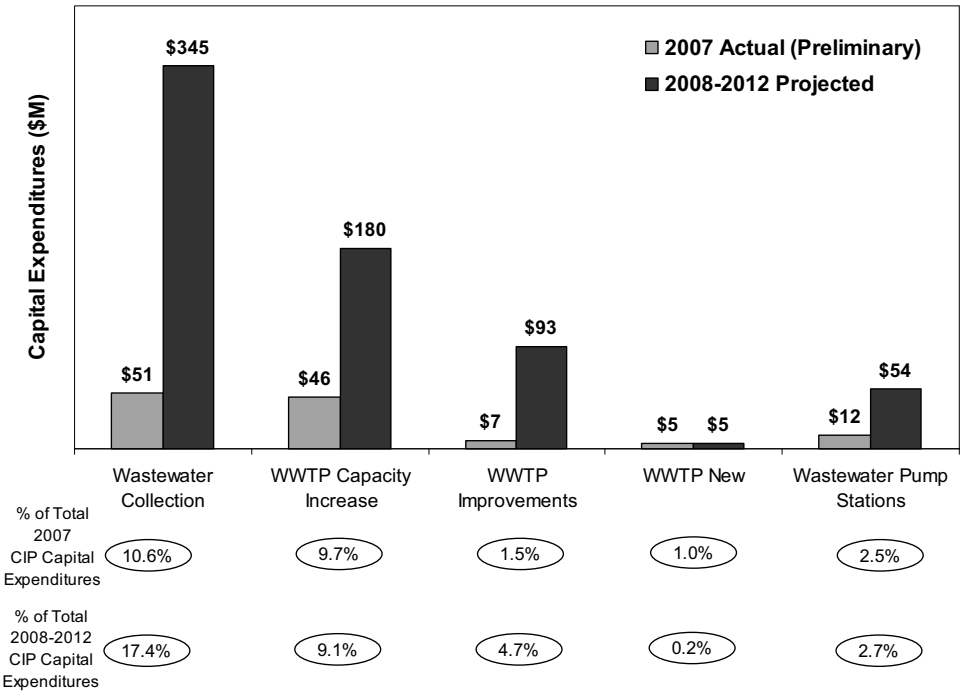


6.2.3.2. Wastewater System Projects

The wastewater system projects include projects to improve compliance, new WWTPs, and upgrades to wastewater collection systems. Total capital expenditures in wastewater system projects in FY2008-2012 are estimated at $677M, of which approximately $429M is allocated for projects in the mandatory classification. Figure 6-4 shows the FY2008-2012 capital expenditures for wastewater system projects, alongside the FY2007

expenditures, and the percentage of the total capital expenditures each project type represents with respect to each period.

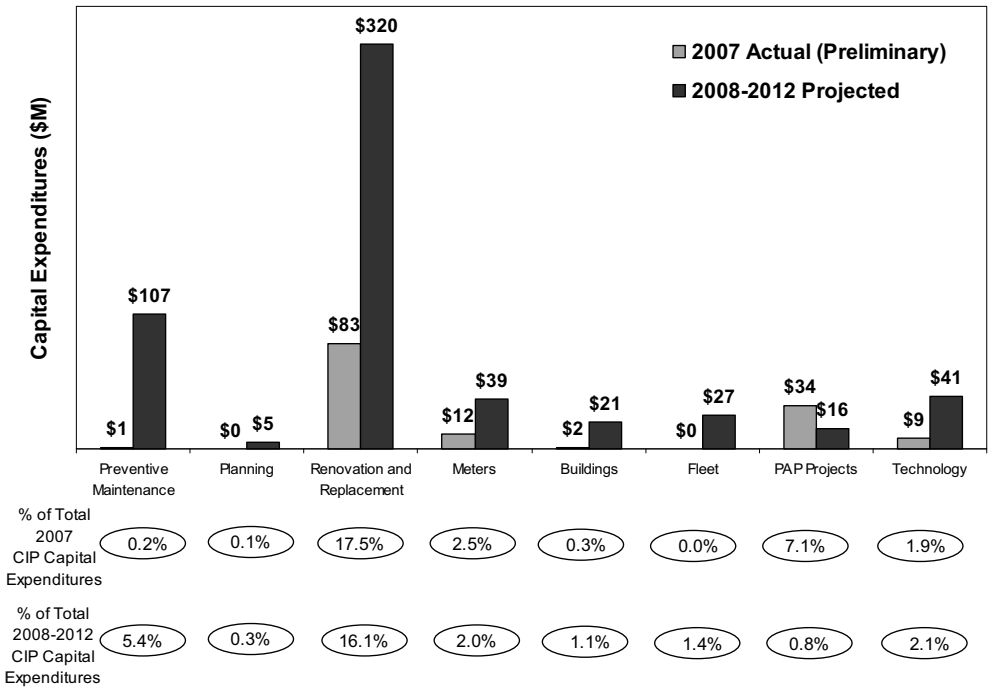
Figure 6-4: Wastewater System Capital Expenditures by Project Type



6.2.3.3. Other Projects: Operational, Planning, Renovation and Technology

Total capital expenditures for all other capital projects are estimated at $577M for FY2008-2012. These projects address preventive maintenance, planning, renovation and replacement, meter replacements, office and building improvements, fleet upgrades, PAP projects, and technology improvements. PAP projects were developed as part of a PRASA initiative that was developed prior to 2004. The PAP projects investments included in the FY2007-2012 CIP are the remnants of that initiative. Figure 6-5 shows the FY2008-2012 projected capital expenditures for the above mentioned project categories, and the percentage of the total capital expenditures each group represents, as well as expenditures for FY2007. Preventive maintenance projects are categorized as mandatory-driven, with an estimated FY2008-2012 capital expenditure of $107M. Also, within the renewal and replacement projects, although not formally categorized as mandatory, there are projects that are required by Consent Decrees.

Figure 6-5: Other Projects Capital Expenditures by Project Type



6.2.4. CIP Programming: FY2013-2017 and Beyond

Of the total 596 projects included in the CIP, there are 105 projects programmed for development and implementation between FY2013 and FY2017. PRASA estimates capital expenditures for this period will be $1.97B. Mandatory-driven projects account for $591M of these capital expenditures. Beyond FY2017, PRASA currently has an additional 46 projects programmed for development and implementation on or after 2018, of which a number are mandatory.

6.3. Comparison of CIP with Consent Decrees

The CIP projects were compared with existing Consent Decrees that PRASA has entered into with regulating agencies in order to determine the adequacy of the identified projects in the CIP with the requirements of said decrees. These are:

1. PRASA II: 1995 Consent Decree, United States v. PRASA and Commonwealth of Puerto Rico, Civil Action No. 92-1511 (SEC) – Construction of eight STSs and compliance actions on potable water treatment facilities.

2. PRASA III: 2000 Consent Decree, United States v. PRASA, et al., Civil Action No. 00-2554 – Addresses alleged violations of the Clean Water Act (CWA) and the Safe Drinking Water Act (SDWA).
3. PRASA IV: 2003 Consent Decree, United States v. PRASA, Commonwealth of Puerto Rico, and Compañia de Aguas de Puerto Rico, Inc., Civil Action No. 01-1709 (JAF) – Addresses violations to the Section 301 and 402 of the CWA and regulations and PRASA's NPDES permits with regard to certain of PRASA's wastewater pump stations
4. PRASA V: 2006 Consent Decree, United States v. PRASA and Commonwealth of Puerto Rico, Civil Action No. 06-1624 (SEC) – Addresses violations to the Section 301 and 402 of the CWA and regulations promulgated there under, and PRASA's NPDES permits with regard to PRASA's WWTPs.
5. Puerto Rico Department of Health 2007 Consent Decree Civil Action KPE 2006-0858 (currently in the process negotiations between the United States Environmental Protection Agency, Puerto Rico Department of Health, and PRASA) – Addresses non-compliance and alleged violations with the Puerto Rico Potable Water Purity Protection Law, as amended ("Ley Para Proteger la Pureza de las Aguas Potables de Puerto Rico, Ley Núm. 5 de 21 de Julio de 1977, según enmendada), the SDWA and applicable regulations, and the General Environmental Health Regulation (Reglamento General de Salud Ambiental, Reglamento Núm. 6090 de 4 de febrero de 2000).

PRASA is required to submit compliance reports for each of these Consent Decrees. Within the following sections is a further description of the regulatory enforcement actions, along with an analysis of the same. Such analysis includes compliance status and CIP adequacy in addressing compliance with the Consent Decrees.

6.3.1. PRASA II: 1995 Consent Decree, Civil Action No. 92-1511 (SEC)

On July 30, 2007 PRASA submitted to the USEPA the Quarterly Compliance Report No. 44, covering the quarter from April 1 to June 30, 2007. Included in this report was the most recent status of compliance with the requirements of PRASA II. A summary of the requirements and status is included in Table 6-4.

Although the STSs required by PRASA II have been constructed, the STSs are not operating in compliance with their NPDES permit limits. Therefore, size and treatment process assessments should be made at the eight STSs that were constructed in order to determine the cause of the violations of NPDES final effluent limits and develop corrective measures, or determine the need for additional capital improvements to bring the STSs into compliance.

PRASA's Compliance Department attributes these non-compliance occurrences to NPDES permit limits that are too stringent and inappropriate sampling protocols. PRASA

is planning to negotiate changes to permit limits and sampling protocols with the USEPA. Also, PRASA is in the process of developing and negotiating with USEPA a new Consent Decree to address non-compliance with NPDES discharges of STSs in WTPs. This new Consent Decree will, in turn, close PRASA II and PRASA III Consent Decrees, consolidating all STS compliance projects and simplifying both PRASA's management and regulatory agency monitoring. PRASA estimates the Consent Decree will be finalized by the end of FY2009.

Seven of the eight WTPs addressed in PRASA II have additional planned capital improvements. Below is a summary of PRASA's current capital improvements plans for these facilities:

- 3 have CIP projects that address additional STS improvements.
- 3 have CIP projects in the planning stage pending final scope definitions.
- 1 does not have an identified project in the CIP.

As part of the upcoming STS Consent Decree with USEPA, PRASA and USEPA personnel are inspecting each WTP STS facility in order to identify the need for remedial actions and additional capital improvements. Inspections are scheduled for completion in November 2007. It is reasonable to assume that these eight STS will be addressed in the new Consent Decree and will require some combination of additional capital improvements and operational changes to bring them into compliance. This may result in capital expenditures not currently programmed in the CIP.

Table 6-4.
PRASA II Requirements and Compliance Progress Status

Requirement	Requirement Reference	Status
1. Construct STSs in eight identified WTPs: Aguas Buenas, Lajas, Ponce Nueva, Enrique Ortega (La Plata), Sergio Cuevas, Guaynabo (Los Filtros), El Yunque, and Miradero.	Section V, Paragraph 8 and Attachment A of PRASA II	All eight STSs projects were completed.
2. Submit for approval to the USEPA the SOPs for the STSs of the eight plants abovementioned, to be reviewed, commented and approved by the USEPA.	Section VII, Paragraph 10 of PRASA II	Ponce Nueva WTP SOP was approved by the USEPA; other seven SOPs have been submitted by PRASA and are awaiting approval by the USEPA.
3. Comply with the interim effluent limitations established for Sergio Cuevas, Guaynabo (Los Filtros), El Yunque, and Miradero WTPs upon entry of PRASA II and continuing up to the compliance dates for each facility.	Section VI and Attachment B of PRASA II	Since April 1998, none of the facilities included in PRASA II are subject to interim limitations.

Requirement	Requirement Reference	Status
4. Comply with the NPDES permit effluent limitations for the Aguas Buenas, Lajas, Ponce Nueva, Enrique Ortega (La Plata), Sergio Cuevas, Guaynabo (Los Filtros), El Yunque, and Miradero WTPs upon entry of PRASA II and after the established NPDES permit compliance date.	Attachment A of PRASA II	Most of the eight STSs have chronic exceedances of their final effluent NPDES limits. Each STS had at least two exceedances between Dec 2006 and May 2007, with a total of 558 for the eight STSs over this 6-month period.

6.3.2. PRASA III: 2000 Consent Decree, Civil Action No. 00-2554

On July 30, 2007 PRASA submitted to the USEPA the Quarterly Compliance Report No. 23, covering the quarter from April 1 to June 30, 2007. A summary of the requirements and status is included in Table 6-5.

Although 22 of the 23 STSs required by PRASA III have been constructed, most (21) of the STSs are not operating in compliance with their NPDES permit limits. Therefore, size and treatment process assessments may be required at these 21 STSs in order to determine the cause of the violations of NPDES final effluent limits and develop corrective measures to bring the STSs into compliance.

Some of the 23 WTPs addressed in PRASA III have additional planned capital improvements. Below is a summary of PRASA's current capital improvements plans for these facilities:

- 4 are scheduled for decommissioning.
- 5 have CIP projects identified for WTP or additional STS improvements.
- 5 have CIP projects in the planning stage pending final scope definitions.
- 1 is operating in compliance with no identified projects in the CIP.
- 8 are not in compliance and have no identified projects in the CIP.

As mentioned in Section 6.3.1, PRASA is in the process of developing and negotiating with USEPA a new Consent Decree to address non-compliance with NPDES discharges of STSs at WTPs. PRASA estimates the new Consent Decree, which will include remedial actions and necessary capital improvements, will be finalized by the end of FY2009. This new Consent Decree will close PRASA II and PRASA III, consolidating all STS-related projects and remedial actions. It is reasonable to assume that the STSs with compliance problems will be addressed in the new Consent Decree and will require some combination of additional capital improvements and operational changes to bring them into compliance. This may result in capital expenditures not currently programmed in the CIP.

Table 6-5.
PRASA III Requirements and Compliance Progress Status

Requirement	Requirement Reference	Status
1. Construct and operate STSs in 23 identified WTPs: Apeadero.	Section V, Paragraph 8	22 of the 23 STSs construction projects were completed. 23rd STS will not be constructed given Fajardo WTP will be eliminated.
2. Construct and operate water treatment facilities for seven PRASA Public Water Systems (PWS) in order to achieve compliance with the Surface Water Treatment Rule (SWTR) of the SDWA: Jaguas Ceiba.	Section V, Paragraph 14	Jaguas Ceiba, Rucio, and Jiménez were removed from PRASA III; all WTP facilities for PRASA PWSs were completed on September 2007
3. Construct groundwater well systems and connect the PWS to the groundwater well systems in lieu of using unfiltered surface water resources for the following PRASA PWS: Quebrada Honda.	Section V, Paragraph 15	All three projects were completed by December 31, 2001.
4. Construct connections and connect the following PRASA PWS to the filtration plants or another PWS: Algarrobo.	Section V, Paragraph 16	Four projects were completed; the other three are under construction and scheduled for completion between 2007 and 2009.
5. Construct facilities needed to achieve compliance with the residual chlorine NPDES permit effluent limitations at 20 of the 23 NPDES WTPs: Apeadero, Ceiba Sur, Coamo, Culebras, Guayabota, Jagua Pasto, Juncos, La Julita, La Máquina, Matuyas, Monte del Estado, Morovis Sur, Orocovis, Ramey, Roncador, Sabana Grande, San Lorenzo, San Salvador, Vega Baja, and Yabucoa.	Section V, Paragraph 13c-d	All 20 projects were completed.
6. Conduct monthly operation and maintenance inspection reports.	Section VII, Paragraph 20	Inspection Reports are submitted quarterly as required.
7. Comply with the interim NPDES measures as established in PRASA III for the following systems: Algarrobo, Palomas, Quebrada Honda, Quebrada Arenas, Maricao, Río Prieto, Marín Alto, Espino (Las Marías), Bucarabones-Maricao, Pasto Seco, Jiménez, Morovis, and La Josefa; comply with interim measures established for the Fajardo WTP; and submit summaries of residual chlorine, turbidity, and coliform bacteria monitoring results for SWSs that have interim measure requirements.	Section VI, Paragraph 18 and 19	Interim Measures Compliance for Rio Prieto, Espino, Bucarabones, La Josefa, Quebrada Honda, Quebrada Arenas are assessed in the Quarterly Reports. Corresponding Penalties for Fajardo non-compliance are paid quarterly.
8. Pay stipulated penalties for any failure to provide filtered water that meets the requirements of 40 CFR § 141.73 for turbidity to the respective PRASA PWS including: Jaguas Ceiba, Bucarabones-Maricao, Pasto Seco, Rucio, Zarzal, Jiménez, and Morovis.	Section VIII, Paragraph 22 Section a	4 systems report penalties (La Josefa, Bucarabones, Espino and Rio Pietro

Requirement	Requirement Reference	Status
9.Comply with all the monitoring requirements in the NPDES permits for 22 WTP facilities (Culebras WTP is awaiting NPDES permit)	Section V, Paragraph 8	Summary of compliance and self assessment penalties for the 22 facilities is submitted quarterly.
10. Complete two Supplemental Environmental Projects (SEP) to connect two non-PRASA systems to the PRASA Roncador drinking water distribution system: Communal Aqueducts of La Estancita and Saltos Caguana systems.	Section IX, Paragraph 29	Both SEP projects design revisions are underway, including assessment of project viability and Community acceptance; a revised Engineering Report will be submitted to the USEPA. Meetings have been held with the Community due to an opposition from the residents to connect to PRASA.

6.3.3. PRASA IV: 2003 Consent Decree, Civil Action No. 01-1709 (JAF)

On June 15, 2007, PRASA submitted to the USEPA the Triannual Compliance Report No. 12, covering the period from January 1 to April 31, 2007. A summary of the requirements and status is included in Table 6-6. Under PRASA IV, 111 wastewater pump stations were selected by PRASA and approved by the USEPA to undergo rehabilitation improvements. As of the date of the report, all 111 pump station projects were completed.

Additional assessments of the wastewater pump stations may be required in order to determine the cause of the unanticipated bypasses associated with the pump stations in order to reduce the frequency of violations for which PRASA self-assessed penalties. Additional capital improvements may be required in order to further reduce the frequency of bypasses at these pump stations.

Table 6-6.
PRASA IV Requirements and Compliance Progress Status

Requirement	Requirement Reference	Status
1. Payment of a civil penalty in the amount of one million dollars ($1,000,000) to the United States.	Section V, Paragraph 8	Civil penalty was paid on July 22, 2003.

Requirement	Requirement Reference	Status
2. Submit a detailed list of remedial actions to be performed at the agreed upon pump stations (referred to as Group A in PRASA IV) and a proposed schedule for completion to the USEPA for approval.	Section VI, Paragraph 11	On April 29, 2004 a final list of the Group A pump stations, comprised of 111 wastewater pump stations, was approved by the USEPA and remedial actions were to be completed in three terms ending on January 2005, November 2005 and November 2006; an extension was requested by PRASA as a result of the strike by its major union, pushing back the deadlines to May 2005, March 2006 and March 2007 respectively; all 111 wastewater pump station remedial action projects have been completed.
3. Submit Operation and Maintenance Plan (OMP) to the USEPA for approval.	Section VII, Paragraph 12	OMP was submitted in 2003 to the USEPA, which in turn evaluated it and submitted comments to PRASA; further modifications were discussed and approved by the USEPA in subsequent meetings; OMP is currently being implemented in a phased approach.
4. Submit to EPA for approval a Spill Response and Cleanup Plan (SRCP) that specifies actions to be taken by PRASA for unanticipated bypasses from any pump station facility.	Section VIII, Paragraph 17	The SRCP manual was submitted to the USEPA, which in turn evaluated it and submitted comments to PRASA; the SRCP was later approved, once it was translated to English.
5. Develop, fund, and implement project to improve drinking water quality of selected non-PRASA systems that fail to comply with applicable local and federal regulations for public drinking water supplies as a Supplemental Environmental Project (SEP).	Section XIX and Appendix E	PRASA selected the El Chichón, Villa Blanca and Lajitas communities for implementation of the SEP. A scope of work was submitted on May 11, 2007 for evaluation and comments.

6.3.4. PRASA V: 2006 Consent Decree, Civil Action No. 06-1624 (SEC)

On June 26, 2007, PRASA submitted to the USEPA the Quarterly Progress Report No. 2, covering the period from February 1, 2007 through May 1, 2007. A summary of the requirements and status is included in Table 6-7. Remedial measures were identified for selected facilities, and implementation of these measures was divided in short and mid-term measures, and CIP long term projects. The long term projects, in turn, are divided into three terms varying by completion dates. Table 6-8 includes a break down of the projects by term and current status of remedial measures and CIP projects.

Table 6-7.
PRASA V Requirements and Compliance Progress Status

Requirement	Requirement Reference	Status
1. Progress report on probation and plea agreement special conditions and compliance with terms and conditions of PRASA V.	Civil Action	At present time, PRASA is in compliance with all terms and conditions of PRASA V.
2. Implementation of system-wide remedial measures at WWTPs owned and/or operated by PRASA included in PRASA V appendices A, C, and D.	Section V, and Appendix A, C, and D	See Table 6-8 of this report: PRASA V Remedial Measures and CIP Project Status Table.
3. Comply with the respective interim limitations and monitoring asset forth for each of the WWTPs in Appendix E of PRASA V, as specified for that parameter in the respective NPDES permit for each facility, and submit results of each sample on the facility's Discharge Monitoring Report (DMR).	Section VI, Paragraph 11 and Appendix E	Effective June 1, 2006, the interim discharge limits are active in all PRASA WWTPs. PRASA is complying with the DMRs submittal of each of the facilities included in Appendix E, and exceedances are being notified to the USEPA.
4. Develop and implement an Integrate Preventive Maintenance Program (IPMP).	Section VII	Progress meeting was held with the USEPA and status of the IPMP was presented.
5. Submit for evaluation and approval, no later than October 1, 2006, a Spill Response and Cleanup Plan (SRCP) that specifies actions to be taken by PRASA for SSOs from all facilities owned and/or operated by PRASA.	Section VIII	The SRCP was prepared and submitted to the USEPA on September 21, 2006 for evaluation and approval. Comments were received from the USEPA. The revised document will be re-submitted. Activities from the initial SRCP are being implemented.
6. Develop and implement a Sanitary Sewer System Evaluation Plan (SSEP1) and a Sanitary Sewer System Repair Plan (SSSRP1) for the Aguadilla, Bayamon, Isabela, Juncos, La Parguera, San Sebastian New, and Unibon Morovis facilities.	Section IX and Appendix H	A progress report was submitted for the implementation of these plans.
7. Monitoring and management of wastewater treatment capacities.	Section X	No changes to PRASA's sewer connections policy are proposed. Monthly average permitted flows of the facilities owned and/or operated by PRASA were submitted. PRASA continues the Sewer Connection Prohibition for Unibon-Morovis WWTP. On April 20, 2007, PRASA requested from USEPA the approval for the termination of the Camuy-Hatillo Sewer Ban since the plant's rehabilitation project was in its final phase and effluent quality had significantly improved.

Requirement	Requirement Reference	Status
8. PRASA shall pay $1,000,000 within 30 days of entry of the Consent Decree to the United States as a civil penalty.	Section XII, Paragraph 39	The civil penalty was paid on February 6, 2007.
9. PRASA shall pay to the United States stipulated penalties for the violations listed in PRASA V for each wastewater treatment facility owned and/or operated by PRASA.	Section XIII	No stipulated penalty was assessed for failing to complete specified works for each facility. Applicable penalties and reports were assessed and submitted for exceedances to WWTP final and interim NPDES discharge limits and "Code 8" reported parameters.
10. Eligibility of removal, and reincorporation of facilities from stipulated penalties provisions in PRASA V.	Section XIV and XV	No facilities were removed or reincorporated.
11. Develop, fund, and implement a Supplemental Environmental Project (SEP).	Section 84(a)	An Escrow Account and deposits have been made as set forth in PRASA V. The Naranjito La Plata Community was selected by PRASA and approved by the USEPA on December 15, 2006. The scope of work (SOW) of the project was submitted to USEPA for evaluation and approval on June 2007, and was approved by USEPA on September 7, 2007.

Table 6-8.
PRASA V Remedial Measures and CIP Project Status

Term	Total Projects	Status
Short (6 months)*	32	All 32 remedial measures have been completed.
Mid (12-24 months)*	49	27 measures have been completed and USEPA granted an extension for another one. The remaining measures are in progress.
CIP Long Term 1 ending June 1, 2008 (3) June 1, 2010 (4) June 1, 2011 (13)	20	The 20 projects are divided in the following progress status: Completed - 4 projects Construction - 10 projects Bidding - 4 projects Design - 2 projects
CIP Long Term 2 ending June 1, 2016	24	9 projects are in the design phase and 1 project is in construction. Remaining projects are scheduled to commence planning activities by FY2011 and FY2012.
CIP Long Term 3 ending June 1, 2021	19	Project development initiated for 1 project (Ponde de León Combined Sewer Separation project). 4 projects are in design. Remaining projects are scheduled to commence planning activities beyond FY2014.

*Refers to implementation completion date measured from date of PRASA and USEPA entering into agreement in PRASA V.

The projects included in the CIP were reviewed in order to determine how adequately the CIP addresses PRASA V requirements. In summary:

- Short-Term measures have all been completed (see Table 6-8).
- Mid-Term measures are in progress as indicated in Table 6-8. All deadlines have been met to date.
- All 20 projects included in Long-Term 1 are on schedule to meet compliance with PRASA V requirements and currently have projects included in the five-year CIP programming. Four projects have been completed to date, ahead of schedule.
- All 24 Long-Term 2 projects have identified CIP projects within the 10 year CIP. However, not all project scopes have been finalized given that planning efforts for some of these projects are scheduled to commence between FY2011 and FY2013. This is reasonable since PRASA V requires they are placed in operation by June 1, 2016, which allows for enough time to complete the projects. PRASA classified these projects in the Mandatory (USEPA) category; therefore, it is sensible to assume that the projects scopes will be developed to comply with PRASA V.
- All 19 Long-Term 3 projects have CIP projects within the 10 year CIP program. However, not all project scopes have been finalized given that planning efforts for some of these projects are scheduled to commence between FY2014 and FY2018. This is reasonable since PRASA V requires they are placed in operation by June 1, 2021, which allows for enough time to complete the project. PRASA classified these projects in the Mandatory (USEPA) category; therefore it is sensible to assume that the projects scopes will be developed to comply with PRASA V.

Upon review of this information, the CIP adequately addresses the requirements of PRASA V. PRASA has indicated that project scopes will be defined to address PRASA V requirements, thus bringing these facilities into compliance. PRASA's compliance with the USEPA Consent Decree requirements during FY2007 and improved communication with the USEPA, re-affirm PRASA's commitment to its transformation and objectives. PRASA has set aggressive project completion schedules in order to meet compliance. Projects shall be advanced or postponed as funding is identified. It is PRASA's intention to implement all mandatory projects in a fast track basis in order to reduce violations, improve operation and reliability of the system, and comply with the Consent Decree.

6.3.5. Puerto Rico Department of Health 2007 Consent Decree Civil Action KPE 2006-0858

In 2007, PRASA and the Commonwealth of Puerto Rico (Puerto Rico Department of Health, or PRDOH) entered into the Consent Decree Civil Action KPE 2006-0858 (PRDOH Decree), which addresses a total of 132 potable water systems (including 112 WTPs).

PRASA must comply with the following requirements, in accordance with the PRDOH Decree:

- Develop and implement an operational and preventive maintenance program, currently in the development phase, which program shall include continuous monitoring programs for water systems. The continuous monitoring program is to be implemented in three phases for the systems listed in the PRDOH Decree.
- Comply with stipulated interim mitigation measurements and protocols (i.e. SOPs) for non-compliance systems, as well as preventive measures for intermittent non-compliance systems, for bacteriology, turbidity, nitrates, DBPs, and chemical contaminants.
- Provide and require operator, and supervisors, certification and training.
- Transaction penalty payment of $1,000,000.
- Penalty payments quarterly for Non-compliance.
- Comply with short, mid, and long term remedial measures within the stipulated completion dates, for the water systems addressed.

As of December 2007, the Decree had been signed by PRASA and PRDOH; however, PRASA is currently incorporating USEPA comments on the Decree and is planning to resubmit the Decree to PRDOH after the comments are incorporated. It is expected that by the end of FY2008 the Decree will be finalized and re-ratified by the Court, including modifications negotiated between the three agencies.

Short-Term and Mid-Term Measures

540 short-term remedial actions were identified to be completed within 12 months of PRASA and PRDOH entering into the PRDOH Decree. 159 mid-term remedial actions were identified, to be started no later than 13 months of entering into the PRDOH Decree and completed no later than 36 months. Most of the short-term actions are operational and/or compliance related, and includes monitoring and studies. The facilities that require capital improvement projects in the short and mid-terms, are not addressed as individual CIP projects, but are to be addressed under PRASA's renewal and replacement Program, managed by each Region, for which budgeting is included in the CIP.

Long-Term Measures

The long-term remedial actions are divided in three terms to be respectively completed in the scheduled time frames after entering the PRDOH Decree:

1. Term 1: 5 years or no later than December 15, 2011

2. Term 2: 10 years or no later than December 15, 2016

3. Term 3: 15 years or no later than December 15, 2021

Term 1 Projects: There are 85 projects, of which 34 require capital improvements, as per the PRDOH Decree project scope description; the other 51 projects require operational and maintenance programs, equipment installation (i.e., valves, meters), evaluations, studies, etc. Five of the 34 projects that require capital improvements will be directly managed by the respective Regions and are to be funded by the renewal and replacement budget. The remaining 29 projects have identified CIP projects with scopes that comply with the requirements stipulated in the PRDOH Decree.

Term 2 Projects: There are 65 projects, of which 18 require capital improvements, as per the PRDOH Decree project scope description; the other 47 projects require operational and maintenance programs, equipment installation (i.e., valves, meters), evaluations, studies, etc. All 18 projects have identified CIP projects that cover the requirements stipulated in the PRDOH Decree.

Term 3 Projects: There are 60 projects, of which 14 require capital improvements, as per the PRDOH Decree project scope description; the other 46 projects require operational and maintenance programs, equipment installation (i.e., valves, meters), evaluations, studies, etc. All 14 projects have identified CIP projects that cover the requirements stipulated in the PRDOH Decree.

Upon review of this information, the CIP adequately addresses the requirements of the PRDOH Decree. PRASA has set aggressive project completion schedules in order to meet compliance. Projects will be advanced or postponed as funding is identified. PRASA has indicate its intention to implement all mandatory projects in a fast track basis in order to reduce violations, improve operation and reliability of the system, and comply with the PRDOH Decree.

6.4. Future Regulations

The CIP was reviewed for adequacy to comply with future regulations that could impact compliance limits for PRASA's water and wastewater facilities. Although plant-specific changes to effluent permit limits may change from time to time, due to site-specific issues, there are no identified future regulations anticipated to require additional capital improvements to the WWTPs beyond those future effluent limits identified in the consent decrees. Anticipated future regulations for PWSs at the time of this report writing include:

- Stage 2 Disinfectants and Disinfection Byproducts Rule (Stage 2 DBPR),
- Long Term 2 Enhanced Surface Water Treatment Rule (LT2 ESWTR), and
- Groundwater Rule (GWR)

- Future contaminants of concern based on current scientific knowledge.

Likely concerns for PRASA pertaining to each regulation are discussed in the following subsections.

A final determination of the CIP adequacy for addressing compliance problems at PWSs cannot be made at this time based on the available compliance information at the time of the preparation of this report. However, there are 200 projects programmed over the next ten years that will address compliance issues for PWSs, including WTP improvements, and WWTPs, of which 108 will address water system compliance issues, including WTPs. Of these, 63 are programmed for implementation in the five year CIP ending FY2011. It is expected that PRASA, along with its PMC's and other external consultants, will address any future, impending regulations when defining project scopes.

PWSs that are complying with current regulations may or may not be able to comply with future regulations. In general, PWSs will require both continual preventive and corrective maintenance of existing treatment facilities in order to comply with all regulations, both current and future. In all likelihood, the current programming and expected investments will be impacted by the effects of future regulations.

6.4.1. Stage 2 Disinfection and Disinfection Byproducts Rule

In January 2006, USEPA published the final Stage 2 DBP Rule. Stage 2 DBPR is one part of the Stage 2 Microbial and Disinfection Byproducts Rules (M-DBP). The Stage 2 M-DBP Rules are interrelated regulations that address risk from microbial pathogens and DBPs. The LT2 ESWTR, described later in this section, addresses microbial issues. Stage 2 M-DBP Rules are the final phases in the M-DBP rulemaking strategy affirmed by Congress as part of the 1996 Amendments to the SDWA.

The goal of the rule is to reduce cancer and reproductive and developmental health risks from DBPs in drinking water. The rule strengthens public health protection by strengthening total trihalomethane (TTHM) and haloacetic acid (HAA) compliance monitoring. The rule applies to all community water systems (CWSs) and nontransient water systems.

The largest difference between Stage 2 and the Stage 1 DBPR is that Stage 2 DBPR compliance will be determined by locational running annual averages (LRAA) for each sample point in the distribution system, rather than a running annual average (RAA) of all sample points for the whole system. To determine compliance, new distribution system monitoring points must be determined through approved sampling programs, or waivers. Sampling for Stage 2 begins on April 1, 2012 for large systems (>100,000 customers) through October 1, 2014 for very small systems (<10,000 customers).

6.4.1.1. Likely Effects of Stage 2 DBPR on PRASA

Compliance data from records provided by PRASA for 2006 show that 34.1% of PWSs have DBPs greater than the 64 ppb for TTHMs or 48 ppb for HAAs. While the maximum contaminant levels (MCLs) for TTHMs and HAAs are 80 ppb and 60 ppb respectively, 64 ppb and 48 ppb were used because they represent 80% of the MCL. As a general rule of thumb, if a PWS is within 80% of the MCL for DBPs, it is in danger of violating Stage 1 DBPR and should be considered as a likely violator of Stage 2 DBPR. This data suggests that 34% of the PWSs are likely to be affected by Stage 2 DBPR. The following are the likely effects of the Stage 2 DBPR on some PRASA drinking water systems:

- Changes in the management of the distribution system to minimize residence times, hence reduce the formation of DBPs.
- Movement of the point(s) of chlorine addition without compromising overall disinfection efficacy (additional disinfectants may be needed)
- Optimizing organics removal through the treatment process – through additional treatment or enhanced coagulation/softening measures
- Use of alternative disinfectants

It is important to note that these measures have varying degrees of costs. Some measures are not capital intensive, and the costs are mainly associated with administrative and operational changes, while others, such as new solids removal systems for sedimentation basins or expanded solids treatment systems for greater quantities of coagulants (to reduce organics), will require capital expenditures.

6.4.2. Long Term 2 Enhanced Surface Water Treatment Rule

The LT2 ESWTR was published in January 2006. The purpose of this rule is to improve public health protection through the control of microbial contaminants by focusing on systems with higher *Cryptosporidium* risk. In general, the rule requires all PWSs that use surface water or ground water under the direct influence of surface water to monitor their source water, calculate an average *Cryptosporidium* concentration, and use that data to determine if and the extent their source is vulnerable to *Cryptosporidium* contamination. Based on the results of the monitoring, the Rule may require systems to install additional treatment to specifically address *Cryptosporidium* occurrence.

A major provision of the rule requires that filtered and unfiltered systems conduct source water monitoring for *Cryptosporidium*. Filtered systems achieving 5.5 log (99.9993% removal) of treatment and unfiltered systems achieving at least 3 log (99.9% removal) of treatment for *Cryptosporidium* are not required to conduct source water monitoring. Systems that have previously collected *Cryptosporidium* monitoring data may be able to grandfather their historical data if they meet certain requirements.

Based on the results of the monitoring data, systems will be classified into one of four bins that will determine how much additional treatment will be required to provide the desired level of microbial protection. Depending on the bin assignment, systems will require either no additional treatment or up to 3 log (99.9% removal) additional *Cryptosporidium* removal. Treatment options will be selected from the "microbial toolbox" – a list of approved alternatives that provide assigned levels of Cryptosporidium inactivation credit.

Uncovered finished water reservoirs either must be covered or have their discharges treated to achieve inactivation and/or removal of at least 4-log for viruses, 3-log for Giardia, and 2-log for *Cryptosporidium*.

Compliance schedules are based on population served. Systems must comply with additional treatment requirements as follows:

- >100,000 customers by March 31, 2012.
- > 50,000 to 99,999 customers by September 30, 2012.
- > 10,000 to 49,999 customers by September 30, 2013.
- < 10,000 customers by September 30, 2014.

6.4.2.1. Likely Effects of LT2 ESWTR on PRASA

Efforts to prepare this report revealed that 36.4% of WTPs have experienced turbidity violations. Plants struggling to meet turbidity compliance will certainly continue to struggle under the more stringent LT2 requirements for *Cryptosporidium*. If any of the struggling plants have significant occurrences of *Cryptosporidium* (which must be determined by required monitoring), they will most likely require additional removal of pathogens and more stringent treatment. In all likelihood, plants struggling with turbidity removal will require capital projects to continue to meet more stringent regulations. Some PRASA projects that are currently under development or are being implemented include provisions to comply with this future regulation, including projects at Hatillo-Camuy, Patillas, and Toa Vaca WTPs. Moreover, PRASA has established policy for new WTPs to be designed for an effluent turbidity level of 0.1 NTU although the current regulatory limit is 0.3 NTU.

6.4.3. Ground Water Rule

The purpose of the GWR, published November 8, 2006, is to provide increased protection against microbial pathogens in PWSs that use ground water sources. All PWSs that serve ground water, including those that blend with surface water, must comply with the rule. The GWR includes the following requirements:

- Sanitary surveys are required for all ground water systems. The initial sanitary survey for each CWS must be conducted by December 31, 2012 and for non-community water systems by December 31, 2014. Surveys must be repeated depending on system size and treatment capabilities.
- Triggered Source Water Monitoring is required for systems that have total coliform-positive samples in the distribution system and do not treat to at least 4-log inactivation/removal of viruses prior to the first customer.

PRDOH can make exceptions to triggered source water monitoring if it determines the routine Total Coliform Rule sample contamination was caused by a deficiency in the distribution system.

- Source Water Assessment Monitoring may be required by PRDOH. Samples positive for fecal indicators will require public notification.
- Hydrogeologic Assessments may be conducted by PRDOH to determine if sources are sensitive to contamination. Systems are required to provide any existing information that may facilitate PRDOH's assessment.
- Corrective Action is required if a system has a significant deficiency, as identified by PRDOH, or detects a fecal indicator in source water samples.

Water systems must report the completion of the corrective action, failure to meet disinfection or treatment performance, and exceptions to triggered source water monitoring.

6.4.3.1. Likely Effects of the GWR on PRASA

The GWR has two primary requirements: completing sanitary surveys and triggered source water monitoring. Because systems will not be completing their own surveys, PRASA will need to work closely with PRDOH and provide it with all the necessary information to complete the sanitary surveys. The rule also requires source water monitoring. It is important to note that the rule gives PRDOH many enforcement options. Hence, PRASA and PRDOH can work together to determine how to implement the rule.

6.4.4. Future Contaminants of Concern

The Safe Water Drinking Act requires the USEPA to conduct research into the occurrence and health effects of new and emerging contaminants. The following identifies contaminants that may be regulated in the future:

- **Endocrine Disrupting Compounds.** A rapidly increasing number of man-made chemicals, or their breakdown products, are known to be capable of interfering with the human endocrine system. Such chemicals are called endocrine disrupting compounds (EDCs). Implicated chemicals include industrial chemicals such as PCBs, as well as a wide variety of pesticides, including herbicides, fungicides, nematocides, and insecticides. Potential health effects of exposure to EDCs include adverse

reproductive outcomes, birth defects, breast cancer, developmental disabilities, endometriosis, thyroid problems and testicular cancer.

- **Pharmaceuticals and Personal Care Products.** Pharmaceuticals and personal care products (PPCPs) refers to a very diverse collection of thousands of chemical substances, including prescription and over-the-counter drugs (e.g., aspirin and antibiotics), fragrances, cosmetics, sun-screen agents, diagnostic agents, nutraceuticals, biopharmaceuticals, and many others. The PPCP residues in treated wastewater effluent (or run off or directly discharged raw sewage) can then enter the environment. PPCPs are considered emerging contaminants because detection of the chemicals in the environment has occurred over the last 10 years.
- **NDMA.** N-nitrosodimethylamine (NDMA) occurrence in drinking water may result from industrial groundwater contamination (rocket fuel), from the chlorination of cationic polymers, from the use of ion exchange resins, and as a chloramination byproduct. NDMA has also been found in wastewater influent from industrial sources (carbamate users, etc.) and is formed during the chlorination of secondary effluent at WWTPs.
- **Chromium (VI).** Chromium (VI) may cause cancer in laboratory animals but the evidence of carcinogenicity via ingestion is not compelling. Total chromium (sum of Cr(III) and Cr(VI)) is regulated by USEPA with an MCL of 0.1 mg/L, but no specific limit has been set for Cr(VI). The National Toxicology Program has been conducting toxicity studies on Cr(VI) and this data will be used for future regulation development.
- **Perchlorate.** Perchlorate is both a naturally occurring and man-made chemical that originates in the environment from the solid salts of ammonium, potassium, or sodium perchlorate. Perchlorate has been used as a rocket fuel propellant and has been found in numerous drinking water sources. Perchlorate has an adverse effect on the thyroid gland and body metabolism and can persist for many decades under typical groundwater and surface water conditions because of its resistance to react with other available constituents.
- **Algal Toxins.** In the last decade, harmful algae and their toxins have continued to threaten public and natural resources health and to impact local economies. From a public health standpoint, four human illnesses are associated with toxic algal blooms and consumption of toxin-contaminated shellfish in the U.S.: paralytic, neurotoxic, amnesic, and diarrhetic shellfish poisoning.

6.4.4.1. Likely Effects of the Future Contaminants on PRASA

Based on available information, no determinations could be made to determine the likely impact on PRASA due to potential regulations from candidate future contaminants. Treatment for emerging contaminants varies greatly depending upon the nature of the contaminant. However, several of the above contaminants require advanced treatment

technologies to be used as effective measures for mitigation. Some of the possible technologies available are:

- Carbon – Granular Activated Carbon has been shown to be an effective barrier for naturally occurring organic matter in some cases as well as has adsorptive capacity to remove certain pharmaceuticals and endocrine disruptors.
- NF/RO – In order to remove the most persistent contaminants, high pressure filtration methods are necessary to mitigate contamination. This comes at a high cost to the public utility.
- UV – Ultraviolet radiation is being used throughout the industry to address concerns with DBP formation and cryptosporidium inactivation. Evidence suggests that UV radiation may play a role in helping to address some emerging contaminates as well.
- AOP – Advanced Oxidation Processes can be used with or without UV radiation to aggressively treat total organic carbon (TOC) and initial evidence suggests AOP may be used to treat some contaminates of concern.

6.5. Conclusions

PRASA's CIP addresses the general needs of the System and complies with PRASA's commitments with regulatory agencies. The CIP includes projects that cover a broad array of current and future needs, as identified by PRASA and as required by consent decrees. The CIP includes funding for renewal and replacement and a new preventive maintenance program, both essential to maintaining and preserving the utility assets.

During FY2007 and the first four months of FY 2008, PRASA has awarded over 92% of its projected bids. In addition, 53 projects entered the construction phase and 52 were completed and placed into operation.[17] PRASA's performance and metrics achievements under the new management organization demonstrate that PRASA, with assistance of its external consultants and PMCs, has the commitment and ability to effectively implement and manage its CIP.

PRASA's classification and prioritization process allows for an organized and systematic management of the CIP. Projects are not only classified by category, group and type, but are also ranked according to a prioritization score which allows PRASA to easily identify priority projects as the CIP evolves. By categorizing and prioritizing the projects in the CIP, PRASA is able to keep track of mandatory-driven projects versus the non-mandatory, and make adjustments as projects move from planning through start-up. Periodic revisions to PRASA's Master Plan also give PRASA the opportunity to validate the CIP and guide future changes to the CIP to meet PRASA's needs.

[17] Includes 25 projects that were managed by PRIFA.

PRASA will need to perform additional assessments and implement operational changes or additional capital improvements to bring non-compliant facilities, which include WTPs, WWTPs, STSs, amongst others, into compliance. Review of PRASA's CIP showed that all of the WTPs and WWTPs that were considered unacceptable in terms of compliance currently have CIP projects identified to either rehabilitate or close the facility, thus addressing existing compliance problems. Furthermore, PRASA's FY2007 record of compliance with PRASA V requirements and the noticeable transformation in communications with regulatory agencies (i.e. USEPA and PRDOH) further supports PRASA's ongoing commitment to bring its System into compliance.

PRASA is currently in the process of negotiating a new STS Consent Decree with USEPA that will address current compliance issues in WTPs. Sixteen (16) projects have been preliminarily included in the CIP to address STS improvements. CIP modifications will be required to adequately accommodate resulting STS needs.

The full impact of future regulations on the water treatment and supply system are not known at this time. In some cases, future regulations are expected to require minor process changes and in other cases major capital improvements, such as construction of new treatment processes. In general, the existing CIP does not include projects intended solely to address future regulations. However, PRASA is implementing some improvements projects with consideration for compliance with LT2 ESWTR. To further assist with compliance with future regulations, PRASA has established policy for new WTPs to be designed for an effluent turbidity level of 0.1 NTU although the current regulatory limit is 0.3 NTU. Presently, regulatory agencies and PRASA's PMCs actively participate in the project planning and design phases, providing support to PRASA in the project development process, overseeing compliance with Consent Decrees, and searching for innovative solutions to comply with current, and when applicable, future regulations. As the impact of future regulations becomes more defined, CIP modifications will be required to adequately accommodate resulting needs.

7. Financial Analysis

7.1. Introduction

In the preparation of this CER, MPPR/Malcolm Pirnie reviewed the PRASA-prepared financial forecast (the Forecast, Management's Base Case or Base Case) shown in Exhibit 1 (enclosed at the end of Section 7). A second financial forecast was also prepared by PRASA – Management's Alternate Case (Management's Alternate Case or Alternate Case) as shown in Exhibit 2. This second forecast is discussed at the end of Section 7 and presents a more fiscally conservative plan based on less favorable assumptions regarding various revenue enhancing and cost reducing initiatives. The discussion regarding Management's Alternate Case is restricted to those items that differ between the two forecasts. The majority of this section is devoted to a discussion of the Forecast – Management's Base Case.

Section 7 summarizes the findings of MPPR/Malcolm Pirnie's review and provides an assessment of the reasonableness of PRASA's assumptions in the preparation of the Forecast. The purpose of this review was to assess the sufficiency of the current and proposed rates to provide the revenues necessary to support the projected costs shown in Exhibit 1, including capital expenditures, management, operations and maintenance expenses, as well as debt service. Additionally, the Forecast illustrates the anticipated debt service coverage during the forecast period for the ten fiscal years from July 1, 2007 through June 30, 2017 (the forecast period).

Similar summaries and findings regarding Management's Alternate Case are found towards the end of this section to the extent such summaries and findings differ from the Forecast.

The Forecast represents PRASA's estimate of the most probable results of operations and debt service coverage for the forecast period. Thus, it reflects PRASA's judgment, based upon present circumstances, as to the most likely set of conditions and course of action.

MPPR/Malcolm Pirnie worked closely with PRASA to obtain the information necessary to support its conclusions regarding the Forecast. The following types of information, provided by PRASA, were included in our review:

- PRASA's revenue and expense projections and calculated net operating income and the preliminary debt service coverage ratios.
- Audited financial statements for FY2004, FY2005 and FY2006.

- Trial Balance statements for FY2007 and FY2008 (through the month of October 2007).
- Actual detailed expenses for FY2005 and FY2006 (audited), and FY2007 (unaudited) and budgeted expenses for FY2008.
- Debt service schedules for all currently outstanding and projected debt obligations from underwriters (preliminary).
- Draft 2008 Master Agreement of Trust.

The following presents a summary of the financial review and MPPR/Malcolm Pirnie's assessment of the reasonableness of the Forecast and its key underlying assumptions regarding water supply and demand, customer growth, O&M expenses and capital expenditures.

In reviewing historical operational and financial data, it is noted that FY2005 does not reflect a typical year for PRASA as a result of the following events:

- An extended 84-day strike by unionized workers
- A severe tropical storm
- Significant increases in oil-related supply costs such as electricity, fuel and lubricants

To the extent that these events affected the development of the Forecast, this is noted in the sections that follow.

7.2. Review of Billed Water and Sewer Volumes

PRASA provides water service to approximately 97% of the population of Puerto Rico, of which population 55% also receives sewer service. PRASA bills monthly for water and sewer service based on metered water consumption (a volumetric rate) and the size of the water service line (a base charge).

Table 7-1 presents a summary of historic population, accounts and billed water and sewer volumes. While water consumption has historically increased with the growth in population, a decrease in consumption did occur in FY2005 and FY2007. It is likely that these decreases were related to a series of events including a tropical storm and labor strike in FY2005 and a two-phase rate increase that was completed in FY2007. With regard to the rate increase, it is typical for customers to adjust their consumption in response to a rate increase, but that over time, consumption often returns to its pre-increase levels.

As of 2007, PRASA estimates that 62% of its water production is unaccounted for water. Section 4.9.1 of this report defines unaccounted for water and provides information on the specific programs being implemented by PRASA to address this issue. To the extent that these operational initiatives affect the Forecast, they are discussed in this section.

Billable volumes for sewer reflect 100% of the billed water consumption for those customers with both water and sewer service. In total, sewer billed volumes represent roughly 60% of the total water consumption because PRASA has a significant number of water-only customers. Approximately 40% of PRASA's customers are water-only customers.

Table 7-1.
Population, Accounts and Billed Volumes for Water and Sewer
FY2003 - FY2007

Description	FY2003	FY2004	FY2005	FY2006	FY2007
Residential Population[1]	3,895,881	3,895,101	3,911,810	3,927,776	3,900,000
% Change		(0.02%)	0.43%	0.41%	(0.71%)
Water					
Total Number of Water Accounts	1,207,379	1,225,899	1,242,560	1,254,650	1,259,415
% Change	2.43%	1.53%	1.36%	0.97%	0.38%
Total Water Production (cubic meters)	797,617,449	813,012,299	871,429,383	887,456,941	934,019,760
Unaccounted for Water (cubic meters)	449,851,795	454,726,994	516,012,528	528,045,396	583,707,415
Water Consumption (cubic meters)	347,765,654	358,285,305	355,416,855	359,411,545	350,312,345
% Change	1.52%	3.02%	(0.80%)	1.12%	(2.53%)
Sewer					
Total Number of Sewer Accounts	677,245	688,300	704,815	719,738	729,413
% Change	3.74%	1.63%	2.40%	2.12%	1.34%
Sewer Billable Volume (cubic meters) [2]	208,973,462	216,308,716	215,112,291	216,048,713	208,617,036
% Change	3.50%	3.51%	(0.55%)	0.44%	(3.44%)

(1) U.S. Census Bureau, Annual Estimate of the Population dated December 22, 2006. FY2007 estimated by the Junta de Planificación de Puerto Rico, the state agency responsible for central planning.
(2) Sewer volumes are reflect 100% of metered water consumption less water only customer usage.

Tables 7-2 and 7-3, respectively, show the historic number of accounts and consumption by customer class for FY2004 – FY2007 as provided by PRASA.

Table 7-2.
Historic Number of Accounts by Customer Class
FY2004 – FY2007

Customer Class	FY2004	FY2005	FY2006	FY2007
Residential	1,145,963	1,161,350	1,173,040	1,178,677
Commercial	67,375	68,093	68,396	67,560
Industrial	1,528	1,533	1,526	1,472
Government	11,033	11,584	11,688	11,706
Total	1,225,899	1,242,560	1,254,650	1,259,415
% Change	1.53%	1.36%	0.97%	0.38%

Table 7-3.
Historic Water Consumption by Customer Class (Cubic Meters)
FY2004 – FY2007

Customer Class	FY2004	FY2005	FY2006	FY2007
Residential	261,394,615	260,659,631	265,730,819	263,088,570
Commercial	47,134,046	46,387,796	45,891,974	42,712,379
Industrial	14,385,261	12,520,946	12,140,996	11,858,269
Government	35,371,383	35,848,482	35,647,756	32,653,127
Total	358,285,305	355,416,855	359,411,545	350,312,346
% Change	3.02%	(0.80%)	1.12%	(2.53%)

Using the previous tables, MPPR/Malcolm Pirnie calculated the average annual metered consumption per account shown in table 7-4.

Table 7-4.
Historical Average Annual Consumption per Account (Cubic Meters)[1]
FY2004 – FY2007

Customer Class	FY2004	FY2005	FY2006	FY2007
Residential	228	224	227	223
Commercial	700	681	671	632
Industrial	9,414	8,168	7,956	8,056
Government	3,206	3,095	3,050	2,789
Average	292	286	286	278

(1) Consumption in Table 7-3 divided by accounts in Table 7-2.

FY2007 reflects lower average consumption per account than the previous three fiscal years for all classes except the Industrial class. PRASA is projecting average annual consumption per account to maintain the FY2007 levels for all customer classes over the forecast period. Using FY2007 as a base, total service revenues are forecasted by PRASA to increase 1% annually.

The Forecast does not take into account the potential impact of tropical storms, droughts, earthquakes, or other natural disasters. PRASA has plans in place to respond to natural disasters and emergencies, as discussed in Section 5.5.3, which plans should help PRASA mitigate the effects of such disasters should they occur, and minimize the negative impact on revenues.

7.3. Water and Sewer Rates

7.3.1. Rate Structure

The rate structure for water and sewer service consists of a monthly base charge per account and a volume rate for residential, commercial, industrial and government customer classes. The base charge varies by the size of the water service line and includes 10 cubic meters of consumption regardless of total water use or customer class, while the volume rate is assessed based on metered water use above 10 cubic meters. All customers pay for service; however, PRASA does provide a 35% subsidy to the base charge for residents over the age of 65 who are eligible under the Programa de Asistencia Nutricional ("PAN" Program) or residents under the Programa de Asistencia Temporal para Familias Necesitadas ("TANF" Program).

The FY2007 rate structure, effective July 1, 2006 for residential customers, is reflected in the following tables:

Table 7-5.
Residential
Monthly Base Charge per Account

(includes first 10 cubic meters of consumption)

FY2007

Water Service Line	Water	Sewer	Water & Sewer
1/2" & 5/8"	$10.60	$9.11	$19.71
3/4"	16.18	13.94	30.12
1"	26.58	17.90	44.48
1 1/2"	50.22	27.54	77.76
2"	85.49	47.09	132.58
3"	131.13	78.45	209.58
4"	294.97	137.76	432.73
6"	786.63	642.86	1,429.49
8"	1,258.61	734.69	1,993.30
10"	2,013.79	1,175.50	3,189.29
12"	3,222.06	1,880.81	5,102.87

Table 7-6.
Residential
Volume Rate per Cubic Meter

FY2007

Block	Monthly Usage (cubic meters)	Water	Sewer	Water & Sewer
1	>10 - 15	$1.10	$0.90	$2.00
2	>15 - 35	1.60	1.33	2.93
3	> 35	2.16	1.77	3.93

The FY2007 rate structure, effective July 1, 2006 for non-residential customers, is reflected in the following tables:

Table 7-7.
Non-Residential
Monthly Base Charge per Account(1)

(includes first 10 cubic meters of consumption)

FY2007

Water Service Line	Water	Sewer	Water & Sewer
1/2" & 5/8"	$21.43	$17.67	$39.10
3/4"	31.73	28.00	59.73
1"	53.72	39.43	93.15
1 1/2"	107.64	66.14	173.78
2"	171.11	103.15	274.26
3"	384.09	214.40	598.49
4"	638.07	404.26	1,042.33
6"	1,607.67	1,296.75	2,904.42
8"	2,584.65	2,011.63	4,596.28
10"	4,135.45	3,218.61	7,354.06
12"	6,616.72	5,149.77	11,766.49

(1) Commercial, Industrial and Government customer classes

Table 7-8.
Commercial and Government
Volume Rate per Cubic Meter

FY2007

Block	Monthly Usage (cubic meters)	Water	Sewer	Water & Sewer
1	>10 – 100	$1.53	$1.27	$2.80
2	>100 – 200	1.60	1.33	2.93
3	> 200	1.90	1.60	3.50

Table 7-9.
Industrial
Volume Rate per Cubic Meter

FY2007

Block	Monthly Usage (cubic meters)	Water	Sewer	Water & Sewer
1	> 10	$1.67	$1.40	$3.07

7.4. Historic and Projected Revenues

7.4.1. Historic Revenues

Table 7-10 presents historic revenues on accrual basis for FY2004 through FY2007. FY2007 are unaudited numbers provided by PRASA. Figures are stated gross of uncollectible accounts.

Table 7-10.
Historic Revenues ($ Thousands)
FY2004 – FY2007

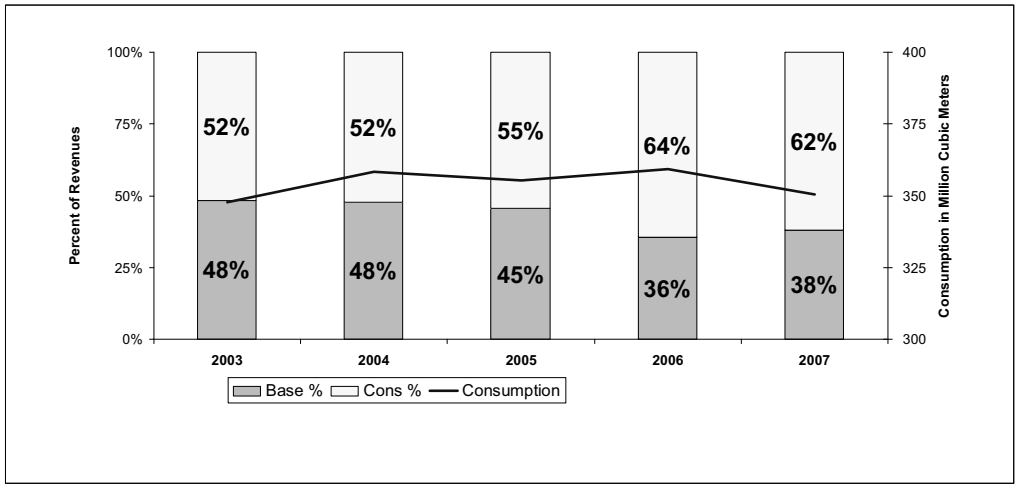
Operating Revenues [1]	FY2004 [2] Audited	FY2005 [3] Audited	FY2006 [3] Audited	FY2007 [4] Unaudited
Water	$220,659	$217,148	$352,495	$515,407
Sewer	114,301	111,570	186,287	277,518
Total Operating Revenues	$334,960	$328,718	$538,782	$792,925
% Change	(0.6%)	(1.9%)	63.9%	47.2%

(1) FY2006 reflects first phase of rate increase effective October 1, 2005. FY2007 reflects the second phase of increase effective July 1, 2006. FY2006 and FY2007 revenues include $33.3M and $43.8M, respectively, of unbilled services.
(2) Source: Audited financial statements. The FY2004 change reflects the change over FY2003 audit.
(3) Source: Audited financial statements restated by PRASA to present on a basis consistent with previous two years with no adjustment for uncollectible accounts.
(4) Source: Trial balance presented on a basis consistent with previous years.

FY2006 operating revenues reflect the first of a two-phase rate increase with the first increase taking effect on October 1, 2005 and the second increase taking effect at the start of FY2007. These increases resulted, in an average overall increase of approximately 128% to residential water and sewer customers.

The historic percent of revenues generated from the monthly base charge is summarized for FY2003 through FY2007 in Figure 7-1. The consumption line reflects total historic annual consumption in million cubic meters.

Figure 7-1.
Historic Percent of Revenues – Base Charge and Volume Charge
FY2003 – FY2007



The higher the percent of revenues from this monthly base charge, the more stable the overall revenue stream. For FY2003 - FY2005 PRASA generated between 45-48% of its revenues from the base charge. This is a high percent when compared with other governmental water providers, but as noted, provides for a relatively stable revenue stream. The rate increase in FY2006 generated additional revenues through changes in the rate structure while decreasing the percent of revenues from the base charge. Although lower, 38% still reflects a significant amount of revenue that is not subject to variability due to fluctuations in demand.

7.4.2. Projected Revenues

MPPR/Malcolm Pirnie reviewed the revenues provided by PRASA for the Forecast period shown in Exhibit 1. Each of the major revenue categories shown is described in this subsection along with a description of how the Management's Base Case was developed by PRASA.

1. Service Revenues/Billings – PRASA's single largest source of revenue is from the monthly base charge and volume rate for service as described in Section 7.3. PRASA implemented a two-phase rate increase effective October 10, 2005 and July 1, 2006. Resolution No. 2167 (the Resolution) was approved on October 6, 2005 by PRASA's Board of Directors after recommendation by PRASA's Executive President and the Board's Revenue Committee. The Resolution included provisions for future increases

and implementing a base charge reduction for qualifying customers. The Resolution also provided certain restrictions on future revenue increases as outlined below:

a) Rates for water and sewer service are not allowed to be increased prior to July 1, 2009 (FY2010);

b) Increases after July 1, 2009 will be calculated according to a specified formula ("Coefficient of Annual Adjustment" described below);

c) Beginning July 1, 2009, there is a cap or limit on future annual increases of 4.5% and a limit on the cumulative increase of 25%;

d) If PRASA requires an increase in excess of 4.5% in any single year, or once the 25% cumulative limit is reached, PRASA must go through the formal approval process for requesting a rate increase; and

e) Certain qualifying customers are eligible for a 35% reduction in their monthly base charge.

Increases implemented after July 1, 2009 are limited by the calculation of the Coefficient of Annual Adjustment (CAA) described in Resolution No. 2167. There are three steps to determining the CAA as follows:

STEP 1 – Calculate the Coefficient of Deficiency (CD) for the applicable year:

$$CD = \frac{\text{Operating Expenses and Debt Service}}{\text{Operating Revenues}}$$

STEP 2 – Calculate the Annual Base Coefficient (CAB) for the Base Year:

$$CAB = \frac{\text{Operating Expenses and Debt Service (FY2007)}}{\text{Operating Revenues (FY2007)}}$$

STEP 3 – Calculate the Coefficient of Annual Adjustment (CAA):

$$CAA = \frac{CD}{CAB}$$

If the Coefficient of Deficiency for any year is greater than the Annual Base Coefficient from FY2007, i.e., CD is greater than CAB, then the rates can be increased by the lesser of the Coefficient of Annual Adjustment less one (CAA-1) or 4.5% until the 25% cumulative maximum is reached.

In addition to the change in rates, PRASA converted to monthly billing in October 2005 using estimated readings. Beginning in October 2007, PRASA began using actual versus estimated meter readings to bill residential customers.

In the Forecast, PRASA is projecting a 1% increase in revenues due to growth (i.e., the addition of new accounts) in Base Fee/Service Charges revenues annually on base revenues of $775M in FY2008. This is reflected on lines 2 and 3 of Exhibit 1. Based on the recent history (the growth in accounts from FY2003 to FY2007), this is a reasonable assumption.

There are no rate adjustments included in the Forecast for FY2008 and FY2009, consistent with the Resolution. After FY2009, the Forecast includes rate adjustments of 4.5% annually through FY2014. These are reflected in Exhibit 1, line 5, as "Rate Adjustments" consistent with the terminology of the Resolution discussed above. The projected rate adjustments were calculated by PRASA using audited FY2007 numbers as the base year. PRASA is anticipating a total increase of 4.5% in FY2015 of the Forecast – a 0.3% rate adjustment, calculated using the formula described above, and a 4.2% rate increase. Increases, under the Forecast or Management's Base Case, for FY2016 and FY2017 are projected by PRASA at 4.5% and 4.5%, respectively.

If the calculated adjustment (or 4.5% whichever is lower) is not sufficient in any year or PRASA reaches the 25% cumulative cap, PRASA may (as allowed by the Resolution) go through the formal rate approval process which includes providing public notice, holding public hearings, and conducting an examination of the proposed changes by a designated official. The specific procedures are outlined in the Uniform Law for the Revision and Modification of Rates (referred to as "Law No. 21").

Management's Base Case indicates that the cumulative 25% cap is expected to be reached in FY2015. The remaining rate increases, FY2015 and beyond, are shown on line 4 and would need to be approved through the formal process previously described.

PRASA appears to be determining projected rate adjustments in a manner consistent with the Resolution. The ability to implement rate adjustments (up to 4.5% per year; 25% cumulatively) without a formal rate approval process, is both relatively unique in the industry and advantageous to PRASA. That is, increases can be implemented "automatically" based on a reasonable formula and PRASA may still seek even higher increases through the formal process previously described.

2. Operational Initiatives – PRASA is projecting additional revenue from the implementation of various operational initiatives as shown on line 6 of Exhibit 1. Converting connected, but non-paying customers is the most significant (in terms of additional revenue potential) of these initiatives. Through conducting pilot studies,

PRASA has estimated that 10% of customers (125,942 accounts) are connected, but non-paying. Upon conversion, each new paying residential account (with both water and sewer service) could generate as much as $35.00 per month. Using an estimated monthly residential bill for a combined water and sewer customer of $35.17 (and $19.30 for a water only customer), there is a potential annual revenue increase of $43M if all these accounts are billed and amounts due collected. PRASA anticipates retaining a private contractor to complete a "Mega Census" program to identify and begin billing these non-paying customers. The completion of this effort is projected to yield the majority of the initiative revenue by FY2010.

A second, less significant, operational initiative is the replacement of meters over 15 years in age. PRASA plans to replace approximately 144,000 meters over FY2009-FY2010; this replacement is expected to increase revenue in FY2009 and FY2010. No additional increase from meter replacements is assumed beyond FY2010. Additional meters are projected to be replaced in each subsequent year to maintain the average condition of the meters and prevent erosion of revenue.

The revenue impact from these two operational initiatives is estimated by PRASA at $3.9M in FY2008 increasing to $34.9M in FY2010 and to $50.4M by FY2017. (Additional information on the operational initiatives is included in Section 4.9.1.)

These, and related initiatives to increase revenues (for example, improving billings and collections) are clearly warranted and widely used in the industry. MPPR/Malcolm Pirnie believes that such programs have the potential to significantly improve revenues. Recent studies by PRASA indicate that non-paying customers, erroneous billing, and marginal or inaccurate meter performance, is adversely affecting its ability to maximize revenues. As a reference point, PRASA had various revenue enhancing programs with a contract management firm during the mid-1990's through about 2004. Using an incentive-based contracting approach (i.e., contractor received a portion of the new revenues), PRASA was able to increase annual revenues by 15% to 20%.

This historical information and the results of recent pilot studies and investigations, indicate that ample opportunities exist to materially increase revenues as proposed by the PRASA initiatives. To maximize these opportunities, PRASA must diligently and expeditiously execute organized and focused programs via contractual arrangements with specialized firms, as currently planned (the Mega Census program). The use of incentive-based contracting, which is one of the options being considered by PRASA, is particularly encouraging given the historical success of such methods in the industry and more importantly, the success experienced by PRASA as previously noted.

3. Reserve for Uncollectible Accounts – Management's Base Case revenues include an adjustment for uncollectible accounts on line 7 of Exhibit 1. Prior to the recent rate

increases, uncollectible accounts were approximately 4% of all billings. Approximately 14% of these uncollectibles are from the Commonwealth, with the remaining 86% coming mostly from the residential customer class. In FY2007, the uncollectible level increased to 6.7%, which may have surged due to the rate increases, the change in rate structure, and/or the change to monthly billing.

Management's Base Case includes a reduction in its uncollectible percentage from the Commonwealth. It is the intention of the Commonwealth agencies to prioritize payment of their bills to Public Corporations such as PRASA. PRASA projects that the reduction in uncollectible amounts from the Commonwealth can reduce the total System collection reserve to 5.3% by FY2015. The reduction to the collection reserve is shown on Table 7-11.

Table 7-11.
Collection Reserve Assumptions
FY2008 – FY2017

Year	Total System Collection Reserve %	Year	Total System Collection Reserve %
FY2008	6.7%	FY2013	5.6%
FY2009	6.3%	FY2014	5.4%
FY2010	6.0%	FY2015	5.3%
FY2011	5.8%	FY2016	5.3%
FY2012	5.7%	FY2017	5.3%

PRASA has estimated the impact of this reduction to the collection reserve to be an annual increase in revenue of $3M in FY2009 increasing to $18M in FY2017. This is calculated as the difference between maintaining a 6.7% collection reserve for the entire forecast period and the projected reserve percentage reductions for each year to achieve a 5.3% collection reserve in FY2015.

Given the 128% increase in the base charge, it is not unusual to experience a temporary increase in the uncollectible percentage such as PRASA has experienced over the last year. The reduction in the uncollectible percentage over the forecast period is reasonable given the history of the uncollectible percentage at 4% or less prior to the 128% rate increase and the more modest rate increases projected over the forecast period.

4. Actual Collections Adjustment – In FY2007, PRASA experienced an increase in the number of disputed customer billings as a result of the change from bi-monthly to monthly billing. This resulted in $40M of billings being suspended until resolution of these disputes (Exhibit 1, line 9). PRASA has projected that it will ultimately collect only

$15M of these FY2007 disputed billings. In the first two months of FY2008, PRASA collected approximately $3M of these suspended billings and is projecting that $15M will be collected in FY2008; no additional collections are anticipated.

Based on the progress that PRASA has made in the first two months in collecting on these disputed billings, it is a reasonable expectation that PRASA will collect the $15M in FY2008.

5. Subsidy – PRASA's Forecast includes a reduction in revenues to reflect the subsidy offered to customers who qualify for the PAN or TANF programs (described in Section 7.3.1). The subsidy, approved in October 2005 by PRASA's Board of Directors, provides a 35% base charge discount to PAN or TANF-eligible customers, i.e., qualifying seniors over 65 years of age, disabled persons, and families in need of temporary assistance. Qualifying customers must be PRASA customers and must apply for the subsidy.

PRASA has calculated the full impact of this subsidy to be approximately $17.0M annually if all eligible customers apply for and meet the qualification criteria (estimated at 210,000 customers). In FY2006, the subsidy totaled $1.2 million and in FY2007, the subsidy is estimated at $2.5M. The Forecast assumes the level of the subsidy to increase to $3.3M (a 32% increase) in FY2008 and then 10% per year over the balance of the forecast period; from $3.3M in FY2008 to $7.8M in FY2017 (Exhibit 1, line 10).

PRASA does not expect all 210,000 eligible customers to apply for the subsidy and therefore does not forecast the subsidy to reach the full $17M. For FY2008 (through November) the subsidy amount was $1.14M; or an annualized amount of $2.75M for FY2008. The historical and recent trends of actual subsidies support PRASA's projections in the Forecast.

6. Other Income – PRASA receives revenue from other services including: theft penalties, installation of antitheft devices, reconnections, meter calibration, sale of water for construction, bulk water sales, jobbing and contract water, and monthly fixed fees for sprinkler systems and private fire hydrants (Exhibit 1, line 11). Many of these fees were increased on July 1, 2006 at the same time as the increase in base and volume rates for service. Revenues from other services and sales are projected to remain constant even though PRASA has the option of increasing the fees for these services without going through the public hearing process and without being subject to the provisions of the Rate Resolution described above under "Service Revenues/Billings".

Given that PRASA has the option to increase the fees that generate other income, PRASA's forecast of holding the revenue from other income constant for FY2008 and beyond is reasonable.

7. Special Assessments – PRASA collects revenues from new service installations. This fee is collected from developers and applies to new water and sewer connections to the System. The current fees are $500 each for water and sewer connections ($1,000 total). PRASA's intends to request approval from its Board of Directors to double these fees and has assumed for purposes of the Forecast, an increase in special assessment revenues of 30% in FY2009 (Exhibit 1, line 12). The Forecast does not assume the revenues will double in the event that the full increase is not approved or that it is delayed.

PRASA has already prepared the support for the increase in these fees and is showing only a 30% increase in FY2009 and no increases in subsequent years. As such, the forecast is reasonable given PRASA's intent to move forward with requesting approval of the increase and the potential for more revenue simply due to growth.

8. Interest Income – PRASA has included interest income to be earned on its cash balance (Exhibit 1, line 13), which is reasonable based on historical performance.

7.5. Review of Historic and Projected O&M Expenses

7.5.1. Historic Expenses

Historic O&M expenses for the System are shown in Table 7-12. Expense figures from FY2004, FY2005 and FY2006 are from audited financial statements. FY2007 data is unaudited.

Noteworthy operational events during this period are as follows:

- FY2004 reflects the change from private contractor operations back to PRASA-managed operations, and as such, some expense categories may not be comparable.
- FY2005 operating expenses reflect a three-month PRASA labor strike which affected salaries as well as other expense categories.
- Changes in certain categories of expenses are partially in response to developing and implementing operational and maintenance-related improvements to meet various consent decree requirements.

Table 7-12.
Historical O&M Expenses ($ Thousands)
FY2004 – FY2007

Operating Expenses	FY2004 Audited	FY2005 Audited	FY2006 Audited	FY2007 (1) Unaudited
Payroll and Related	$137,897	$276,181	$301,918	$320,698
Electric Power	73,426	85,465	113,907	110,830
Chemicals	9,078	20,830	25,020	28,691
Superaqueduct	15,022	16,682	22,401	20,557
Insurance	13,986	10,745	9,367	12,676
Other operational expenses	57,769	88,738	71,851	65,237
Service contract – Operator (Ondeo)	179,766	0	0	0
Professional and consulting services	19,120	41,843	33,818	12,692
Materials and replacements	5,757	13,603	8,560	14,992
Repair/maintenance of fixed assets	4,221	21,298	18,913	29,910
Less Capitalized Expenses(1)		(32,310)	(35,869)	(44,257)
Total Operating Expenses	$516,042	$543,075	$569,886	$587,985
% Change		5.2%	4.9%	3.2%

(1) Source for FY2007: Trial Balance.

7.5.2. Projected Expenses

MPPR/Malcolm Pirnie reviewed O&M expenses for the forecast period as shown in Exhibit 1. Each of the major expense categories shown in Table 7-12 is described in this subsection along with a discussion of how the Forecast was developed by PRASA.

1. Payroll Expenses – Payroll expenses reflect the terms of the proposed union contract which is pending final approval and signatures. Of the 5,841 employees (as of June 30, 2007), approximately 78% are represented by the UIA-AAA. PRASA fully expects to honor the terms of the new draft union agreement which includes an approximate $100 per month pay increase per employee for each fiscal year of the forecast period.

PRASA hired approximately 500 new employees late in FY2007, with many assigned to customer service functions. Approximately 250 of these employees are temporary and are not expected to be retained by PRASA on a permanent basis. After a budgeted increase in the number of employees in FY2008, PRASA is forecasting net reductions in headcount in each subsequent year of the Forecast – from a reduction of 50 fewer employees in one year up to a high of 157 fewer employees (this equates to an average net reduction of 49 employees per year over the forecast period); these reductions average (0.8%), of the total workforce, annually over the entire forecast period. PRASA is expecting to achieve these reductions through a variety of program/initiatives including: staff attrition, early

retirement programs, freezing vacant positions, and reclassifying positions. These programs/initiatives are discussed in Section 2.4.5 of this report.

Given the number of initiatives that PRASA is implementing to achieve greater operating efficiencies, it is reasonable to expect workforce reductions. How quickly PRASA will be able to achieve these reductions is not yet known; and in the short term, there may actually be need to increase headcount to implement some of the initiatives. As such, the magnitude of the potential savings via such programs is not yet available. For this reason PRASA has developed a more conservative estimate of workforce reductions for use in Management's Alternate Case.

2. Electric Power – Between FY2004 and FY2007, PRASA experienced an average annual increase in electric power costs of 14.7%, but is projecting smaller increases over the forecast period – a 3.5% increase was budgeted for FY2008 and 2% increases are included in the Forecast for FY2009 and beyond. These increases reflect PRASA's expectations regarding enhanced billing controls and policies, the implementation of a new energy conservation program, and anticipated reductions in electrical costs announced by PREPA in FY2007. PRASA expects these initiatives and specifically, savings from its energy conservation program, to partially offset the effect of any increase in the current level of spending or increases resulting from growth in accounts and construction of new and upgraded treatment plants. Energy conservation is expected to be achieved from both the consolidation of PRASA's plants, changes in operations and processes, and from capital investments in these facilities.

PREPA has started several initiatives which include, among other things, diversifying its fuel base in order to reduce its exposure to future increases in oil prices. PREPA has implemented a ten-year program beginning in FY2007 which is expected to allow it to better balance the use of oil with natural gas and coal. By the end of the program, PREPA hopes to reduce oil, as a percent of fuel sources, from 73% in FY2006 to between 35-40% in FY2017.

PRASA's success in managing its electric power consumption will be critical in lowering the rate of increase in this expense category. This element of its total electric power bill can be directly influenced by the proposed programs.

Alternatively, unit cost increases in power are not within PRASA's control and while PREPA has publicly indicated its plan to reduce oil dependence and better manage its cost structure, PRASA does not have a fixed price contract and will in the future be subject to general cost increases as well as fuel surcharge pass throughs from PREPA. The PRASA forecast of electric power is premised on both the success of its own usage management techniques and PREPA's ability to reduce its costs – neither of which can be quantified at this time. This uncertainty is addressed in Management's Alternate Case

where electric power costs are projected to increase at the rate of 5% per year over the forecast period.

As previously noted, Management's Base Case assumes that electricity costs will increase by about 2% annually. This projected annual increase is significantly different than the historical increases over the last decade where electricity costs have approximately doubled. PRASA believes that electricity costs are at an all-time high given the recent spike in fuel costs and certain electricity production challenges in Puerto Rico. As noted, PREPA has advised PRASA that it expects electricity costs to either remain stable or even drop over the coming years once current production problems are addressed and a diversification of the fuels used is achieved.

Over the last 30 years PRASA has seen cyclical costs in electricity, and it is not uncommon to see stable or reduced electricity costs at certain periods during such cycles. If PRASA and PREPA are correct about where they are in the fuel and electricity cost cycle, the projected 2% annual increases are not unprecedented. PRASA does have some opportunity to control usage, which would reduce costs. While PRASA has initiated some noteworthy programs to identify conservation and efficiency opportunities, such programs are in the early stages. As such, the magnitude of the potential savings via such programs is not yet available.

3. Chemicals – Between FY2005 and FY2006, chemical expenses increased 14%, and between FY2006 and FY2007 21%. FY2005 chemical expense was less due to the strike affecting usage. The large increase in chemical expenses between FY2005 and FY2006 was mostly due to lower usage during the FY2005 strike, as a result of more efficient application. In addition some chemical consumption relating to FY2006 was actually recognized or accounted for in FY2007. PRASA is forecasting smaller increases – 1% each year for FY2008 and FY2009 under a current supply contract, then 3.5% thereafter. This rate of increase is premised on the success of the following initiatives:

- Use of alternative products and process control changes
- More training for employees for the correct use of chemicals
- The closing and consolidation of smaller, less efficient WWTPs

PRASA is also in the process of issuing a Request for Proposal (RFP) to procure qualifications statements and technical proposals from prospective chemical (polymers and coagulants) providers. PRASA's existing chlorine contract expires in 2009, and PRASA may include it in the previously referenced RFP for chemicals.

While PRASA expects that the current RFP process will deliver competitive prices under fixed price contracts, this process will not be completed until later this year. As such,

PRASA's ability to achieve annual increases in the 1% to 3.5% range is yet to be determined.

4. Superaqueduct – PRASA is forecasting annual increases of between 2% and 3% for expenses associated with the operation of the Superaqueduct. The Superaqueduct facilities are managed and operated by Thames-Dick Superaqueduct Partners under contract with PRASA. The facilities include the following:

- A large 100 MGD water treatment plant located in the North Region
- A transmission line from the plant to Bayamón/Metro Region
- Several points of connection to the Superaqueduct, including tanks, pumping stations, and other assets

Between FY2005 and FY2006, the expense for the Superaqueduct increased 34%. This significant increase is a reflection of one-time events such as retention lagoon cleanings and the spike in electricity costs (the pass-through of fuel costs from PREPA). Between FY2006 and FY2007, the expense for the Superaqueduct decreased 8%. PRASA's contract with Thames-Dick includes an annual fixed fee component (approximately one-third of the annual expense) and pass-through costs for such O&M expense items as power and fuel, chemicals, and insurance. The largest pass-through component – power and fuel – are forecast to increase annually by 4%. The contract expires in September 2008 and is renewable by PRASA for up to two additional five-year terms.

The Thames-Dick contract with PRASA and the corresponding payment provisions are consistent with general industry practice. Provided that the pass-through costs are controlled as planned, the overall annual increases are reasonable.

5. Insurance – Between FY2006 and FY2007, insurance expenses increased 35%. Insurance expenses are projected by PRASA to increase by 11% in FY2008 and then increase 2% annually for the balance of the forecast period. These escalation rates reflect expected annual inflation of 3%, netted against to-be-negotiated insurance premium reductions of 1%. Historically, these renegotiations have resulted in decreases as shown between FY2004 and FY2006 on Table 7-12. PRASA risk management professionals are continuing to analyze multiple avenues for controlling insurance expense, such as higher deductibles and self-insurance.

Based on the historic change in this expense category and planned efforts to control costs, e.g., renegotiations and risk management tactics, the projected expenses are reasonable.

6. Other Expenses – Table 7-13 details the "Other Expenses" category shown in total in Exhibit 1. Other Expenses in total are projected to increase by 8.4% in FY2008 and then increase by 2.7% annually thereafter. The 8.4% change in Other Expenses between

FY2007 and FY2008 is expected to result from increases in professional and contractual services. Going forward, PRASA anticipates efficiency savings in Other Expenses as a result of various programs such as the IPMP, system improvements resulting from recent and anticipated CIP projects, and improved pricing resulting from negotiations for materials and services. Some of the Other Expenses are at contract or fixed prices. Other Expenses that are not fixed are forecast to increase at the rate of 2.7% annually over the forecast period.

Given the number of Other Expenses that are at contract or fixed prices and the savings anticipated from System improvements, it is reasonable to expect that PRASA will be able to hold increases in this expense category more in line with expectations of inflationary increases in the range of 2% to 3% per year.

Table 7-13.
Other Expense Projections ($ Thousands)
FY2008 – FY2012

Other Expenses	FY2008	FY2009	FY2010	FY2011	FY2012
Maintenance and Repairs	$27,409	$28,231	$29,078	$ 29,950	$30,849
Materials and Supplies	14,441	14,874	15,321	15,780	16,254
Billings and Collections(1)	12,115	12,358	12,605	12,857	13,114
Security	8,324	8,573	8,831	9,095	9,368
Professional Services	14,103	14,526	14,962	15,411	15,873
Contingencies & Fines	5,696	5,867	6,043	6,224	6,411
Treatment & Disposal of Residuals(1)	7,068	7,209	7,353	7,500	7,650
Rentals(1)	8,885	8,973	9,063	9,154	9,245
Fuels and Oils	6,637	6,836	7,042	7,253	7,470
Water Purchases	6,831	7,035	7,246	7,464	7,688
Water Transport(1)	3,104	3,135	3,166	3,198	3,230
Third Party Contracted Services	6,247	6,434	6,627	6,826	7,031
Contracted Technical Asst.	12,274	12,643	13,022	13,413	13,815
System/Licenses Services	6,353	6,543	6,740	6,942	7,150
Telephone/Network	3,343	3,443	3,547	3,653	3,763
Chemical/Bacterial Analysis	2,844	2,929	3,017	3,107	3,201
Office Supplies & Materials	2,326	2,396	2,468	2,542	2,618
Communications	1,819	1,874	1,930	1,988	2,048
Vehicle Licenses(1)	679	692	706	720	734
Total	$150,497	$154,574	$158,766	$163,078	$167,512
% Change	8.4%	2.7%	2.7%	2.7%	2.7%

(1) Expenses set under contract or fixed price.

7. Capitalized Expenses – PRASA has projected that 6.5% of O&M expenses will be capitalized annually (shown as a reduction to projected expenses in Exhibit 1) in its Forecast. Capitalized expenses include payroll and indirect costs associated with development and implementation of the CIP, renewal and replacement and major repair of fixed assets which may be combined with implementation of the CIP, and allocation of staff expenses associated with construction management and oversight of the CIP. PRASA has a draft 2007 consultant's report[18] supporting a preliminary capitalization figure of 6.5% for FY2007 after adjusting for $2M in replaced meters. The capitalization percent may change from year-to-year depending on the organizational structure and volume of asset replacements.

Given the level of the CIP and the support provided by an external consultant's report for the current capitalization figure, the forecast of a 6.5% capitalization rate is reasonable.

7.5.3. FY2007 Budget vs. Actual Expenses

In addition to the historical expense information provided in the preceding tables, MPPR/Malcolm Pirnie reviewed PRASA's comparison of FY2007 budgeted expenses to actual results. Actual expenses for FY2007 were 1.2% above budgeted expenses using unaudited numbers provided by PRASA. There are, as can be expected, differences in the individual expense line-items, with some expenses higher than budgeted and others lower. However, this variance is reasonable and within general industry ranges based on our experience.

7.6. Funding of PRASA CIP

The CIP developed by PRASA estimates an expenditure of $4.0 billion over the forecast period. Section 6 of this CER contains a review of PRASA's CIP. Specifically, it provides an assessment of the following:

- PRASA's CIP, including a summary of the program by project category.
- The adequacy of the CIP to address identified system deficiencies and current requirements stipulated in open Consent Decrees held with regulatory agencies.
- The potential affects of future regulations to the PRASA system and the CIP.

Exhibit 1, page 2 provides a summary of the CIP along with the anticipated sources of funding.

Of the sources of funds identified over the five-year forecast period, 74.4% are projected to come from interim financings and bond proceeds (Bond Proceeds); 20.4% are projected to come from Federal Funds (State Revolving Fund, Rural Development bonds

[18] November 9, 2007 Draft Asset Capitalization Report by Paul J. Cumiskey, PJ Sun, LLC.

and other matching sources); 2.2% are projected to come from PRIFA which provides financial and administrative assistance to PRASA through revolving fund loans at below-market interest rates; and 3.0% are projected to come from surplus cash and restricted funds from the Economic Development Bank (BDE).

7.7. Debt Service

7.7.1. Existing and Proposed Debt Service

The Series A and B Senior Lien Revenue Bonds (the "Senior Lien Bonds") and Revenue Refunding Bonds 2008 Series A and B (collectively, the "2008 Guaranteed Bonds" will be issued as part of a comprehensive financial plan to fund PRASA's CIP and restructure PRASA's outstanding indebtedness to accommodate its current and future CIP needs. The proceeds of PRASA's $1,338,649,456 Senior Lien Bonds will be used by PRASA to (i) fund a portion of the cost of its CIP, (ii) refinance certain lines of credits and bond anticipation notes, (iii) establish a debt service reserve fund, (iv) establish a deposit for capitalized interest, (v) payments for termination of a forward interest rate swap agreement, and (vi) pay for expenses related to the issuance of the Senior Lien Revenue Bonds. The proceeds of PRASA's $284,755,000 Revenue Refunding Bonds (Commonwealth Guaranteed) 2008 Series A and B will be used by PRASA to (i) refund the outstanding PRASA Series 1995 Bonds (Commonwealth Guaranteed), and (ii) pay for expenses related to the issuance of the Revenue Refunding Bonds. For more information, refer to the Plan of Finance in the Official Statement.

Exhibit 1 summarizes the existing and proposed debt service for the forecast period. Estimated debt service amounts include projected payments on the 2008 Bonds and future bond offerings, line of credit (LOC) payments, and payments for maintaining required debt service reserves. The senior bonds (see Exhibit 1, Debt Service, line 1) include the Senior Lien Bonds, the Citi Loan payments in FY2008, takeout of term loan in FY2012, and new rural development bonds in FY2011. Subordinated debt includes new State Revolving Fund (SRF) borrowings beginning in FY2011. Commonwealth Guaranteed Indebtedness includes obligations of PRASA that are guaranteed by the Commonwealth of Puerto Rico including the Series 1995 Bonds (Commonwealth Guaranteed), the 2008 Commonwealth guaranteed Bonds, USDA Rural Development Bonds, SRF Loans, and all obligations on the PRIFA revolving fund loans. Commonwealth Supported Obligations include the obligations of PRASA to finance the Superaqueduct costs and are payable solely from appropriations of the Commonwealth. PRASA's Forecast includes its payment of the Commonwealth Guaranteed Indebtedness and Commonwealth Supported Obligations.

The debt service payments described above and shown on Exhibit 1 are used to calculate the Debt Service Coverage (DSC) requirements and Additional Bonds Test (ABT) which are discussed in subsection 7.7.3.

7.7.2. Master Agreement of Trust

The Master Agreement of Trust (the Trust Agreement) for PRASA's 2008 revenue bond issue contains specific DSC requirements that must be met by PRASA. The execution of the Trust Agreement is expected to be authorized by resolution of PRASA's Board of Directors. The rate covenants which PRASA must meet include the following:

- Net revenues shall be sufficient in each fiscal year to be at least equal to 120% of the annual debt service with respect to the senior indebtedness for such fiscal year.
- Net revenues shall be sufficient in each fiscal year to be at least equal to 110% of the annual debt service with respect to the senior indebtedness and the senior subordinate indebtedness for such fiscal year.
- Net revenues shall be sufficient in each fiscal year to pay:
  - annual debt service on indebtedness;
  - the amounts, if any, necessary to be deposited in any Senior Debt Service Reserve Account, Senior Subordinate Debt Service Reserve Account or Subordinate Debt Service Reserve Account to restore the respective amounts on deposit therein to the amount of the applicable Debt Service Reserve requirement;
  - the amount, if any, necessary to be deposited in the Operating Reserve Fund to maintain the balance therein at the Operating Reserve Fund requirement;
  - the amount, if any, necessary to be deposited in the Capital Improvement Fund as specified in the annual budget;
  - the amount, if any, necessary to be deposited into the Commonwealth Payments Fund for the Commonwealth Guaranteed Indebtedness and/or Commonwealth Supported Obligations; and
  - the amount, if any, necessary to be deposited into the Rate Stabilization Account of the Surplus Fund in accordance with the annual budget for such fiscal year.

As defined and summarized from the Trust Agreement, net revenues is the difference between revenues (including new installation fee revenues) and current expenses. Current expenses are the reasonable and necessary expenses, calculated on an accrual basis, to maintain, repair and operate the system, excluding non-cash reserves or expenses, e.g., depreciation expense.

The DSC requirements of the rate covenants vary by the seniority of the debt and are summarized in Table 7-14. Should PRASA decide to issue additional debt over the forecast period, the ABT requirements would also have to be met. The ABT is a measure of whether or not DSC will still be met after the proposed, additional bonds are issued.

Where two DSC values are shown for the ABT on Table 7-14, the first value is the minimum for net revenues divided by existing and proposed debt service (at the specific lien level). The second value is the minimum for net revenues divided by existing and proposed debt service (regardless of lien level) plus specified reserve fund deposits.

Table 7-14.
Trust Agreement Treatment of Existing and Proposed Debt

Lien Level	Debt Secured	DSC for Additional (1) Bonds Test	DSC for Covenant Test	In Default if not Paid?
Senior	2008 Senior Bonds	120% / 100%	120%	Yes
Senior Subordinate	Bank Term Loan	110% / 100%	110%	Yes
Subordinate	Not applicable currently	100%	100%	Yes
Below Subordinate	Commonwealth Guaranteed Indebtedness	N/A	100%	No
Below Subordinate	Commonwealth Supported Obligations	N/A	100%	No

(1) Two tests apply to future debt. The first test is net revenues divided by existing and proposed debt service (at the existing lien level); the second test is net revenues divided by existing and proposed debt service (regardless of lien level) plus specified Reserve Fund deposits.

The Trust Agreement establishes certain funds as follows: (i) deposit fund, (ii) construction fund, (iii) senior bond fund, (iv) senior debt service reserve fund, (v) senior subordinate bond fund, (vi) senior subordinate debt service reserve fund, (vii) subordinate bond fund, (viii) subordinate debt service reserve fund, (ix) operating reserve fund, (x) capital improvement fund, (xi) commonwealth payments fund, and (xii) surplus fund. The required deposits and uses of each of these funds are described in detail in the Trust Agreement. The DSC and fund requirements are described further in the sections that follow.

7.7.3. Debt Service Coverage – Current Annual Debt Service

Debt service coverage is calculated by dividing the annual net revenues available for debt service by the annual debt service payment for each defined seniority or "lien level" of debt, e.g., senior, senior subordinate. Net revenue is the difference between revenues and

current expenses as defined in the Trust Agreement. Exhibit 1, the PRASA-prepared Forecast, shows the calculation of net revenues and DSC over the forecast period.

The major assumptions used to develop the revenues and expenses used in the calculation of DSC were discussed in the preceding subsections and are reflected in Exhibit 1. Using these assumptions, PRASA projects to meet the DSC targets as required by the Trust Agreement. If the DSC is not met on the targets, the Trust Agreement outlines specific actions, remedies, and timetables for PRASA to comply with the Trust Agreement and avoid a default condition.

7.7.4. Debt Service Coverage – Additional Bonds Test

For ABT purposes net revenues, adjusted for increases and decreases in rates, for which all legal conditions to effectiveness have been met, are divided by the maximum annual debt service for any fiscal year thereafter for the existing and new debt. Exhibit 1, the PRASA-prepared Forecast, shows the ABT for the senior, senior subordinate, and subordinate levels of debt. Using the assumptions detailed in this report, PRASA projects to meet the ABT targets as required by the Master Agreement of Trust.

7.7.5. Operating Reserve

Under the Trust Agreement, the balance in the operating reserve fund is to be maintained at an amount equal to $150 million through June 30, 2012 and thereafter at an amount generally equal to 90 days (or one-quarter) of PRASA's annual O&M expenses. PRASA is allowed under the Trust Agreement to satisfy the required balance by obtaining a line of credit or similar facility. Initially, PRASA expects to obtain a $150 million, five-year line of credit from the Government Development Bank.

The Forecast includes LOC fees and LOC reimbursement obligations to be paid by PRASA along with debt service. Through 2012, the annual LOC fee expense is based on the $150 million amount of the LOC times an annual fee of 75 basis points and is included in the DSC calculations as "below the Subordinate-level".

7.7.6. Capital Improvement Fund

The annual capital improvement fund requirement is an amount equal to the greater of (i) the amount set forth in the annual budget for each fiscal year and (ii) the amount for that year recommended by the Consulting Engineer. The capital improvement fund must have an amount deposited into it monthly that includes the following:

- An amount equal to that which may be necessary to make the balance on deposit equal to the capital improvement fund requirement for the fiscal year as set forth in the applicable annual budget in equal monthly deposits over such fiscal year.
- The proceeds of any condemnation awards.

- Proceeds of insurance (other than use and occupancy insurance).
- The proceeds of sales of property constituting a part of the System.

Amounts deposited into the capital improvement fund may be used to make whole any deficiencies in the Senior Debt Service Reserve Fund, the Senior Subordinate Debt Service Reserve Fund or the Subordinate Debt Service Reserve Fund.

7.8. Management's Alternate Case

PRASA's Forecast (Management's Base Case) includes various initiatives which are expected to produce results on an accelerated basis. These results are reflected, primarily, in the operational initiatives included in the forecasted revenues and, additionally, in the projection of payroll, electric power and chemical expenses in Management's Base Case forecast. While PRASA is committed to the programs and initiatives supporting Management's Base Case and MPPR/Malcolm Pirnie considers the results achievable, it is possible that these results will not be achieved within the projected timeframe. For this reason, PRASA has prepared a more conservative, alternative forecast – Management's Alternate Case, Exhibit 2, which reflects this possibility. The material differences between the two forecasts are listed below and discussed in the balance of this Section:

- The operational initiative relating to the conversion of connected but non-paying customers – the extension of the time period for the conversion under Management's Alternate Case.
- Payroll expense projections – the use of a lower projection of staff reductions over the forecast period in Management's Alternate Case.
- Electric power and chemical expense projections – the use of higher cost escalation factors in Management's Alternate Case.

7.8.1. Management's Alternate Case – Conversion of Connected but Non-Paying Customers

The single most significant revenue-generating operational initiative is the conversion of connected but non-paying customers. It is reasonable to assume that this initiative has the capacity to generate approximately $43M annually. However, the timing of this revenue is subject to the ability of PRASA to implement the program. Because of this uncertainty regarding the timing of the program, Management's Alternate Case assumes that the revenue generated from this program will occur in a more even pattern over the entire forecast as opposed to Management's Base Case that projects the majority of the revenue potential being achieved in the first three years of the forecast period.

7.8.2. Management's Alternate Case – Payroll Reductions, Electric Power and Chemical Cost Escalation

1. Payroll –,After a budgeted increase in the number of employees in FY2008, PRASA projects (in Management's Alternate Case) a reduction in staff by 80 employees each year for the next four years and then by 50 employees each year for the last five years of the forecast period. These reductions are expected to be achieved through staff attrition and related practices and initiatives and are anticipated to be sustainable due to the implementation of a variety of initiatives and new technologies which will allow PRASA to operate with fewer employees, e.g., use of telemetry. Management's Alternate Case includes higher payroll and related costs to reflect a smaller reduction in headcount over Management's Base Case. This would occur if PRASA is unable to achieve the headcount reductions either due to growth in accounts or the need to maintain employees to achieve certain operational initiatives in the short-term.

2. Electric Power and Chemicals – Future increases in electric power and chemicals can be impacted by volatile fuel costs and tend to increase with the growth in consumption or number of accounts served. While PRASA can continue to improve its efficiency in a variety of areas, it does not have direct control over these expenses. For this reason, Management's Alternate Case, Exhibit 2, reflects higher inflation factors for these expenses and includes a growth factor, i.e., increases in the customer base. For electric power and chemicals, Exhibit 2 reflects annual 5% increases (4% inflation and 1% growth) beginning in FY2009 and continuing through the forecast period. The use of a 4% cost escalation/inflation factor is supported by increases in fuel costs over the last several years. Furthermore, data from the Energy Information Administration, which tracks energy statistics from the U.S. Government, indicates fuel costs increases between June 2006 and June 2007[19] of: 17.8% for natural gas, 4.8% for petroleum liquids, and 4.7% for coal.

PREPA's fuel costs can be significantly influenced by world events which by definition, are beyond PREPA's control. In recent years oil prices have fluctuated significantly and this has had a significant impact on the fuel cost surcharge – a pass-through cost from PREPA to its customers, including PRASA.

There is a great deal of uncertainty regarding short-term fuel cost projections. And hence, there is an understanding that, in a global energy market, those reliant on fossil fuel may be subject to significant fluctuations in energy prices[20]. For this reason the higher forecast of electric power costs as used in Management's Alternate Case, appears reasonable.

[19] Energy Information Administration, Electric Power Monthly, October 2007 Edition.
[20] World Energy Outlook 2007, International Energy Agency.

7.8.3. Management's Alternate Case – Rate Revenue Increases

The combination of the adjustment for the connected but non-paying customers operational initiative, and adjustments for payroll, electric power and chemical expenses, results in the need to raise rates beyond the 4.5% annual increases reflected in Management's Base Case. These additional increases as proposed by PRASA in Management's Alternate Case are shown on Exhibit 2, line 4, as rate increases. A comparison of the total percent change in revenues from rates is shown in Table 7-15 for both Management's Base Case (Exhibit 1) and Management's Alternate Case (Exhibit 2). These percentages reflect both rate adjustments allowed under the Rate Resolution and additional rate increases that would only be approved through the formal rate process. PRASA has the option of going through the formal rate process, as previously described, at any time if a 4.5% annual rates adjustment is not sufficient and this would be required under Management's Alternate Case forecast (based on the projected 11.0% increase in FY2010). As previously noted, PRASA implemented an approximate 128% two-phase increase as recent as FY2006 and FY2007. Accordingly, it is reasonable to expect that PRASA would be willing to advance the projected FY2010 11.0% increase as noted in the Alternate Case.

Table 7-15.
Percent Increase in Revenues from Rates
FY2008 – FY2017

Year	Base Case	Alternate Case	Year	Base Case	Alternate Case
FY2008	0.0%	0.0%	FY2013	4.5%	6.0%
FY2009	0.0%	0.0%	FY2014	4.5%	4.5%
FY2010	4.5%	11.0%	FY2015	4.5%	5.8%
FY2011	4.5%	4.5%	FY2016	4.5%	5.0%
FY2012	4.5%	4.5%	FY2017	4.5%	5.1%

7.8.4. Resulting DSC and ABT from Alternate Case

Using Management's Alternate Case as described above, the DSC and ABT requirements from the Trust Agreement were recalculated and shown on lines 40-55 of Exhibit 2. PRASA, with the 11.0% revenue increase in FY2010, is still projected to meet the targets using these alternative assumptions.

7.9. Conclusions on PRASA Financial Forecasts – Management's Base Case and Management's Alternate Case

The purpose of this section is to provide MPPR/Malcolm Pirnie's conclusions regarding the reasonableness of PRASA's forecasts for the ten fiscal years from July 1, 2007 through June 30, 2017.

Management's Base Case includes results from operational initiatives that have been described throughout this report and assumptions regarding the future cost of payroll, electricity and chemicals. The initiatives include those that PRASA is in the process of, or about to be, implementing. In the case of initiatives that have not yet been implemented, Management's Base Case reflects the results of PRASA pilot tests and/or judgment regarding the potential results to be achieved on an accelerated timeframe. These results are reflected, primarily, in the operational initiatives included in the forecast revenues and expenses (payroll, electric power and chemicals).

PRASA has made a commitment to the implementation of the initiatives described in this report. While PRASA is committed to the initiatives, there is a possibility that the results projected to be achieved and more specifically, the timing of those results, will not be achieved. This possibility is reflected in the differences between Management's Base and Alternate Cases and was discussed previously in this section.

The assumptions common to both forecasts, with material distinctions noted, are as follows:

- Historical average annual consumption by account is expected to be maintained, while the number of customer accounts is expected to grow slightly over the forecast period resulting in an annual revenue growth of 1%.
- PRASA will implement the rate increases, if needed, and initiatives described in this Section 7 (as projected for both forecasts – see Table 7-15) in order to achieve increases in revenue and to manage expenses as presented in the ten-year forecast period.
- New revenue is expected to be generated from the enforcement of non-paying customers.
  - Base Case: Achieve the majority of the potential revenue increase from this program in FY2010
  - Alternate Case: Achieve the potential revenue increase ratably over the ten-year forecast period
- Uncollectible accounts, as a percent of revenues, are projected to decrease from 6.7% in FY2008 to 5.3% by FY2015 and remain at 5.3%.

- The new installation fees charged to developers are expected to be doubled in FY2009, however, only a 33.3% increase was included in the revenue projection.
- Payroll and related expenses are projected to continue to increase between approximately 3% and 4%, subject to future changes in labor union contract terms.
  - Base Case: Achieve all of the anticipated reductions in headcount and an average increase of 2.9% over the forecast period.
  - Alternate Case: Achieve less than the anticipated reductions in headcount and an average increase of 3.3% over the forecast period.
- Electric power expense is forecasted to increase annually at the rate of:
  - Base Case: 2% (1% inflation and 1% growth)
  - Alternate Case: 5% (4% inflation plus 1% growth)
- Chemical expenses are forecasted to increase annually at the rate of:
  - Base Case: 1% in both FY2008 and FY 2009 and 3.5% thereafter
  - Alternate Case: 1% in both FY2008 and FY 2009 and 5% thereafter
- The costs associated with the Superaqueduct service contract are projected to increase approximately 3.2% annually under current contract terms.
- Insurance expenses are projected to increase annually at the rate of 2%.
- Other expenses are projected to increase annually at the rate of 2.7%.

Based on our review of the aforementioned, MPPR/Malcolm Pirnie has concluded the following with regard to the PRASA-prepared forecasts covering the ten-year forecast period:

1. Both the Base Case and the Alternate Case demonstrate that PRASA can achieve satisfaction of the requirements of the Trust Agreement going forward at rates and charges which appear reasonable and are likely to be sustainable in light of: (i) PRASA's recent experience in implementing rate increases to support System needs, (ii) the services which PRASA provides, (iii) and the obligations of PRASA to attain environmental compliance and maintain and modernize the System.
2. Projections of revenues and expenses have been reviewed in comparison with historical data and have been found to be consistent with the stated assumptions.
3. Projections of revenue and expenses as contained in the Base Case, are generally reasonable, although a number of these components are based upon projections of the successful implementation of programs and initiatives which have either not yet begun or which are in their early stages of implementation. MPPR/Malcolm Pirnie believes that, if these programs and initiatives are successfully implemented as described throughout the CER, the financial impacts on revenues and expenses are reasonably projected.

4. To properly assess the impact of these initiatives and programs, PRASA developed an Alternate Case to demonstrate the effects on future performance if these initiatives and programs require additional time for implementation or are less successful than anticipated. MPPR/Malcolm Pirnie has reviewed the assumptions in the Alternate Case and the results of the modifications as described in Section 7.8 and find that these assumptions and their potential impact on future financial performance are also reasonable.

PUERTO RICO AQUEDUCT AND SEWER AUTHORITY **EXHIBIT 1**
Water and Sewer System Page 1
Forecast of Financial Results of Operations (in Thousands)

MANAGEMENT'S BASE CASE

		FY 2007 Unaudited	FY 2008 Forecasted	FY 2009 Projected	FY 2010 Projected	FY 2011 Projected	FY 2012 Projected	FY 2013 Projected	FY 2014 Projected	FY 2015 Projected	FY 2016 Projected	FY 2017 Projected
1	**RATE REVENUES**											
2	Base Fee and Service Charges	$ 786,924	$ 775,000	$ 775,000	$ 775,000	$ 775,000	$ 775,000	$ 775,000	$ 775,000	$ 775,000	$ 775,000	$ 775,000
3	Average Annual Growth	-	7,750	15,578	23,483	31,468	39,533	47,678	55,905	64,214	72,606	81,082
4	Rate Increases	-	-	-	-	-	-	-	-	43,230	90,064	137,275
5	Rate Adjustments (1)	-	-	-	35,576	73,109	112,690	154,415	198,384	201,537	201,537	201,537
6	Operational Initiatives	-	3,875	11,625	34,875	38,750	40,688	42,625	44,563	46,500	48,438	50,375
7	Reserve for Uncollectible Accounts	(39,346)	(52,468)	(50,138)	(51,875)	(53,538)	(55,074)	(56,594)	(58,095)	(59,576)	(62,589)	(65,626)
8	Collection Lag	(19,000)	-	-	-	-	-	-	-	-	-	-
9	Actual Collections Adjustment	(40,000)	15,000	-	-	-	-	-	-	-	-	-
10	Subsidy	(2,500)	(3,300)	(3,630)	(3,993)	(4,392)	(4,832)	(5,315)	(5,846)	(6,431)	(7,074)	(7,781)
11	Other Income	12,576	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000
12	Special Assessments	14,588	15,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
13	Interest Income	-	1,102	5,070	6,209	7,110	8,815	9,701	10,956	12,467	13,848	14,814
14	**Total Operating Revenues, Net**	**$ 713,242**	**$ 774,959**	**$ 786,505**	**$ 852,275**	**$ 900,506**	**$ 949,819**	**$ 1,000,510**	**$ 1,053,866**	**$ 1,109,941**	**$ 1,164,830**	**$ 1,219,676**
15												
16	**OPERATING EXPENSES**											
17	Payroll and Related	$ 320,698	$ 327,633	$ 338,433	$ 346,138	$ 352,852	$ 358,492	$ 371,216	$ 384,360	$ 397,935	$ 411,954	$ 426,510
18	Electric Power	110,830	114,709	117,003	119,343	121,730	124,165	126,648	129,181	131,765	134,400	137,088
19	Chemicals	28,691	28,977	29,267	30,292	31,352	32,449	33,585	34,760	35,977	37,236	38,539
20	Superaqueduct Service Contract	20,557	21,000	21,686	22,354	23,057	23,795	24,569	25,380	26,230	27,120	28,039
21	Insurance	12,676	14,050	14,331	14,618	14,910	15,208	15,512	15,823	16,139	16,462	16,791
22	Other Expenses (contingencies, admin, etc.)	138,791	150,497	154,574	158,766	163,078	167,512	172,073	176,764	181,589	186,551	191,655
23	Capitalized Operating Expenses	(41,096)	(42,696)	(43,894)	(44,948)	(45,954)	(46,905)	(48,334)	(49,807)	(51,326)	(52,892)	(54,510)
24	**Total Operating Expenses**	**$ 591,147**	**$ 614,170**	**$ 631,400**	**$ 646,563**	**$ 661,025**	**$ 674,715**	**$ 695,269**	**$ 716,461**	**$ 738,309**	**$ 760,831**	**$ 784,112**
25												
26	**NET REVENUES AVAILABLE FOR DEBT SERVICE**	**$ 122,095**	**$ 160,789**	**$ 155,104**	**$ 205,712**	**$ 239,481**	**$ 275,104**	**$ 305,240**	**$ 337,405**	**$ 371,632**	**$ 403,999**	**$ 435,564**
27												
28	**DEBT SERVICE**											
29	1) Senior Bonds (2)	$ 14,096	$ 35,346	$ 48,569	$ 97,442	$ 121,952	$ 188,782	$ 202,719	$ 233,843	$ 263,377	$ 301,718	$ 320,969
30	2) Senior Bond DSRF Replenishment	-	-	-	-	-	-	-	-	-	-	-
31	3) Total Senior Subordinate Bond Debt Service (Local Banks)	13,269	15,903	17,892	17,912	17,934	-	-	-	-	-	-
32	4) Senior Subordinate DSRF Replenishment	-	-	-	-	-	-	-	-	-	-	-
33	5) Total Subordinate Bond Debt Service (New RD & SRF)	-	-	-	-	3,897	7,372	10,407	13,234	16,079	18,924	21,769
34	6) LOC Fees for Operating Reserve Funds	-	-	-	-	-	-	1,325	1,365	1,407	1,450	1,531
35	7) Capital Improvement Fund	-	-	-	-	-	-	-	-	-	-	-
36	8a) Commonwealth Guaranteed (1995 Bonds, Rural, SRF)	54,855	42,755	52,005	59,126	59,109	57,921	57,892	57,904	57,736	56,976	56,756
37	8b) Commonwealth Supported Obligations (SuperAqueduct)	27,203	54,451	27,240	27,237	27,714	13,441	20,273	21,014	21,367	21,749	22,170
38	Total Debt Service	**$ 109,423**	**$ 148,455**	**$ 145,706**	**$ 201,717**	**$ 230,606**	**$ 267,516**	**$ 292,616**	**$ 327,360**	**$ 359,966**	**$ 400,817**	**$ 423,195**
39												
40	**DEBT SERVICE COVERAGE:**											
41												
42	**Senior Debt (Level 1)**	**8.66**	**4.55**	**3.19**	**2.11**	**1.96**	**1.46**	**1.51**	**1.44**	**1.41**	**1.34**	**1.36**
43												
44	**Senior Subordinate Debt (Levels 1-3)**	**4.46**	**3.14**	**2.33**	**1.78**	**1.71**	**1.46**	**1.51**	**1.44**	**1.41**	**1.34**	**1.36**
45												
46	**Subordinate Debt (Levels 1-5)**	**4.46**	**3.14**	**2.33**	**1.78**	**1.67**	**1.40**	**1.43**	**1.37**	**1.33**	**1.26**	**1.27**
47												
48	**System Indebtedness (Levels 1-8a)**	**1.48**	**1.71**	**1.31**	**1.18**	**1.18**	**1.08**	**1.12**	**1.10**	**1.10**	**1.07**	**1.09**
49												
50	**Commonwealth Supported (Levels 1-8b)**	**1.12**	**1.08**	**1.06**	**1.02**	**1.04**	**1.03**	**1.04**	**1.03**	**1.03**	**1.01**	**1.03**
51	**ADDITIONAL BOND TESTS:**											
52												
53	**Net Revenue Estimate / Levels 1-2**	n/a	**135%**	**135%**	**131%**	**145%**	**133%**	**137%**	**133%**	**128%**	**125%**	**126%**
54	**Net Revenue Estimate / Levels 1-4**	n/a	**115%**	**119%**	**118%**	**133%**	**133%**	**137%**	**133%**	**128%**	**125%**	**126%**
55	**Net Revenue Estimate / Levels 1-5**	n/a	**115%**	**119%**	**118%**	**129%**	**128%**	**130%**	**125%**	**121%**	**118%**	**119%**

(1) The Base Annual Coefficient used to calculate the Rate Adjustment was determined based on audited net revenues (revenues less expenses) on accrual basis and debt service on cash basis for FY2007 (the base year).
(2) Debt service is net of the capitalized interest funded from the 2008 Series A Bonds and capitalized interest assumed to be funded for the projected bond issuances.

PUERTO RICO AQUEDUCT AND SEWER AUTHORITY
Water and Sewer System
CIP Uses and Sources of Funds (in Thousands)

EXHIBIT 1
Page 2

MANAGEMENT'S BASE CASE

		FY 2007 Unaudited	FY 2008 Forecasted	FY 2009 Projected	FY 2010 Projected	FY 2011 Projected	FY 2012 Projected	FY 2013 Projected	FY 2014 Projected	FY 2015 Projected	FY 2016 Projected	FY 2017 Projected
1	**CIP - USES OF FUNDS**											
2	Repair & Replacement of Fixed Assets	$ 82,877	$ 42,527	$ 85,864	$ 65,212	$ 63,179	$ 63,555	$ 67,387	$ 70,555	$ 72,490	$ 72,706	$ 72,706
3	CIP Infrastructure Projects	350,716	404,410	360,230	304,799	205,816	163,873	193,670	293,967	357,549	303,643	206,802
4	Recoverable Expenses Capitalized to CIP	41,096	42,696	43,894	44,948	45,954	46,905	48,334	49,807	51,326	52,892	54,510
5	**Total Projected Capital Expenses**	**$ 474,689**	**$ 489,633**	**$ 489,988**	**$ 414,959**	**$ 314,949**	**$ 274,334**	**$ 309,391**	**$ 414,330**	**$ 481,365**	**$ 429,241**	**$ 334,018**
6												
7	**CIP - SOURCES OF FUNDS**											
8	Surplus Cash Available for Capital Projects	8,356	5,829	3,357	3,995	1,553	7,588	6,518	10,045	7,025	3,183	9,196
9	Federal Funds - Federal Matching	4,591	25,305	25,305	9,434	-	-	-	-	-	-	-
10	Federal Funds - Rural Development Bonds	24,023	47,384	47,384	30,945	12,610	13,089	13,089	13,089	13,089	13,089	13,089
11	Federal Funds - State Revolving Funds Borrowings	49,179	67,846	67,846	68,640	44,995	46,705	46,705	46,705	46,705	46,705	46,705
12	BDE Restricted Funds	20,041	-	-	-	-	-	-	-	-	-	-
13	PRIFA Contributions	35,644	88,356	-	-	-	-	-	-	-	-	-
14	Release of BAN Reserve	-	8,063	-	-	-	-	-	-	-	-	-
15	Interim Financings & Future Bond Proceeds	227,736	-	346,096	301,945	255,792	206,952	243,079	344,491	414,546	366,264	265,028
16	Carryover of BAN Proceeds to Future Years	(108,608)	108,608	-	-	-	-	-	-	-	-	-
17	Bond Proceeds	-	88,242	-	-	-	-	-	-	-	-	-
18	Working Capital Line of Credit	-	-	-	-	-	-	-	-	-	-	-
19	Draws on Existing GDB Lines of Credits	213,727	50,000	-	-	-	-	-	-	-	-	-
20	**Total Financing Activity**	**$ 474,689**	**$ 489,633**	**$ 489,988**	**$ 414,959**	**$ 314,949**	**$ 274,334**	**$ 309,391**	**$ 414,330**	**$ 481,365**	**$ 429,241**	**$ 334,018**

PUERTO RICO AQUEDUCT AND SEWER AUTHORITY
Water and Sewer System
Forecast of Financial Results of Operations (in Thousands)

EXHIBIT 2
Page 1

MANAGEMENT'S ALTERNATE CASE

		FY 2007 Unaudited	FY 2008 Forecasted	FY 2009 Projected	FY 2010 Projected	FY 2011 Projected	FY 2012 Projected	FY 2013 Projected	FY 2014 Projected	FY 2015 Projected	FY 2016 Projected	FY 2017 Projected
1	**RATE REVENUES**											
2	Base Fee and Service Charges	$ 786,924	$ 775,000	$ 775,000	$ 775,000	$ 775,000	$ 775,000	$ 775,000	$ 775,000	$ 775,000	$ 775,000	$ 775,000
3	Average Annual Growth	-	7,750	15,578	23,483	31,468	39,533	47,678	55,905	64,214	72,606	81,082
4	Rate Increases	-	-	-	86,964	86,964	86,964	140,266	140,266	152,079	157,059	206,893
5	Rate Adjustments (1)	-	-	-	-	35,932	73,840	73,840	114,183	156,712	201,529	204,743
6	Operational Initiatives	-	3,875	7,750	11,625	15,500	19,375	23,250	27,125	31,000	34,875	34,875
7	Reserve for Uncollectible Accounts	(39,346)	(52,468)	(49,895)	(53,555)	(55,086)	(56,599)	(58,832)	(60,185)	(62,134)	(65,404)	(68,647)
8	Collection Lag	(19,000)	-	-	-	-	-	-	-	-	-	-
9	Actual Collections Adjustment	(40,000)	15,000	-	-	-	-	-	-	-	-	-
10	Subsidy	(2,500)	(3,300)	(3,630)	(3,993)	(4,392)	(4,832)	(5,315)	(5,846)	(6,431)	(7,074)	(7,781)
11	Other Income	12,576	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000
12	Special Assessments	14,588	15,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
13	Interest Income	-	1,102	5,105	6,155	7,063	8,733	9,612	10,864	12,365	13,749	14,735
14	**Total Operating Revenues, Net**	**$ 713,242**	**$ 774,959**	**$ 782,907**	**$ 878,679**	**$ 925,449**	**$ 975,013**	**$ 1,038,499**	**$ 1,090,312**	**$ 1,155,806**	**$ 1,215,340**	**$ 1,273,900**
15												
16	**OPERATING EXPENSES**											
17	Payroll and Related	$ 320,698	$ 327,633	$ 340,053	$ 349,458	$ 357,941	$ 365,402	$ 380,183	$ 395,527	$ 411,456	$ 427,989	$ 445,186
18	Electric Power	110,830	116,150	121,957	128,055	134,458	141,181	148,240	155,652	163,435	171,606	180,187
19	Chemicals	28,691	28,977	29,267	30,731	32,267	33,880	35,575	37,353	39,221	41,182	43,241
20	Superaqueduct Service Contract	20,557	21,000	21,686	22,354	23,057	23,795	24,569	25,380	26,230	27,120	28,039
21	Insurance	12,676	14,050	14,331	14,618	14,910	15,208	15,512	15,823	16,139	16,462	16,791
22	Other Expenses (contingencies, admin, etc.)	138,791	150,497	154,574	158,766	163,078	167,512	172,073	176,764	181,589	186,551	191,655
23	Capitalized Operating Expenses	(41,096)	(42,790)	(44,321)	(45,759)	(47,171)	(48,554)	(50,450)	(52,422)	(54,475)	(56,609)	(58,831)
24	**Total Operating Expenses**	**$ 591,147**	**$ 615,517**	**$ 637,547**	**$ 658,223**	**$ 678,540**	**$ 698,425**	**$ 725,701**	**$ 754,077**	**$ 783,595**	**$ 814,301**	**$ 846,268**
25												
26	**NET REVENUES AVAILABLE FOR DEBT SERVICE**	**$ 122,095**	**$ 159,442**	**$ 145,360**	**$ 220,455**	**$ 246,909**	**$ 276,588**	**$ 312,798**	**$ 336,235**	**$ 372,211**	**$ 401,039**	**$ 427,632**
27												
28	**DEBT SERVICE (Seniority level indicated by number)**											
29	1) Senior Bonds (2)	$ 14,096	$ 35,346	$ 36,873	$ 108,330	$ 122,962	$ 194,831	$ 208,275	$ 231,750	$ 261,206	$ 299,319	$ 318,617
30	2) Senior Bond DSRF Replenishment	-	-	-	-	-	-	-	-	-	-	-
31	3.) Senior Subordinate Debt Service											
32	*Term Loan (Local PR Bank Syndicate) - Principal*	-	-	2,564	2,748	2,944	-	-	-	-	-	-
33	*Term Loan (Local PR Bank Syndicate) - Interest*	13,269	15,903	15,328	15,164	14,990	-	-	-	-	-	-
31	3) Total Senior Subordinate Bond Debt Service (Local Banks)	13,269	15,903	17,892	17,912	17,934	-	-	-	-	-	-
32	4) Senior Subordinate DSRF Replenishment	-	-	-	-	-	-	-	-	-	-	-
33	5) Total Subordinate Bond Debt Service (New RD & SRF)	-	-	-	-	3,897	7,372	10,407	13,234	16,079	18,924	21,769
34	6) LOC Fees for Operating Reserve Funds	-	-	-	-	-	-	1,395	1,449	1,506	1,565	1,626
35	7) Capital Improvement Fund	-	-	-	-	-	-	-	-	-	-	-
36	8a) Commonwealth Guaranteed (1995 Bonds, Rural, SRF)	54,855	42,755	52,005	59,126	59,109	57,921	57,892	57,904	57,736	56,976	56,756
37	8b) Commonwealth Supported Obligations (SuperAqueduct)	27,203	54,451	27,240	27,237	27,714	13,441	20,273	21,014	21,367	21,749	22,170
38	Total Debt Service	**$ 109,423**	**$ 148,455**	**$ 134,010**	**$ 212,605**	**$ 231,616**	**$ 273,565**	**$ 298,242**	**$ 325,351**	**$ 357,894**	**$ 398,533**	**$ 420,938**
39												
40	**DEBT SERVICE COVERAGE:**											
41												
42	**Senior Debt (Level 1)**	**8.66**	**4.51**	**3.94**	**2.04**	**2.01**	**1.42**	**1.50**	**1.45**	**1.42**	**1.34**	**1.34**
43												
44	**Senior Subordinate Debt (Levels 1-3)**	**4.46**	**3.11**	**2.65**	**1.75**	**1.75**	**1.42**	**1.50**	**1.45**	**1.42**	**1.34**	**1.34**
45												
46	**Subordinate Debt (Levels 1-5)**	**4.46**	**3.11**	**2.65**	**1.75**	**1.71**	**1.37**	**1.43**	**1.37**	**1.34**	**1.26**	**1.26**
47												
48	**System Indebtedness (Levels 1-8a)**	**1.48**	**1.70**	**1.36**	**1.19**	**1.21**	**1.06**	**1.13**	**1.10**	**1.11**	**1.06**	**1.07**
49												
50	**Commonwealth Supported (Levels 1-8b)**	**1.12**	**1.07**	**1.08**	**1.04**	**1.07**	**1.01**	**1.05**	**1.03**	**1.04**	**1.01**	**1.02**
51	**ADDITIONAL BOND TESTS:**											
52												
53	**Net Revenue Estimate / Levels 1-2**	n/a	**135%**	**133%**	**160%**	**154%**	**137%**	**144%**	**135%**	**132%**	**127%**	**128%**
54	**Net Revenue Estimate / Levels 1-4**	n/a	**115%**	**117%**	**144%**	**141%**	**137%**	**144%**	**135%**	**132%**	**127%**	**128%**
55	**Net Revenue Estimate / Levels 1-5**	n/a	**115%**	**117%**	**144%**	**137%**	**131%**	**137%**	**128%**	**124%**	**120%**	**120%**

(1) The Base Annual Coefficient used to calculate the Rate Adjustment was determined based on audited net revenues (revenues less expenses) on accrual basis and debt service on cash basis for FY2007 (the base year).
(2) Debt service is net of the capitalized interest funded from the 2008 Series A Bonds and capitalized interest assumed to be funded for the projected bond issuances.

PUERTO RICO AQUEDUCT AND SEWER AUTHORITY
Water and Sewer System
CIP Uses and Sources of Funds (in Thousands)

EXHIBIT 2
Page 2

MANAGEMENT'S ALTERNATE CASE

		FY 2007 Unaudited	FY 2008 Forecasted	FY 2009 Projected	FY 2010 Projected	FY 2011 Projected	FY 2012 Projected	FY 2013 Projected	FY 2014 Projected	FY 2015 Projected	FY 2016 Projected	FY 2017 Projected
1	**CIP - USES OF FUNDS**											
2	Repair & Replacement of Fixed Assets	$ 82,877	$ 42,527	$ 85,864	$ 65,212	$ 63,179	$ 63,555	$ 67,387	$ 70,555	$ 72,490	$ 72,706	$ 72,706
3	CIP Infrastructure Projects	350,716	404,316	359,802	303,988	204,599	162,225	191,554	291,352	354,400	299,926	202,481
4	Recoverable Expenses Capitalized to CIP	41,096	42,790	44,321	45,759	47,171	48,554	50,450	52,422	54,475	56,609	58,831
5	**Total Projected Capital Expenses**	**$ 474,688**	**$ 489,633**	**$ 489,987**	**$ 414,959**	**$ 314,949**	**$ 274,334**	**$ 309,391**	**$ 414,330**	**$ 481,365**	**$ 429,241**	**$ 334,018**
6												
7	**CIP - SOURCES OF FUNDS**											
8	Surplus Cash Available for Capital Projects	8,355	5,829	5,308	7,850	7,971	3,023	8,449	10,884	9,677	2,506	3,522
9	Federal Funds - Federal Matching	4,591	25,305	25,305	9,434	-	-	-	-	-	-	-
10	Federal Funds - Rural Development Bonds	24,023	47,384	47,384	30,945	12,610	13,089	13,089	13,089	13,089	13,089	13,089
11	Federal Funds - State Revolving Funds Borrowings	49,179	67,846	67,846	68,640	44,995	46,705	46,705	46,705	46,705	46,705	46,705
12	BDE Restricted Funds	20,041	-	-	-	-	-	-	-	-	-	-
13	PRIFA Contributions	35,644	88,356	-	-	-	-	-	-	-	-	-
14	Release of BAN Reserve	-	8,063	-	-	-	-	-	-	-	-	-
15	Interim Financings & Future Bond Proceeds	227,736	-	344,145	298,091	249,373	211,516	241,148	343,652	411,895	366,941	270,702
16	Carryover of BAN Proceeds to Future Years	(108,608)	108,608	-	-	-	-	-	-	-	-	-
17	Bond Proceeds	-	88,242	-	-	-	-	-	-	-	-	-
18	Working Capital Line of Credit	-	-	-	-	-	-	-	-	-	-	-
19	Draws on Existing GDB Lines of Credits	213,727	50,000	-	-	-	-	-	-	-	-	-
20	**Total Financing Activity**	**$ 474,688**	**$ 489,633**	**$ 489,987**	**$ 414,959**	**$ 314,949**	**$ 274,334**	**$ 309,391**	**$ 414,330**	**$ 481,365**	**$ 429,241**	**$ 334,018**

8. Conclusions/Professional Opinion

8.1. Considerations and Assumptions

In preparation of this report and the conclusions contained herein, MPPR/Malcolm Pirnie has relied on certain assumptions and information provided by PRASA with respect to the conditions which may exist or events which may occur in the future. MPPR/Malcolm Pirnie believes the information and assumptions are reasonable, but has not independently verified information provided by PRASA and others. To the extent that actual future conditions differ from those assumed herein or provided to us by others, the actual results will vary from those forecast.

In the preparation of this report, MPPR/Malcolm Pirnie has made a number of principal considerations and assumptions (as provided throughout this report); some of the most notable are as follows:

1. MPPR/Malcolm Pirnie has made no determination as to the validity and enforceability of any contracts, agreement, existing law, rule, or regulation applicable to PRASA and its operations. However, for purposes of this report, MPPR/Malcolm Pirnie has assumed that all such contracts, agreements, laws, rules and regulations will be fully enforceable in accordance with their terms.
2. PRASA will generally continue the current policies of employing qualified and competent personnel; properly operating and maintaining the System in accordance with generally accepted industry practices; and of operating the System in a prudent and sound businesslike manner.
3. The proposed CIP reflects the general needs of the System, and the CIP will be largely implemented as planned and reflected in this report.
4. PRASA will implement the rate increases and initiatives described in this report in order to achieve increases in revenue and to manage expenses as presented in the 10-year forecast period. If additional funds are required for the management, operation, and maintenance of the System, PRASA will either seek the necessary rate increases to increase revenue or embark upon cost reduction measures, such as reducing non-essential programs to cover these unforeseen expenses. Unforeseen expenses that are not currently anticipated may result from a change in law, uninsured catastrophic event, previously unidentified capital improvements, unanticipated increases in utilities and chemicals, deferred capital improvements that must be accelerated, or currently undefined or unanticipated additional regulatory enforcement actions.

8.2. Conclusions

Set forth below are the principal opinions which MPPR/Malcolm Pirnie has reached regarding the review of the PRASA water and wastewater system and its two alternate financial forecasts. For a complete understanding of the assumptions upon which these opinions are based, this report should be read in its entirety.

1. Although the size and scale of PRASA is rather unique compared to most water and wastewater utilities in the United States, the current PRASA organization has many characteristics that are similar to these utilities. All of the components necessary to operate a well-performing utility are found in PRASA's organization. The objectives and strategies developed and currently being implemented by the new management team to address historical problems and issues are appropriate and a positive step towards achieving PRASA's goal of being a world-class utility.
2. Although some individual facilities have staffing shortages, PRASA's overall staff levels have been historically high compared to industry standards. Through the planned closure of a number of older treatment plants and consolidation to regional treatment plants, it is expected that PRASA will be able to maintain or possibly reduce the existing staffing levels. Currently PRASA has sufficient staff to operate and maintain the System.
3. PRASA is continuing to improve the quality of its professional staff and has been successful in attracting well-qualified personnel from the private sector. To improve its recruitment efforts and attract and retain top quality professional staff, PRASA is providing comprehensive benefit packages and exceptions to its official salary scale. With the continuation of these practices, PRASA is continuing to fill key management positions with qualified personnel.
4. PRASA's staff needs additional training to improve effectiveness and increase safe work practices. PRASA recognizes this need and has recently implemented a new comprehensive training program which provided an average of 16 hours of training per employee in FY2007 compared to an average of 3 hours per employee in FY2005. As this program continues, the capabilities and performance of staff working at PRASA is expected to improve over time.
5. Although historically droughts are uncommon in Puerto Rico, much of the island has experienced drought conditions throughout 2007. In 1994, drought conditions required water rationing and reduced water sales. Since that time, PRASA has constructed and continues to construct new reservoirs and WTPs to supplement its water supply system, and the 2007 water levels in its major reservoirs have remained significantly above the levels in 1994. The construction and operation of the Superaqueduct system, which was implemented after the 1994 drought, significantly mitigates PRASA's exposure to droughts in the Metro Region. Although an extended period of drought could again require water rationing, based on the information

available and reviewed during the investigation period, the water supply system generally provides adequate water supply.

6. PRASA's amount of unaccounted for potable water production is very high (approximately 62% of the estimated water produced in FY2007 was not sold to customers). However, the information used to calculate unaccounted for water is not entirely reliable given both the lack of existing or reliable meters at water production facilities (almost half of WTPs and all wells lack adequate meters) and the age and condition of customer meters. Nonetheless, the significant amount of unaccounted for water illustrates a potential opportunity available to increase revenues and decrease expenses as a result of the initiatives to reduce unaccounted for water. It also supports the need, as proposed by PRASA, to embark on aggressive meter replacement programs at both the source and usage locations. PRASA has developed several initiatives to reduce unaccounted for water and has demonstrated a commitment to making future reductions in the amount of unaccounted for water. Successful implementation of PRASA's planned initiatives to reduce unaccounted for water levels is critical to PRASA's effective management of the System. Unaccounted for water levels are expected to remain above typical industry levels over the forecast period.
7. The condition of the facilities visited varied from new to those requiring significant capital upgrades. Certain facilities are operating out of compliance with discharge permit limits and drinking water standards. Despite numerous compliance problems, the facilities are generally producing and delivering potable water and conveying and treating wastewater to some level of competency. The condition of many facilities is not entirely unexpected due to insufficient commitment of capital and operational resources over the years. PRASA demonstrates a thorough understanding of the System shortcomings. The planned CIP along with the O&M initiatives are generally in alignment with the System needs. Review of PRASA's CIP showed that all of the WTPs and WWTPs that were considered unacceptable in terms of compliance currently have CIP projects identified to either rehabilitate or close the facility, thus addressing existing compliance problems. Once implemented as planned, these initiatives are expected to result in significant improvement in the performance of the System, including substantial advances towards complying with regulatory requirements.
8. PRASA's CIP addresses the requirements of the current Consent Decrees with the USEPA and PRDOH. However, some of the projects already constructed, such as new sludge treatment systems, are not operating in compliance with permit limits. Additional assessments and a combination of capital and operational improvements are expected to be required to bring these facilities into compliance. PRASA is expected to be addressing the sludge treatment systems in an upcoming consent decree with the USEPA.
9. Given the age of many components of the System, it will be necessary for PRASA to maintain a commitment to implement its new preventive maintenance initiative (the

IPMP) and continue focused corrective maintenance, repair, and replacement in order to continue to maintain and improve the condition of the System and provide a program for the long-term preservation of the System assets. PRASA has included in its CIP provisions for implementing the IPMP.

10. PRASA's recent annual rate of pipeline renewal and replacement is 1.6% of the total system (based on lengths of existing pipelines recorded in PRASA's GIS). Coupled with the recent sewer lining work, this translates to a complete system renewal in approximately 61 years if the current renewal and replacement rate continues. This renewal and replacement rate is generally consistent with industry practices. PRASA reports that these pipe repairs and replacements, coupled with aggressive management of leaks and overflows, have reduced the duration of water main leaks and both frequency and duration of sewer overflows, although levels are still significantly above typical industry standards. Therefore, PRASA will need to continue to provide significant maintenance and repair funding for the water distribution system and the wastewater collection system. PRASA is under a consent order with the USEPA to perform sanitary sewer system evaluations and to develop and implement sanitary sewer system repair plans for its wastewater collection systems. The extent of needed repairs resulting from these evaluations and their associated costs have not yet been determined.

11. The full impact of future regulations on the water treatment and supply system are not known at this time. In some cases, future regulations are expected to require minor process changes (such as moving the point of chlorination within a facility) and in other cases major capital improvements, such as construction of new treatment processes. Although, the existing CIP does not include projects specifically to address future regulations, PRASA is making allowances in its new designs to improve capabilities to meet certain future regulations. As the impact of future regulations becomes more defined, PRASA may need to modify its CIP to accommodate resulting needs.

12. PRASA has developed a thorough and comprehensive financial plan – Management's Base Case – reflecting internally-established goals relating to various initiatives expected to enhance overall financial performance of the organization and to do so within the 4.5% annual revenue increases allowed under Resolution No. 2167.

    However, PRASA recognizes that in the event it is unable to achieve the expected results or that the timing of the initiatives is delayed, or both, it must have a workable plan to maintain its financial integrity. Management's Alternate Case is intended to do this and is based on reasonable assumptions including a revenue increase in FY2010 that is expected to generate revenues sufficient to meet the debt service and related requirements in support of the issuance of new bonds for its infrastructure program.

    Based on a review of the aforementioned, MPPR/Malcolm Pirnie has concluded the following with regard to the PRASA-prepared forecasts covering the ten-year forecast period:

- Both the Base Case and the Alternate Case demonstrate that PRASA can achieve satisfaction of the requirements of the Trust Agreement going forward at rates and charges which appear reasonable and are likely to be sustainable in light of: (i) PRASA's recent experience in implementing rate increases to support System needs, (ii) the services which PRASA provides, (iii) and the obligations of PRASA to attain environmental compliance and maintain and modernize the System.
- Projections of revenues and expenses have been reviewed in comparison with historical data and have been found to be consistent with the stated assumptions.
- Projections of revenue and expenses as contained in the Base Case, are generally reasonable, although a number of these components are based upon projections of the successful implementation of programs and initiatives which have either not yet begun or which are in their early stages of implementation. MPPR/Malcolm Pirnie believes that, if these programs and initiatives are successfully implemented as described throughout the CER, the financial impacts on revenues and expenses are reasonably projected.
- To properly assess the impact of these initiatives and programs, PRASA developed an Alternate Case to demonstrate the effects on future performance if these initiatives and programs require additional time for implementation or are less successful than anticipated. MPPR/Malcolm Pirnie has reviewed the assumptions in the Alternate Case and the results of the modifications as described in Section 7.8 and find that these assumptions and their potential impact on future financial performance are also reasonable.

Respectfully Submitted,

MP ENGINEERS OF PUERTO RICO, P.S.C.

/s/ Guillermo Marxuach, P.E.
President

Appendix A

List of Acronyms

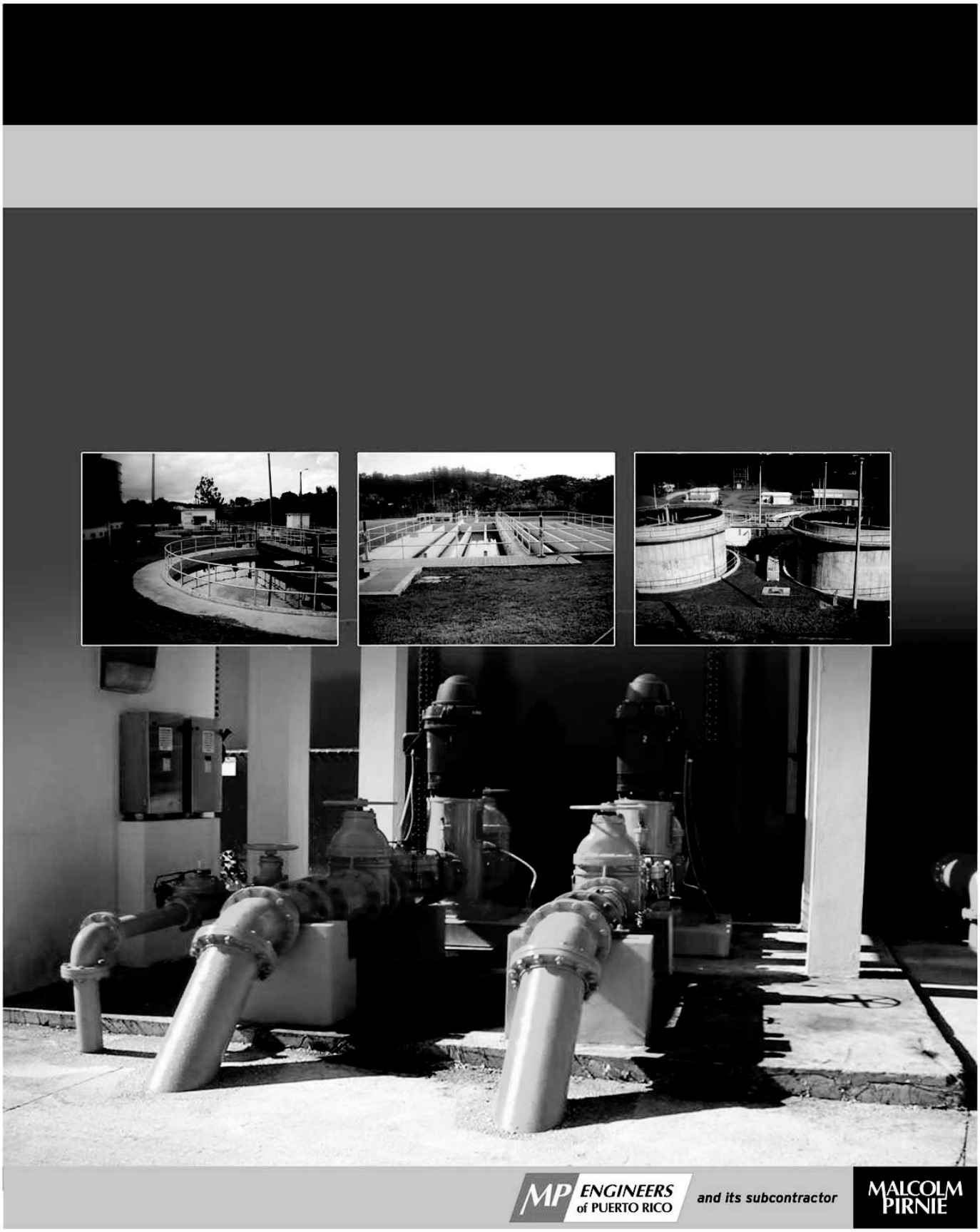
A. List of Acronyms

Capitalized and abbreviated terms contained in this report are defined below. The terms listed below appear in multiple sections of this report, and are thus defined here for reference.

ABT	Additional Bonds Test
AWWA	American Water Works Association
B	Billion
BDE	Economic Development Bank
CAA	Coefficient of Annual Adjustment
CAB	Annual Base Coefficient
CD	Coefficient of Deficiency
CEO	Chief Executive Officer
CER	Consulting Engineer's Report
CIP	Capital Improvement Program
CMMS	Computerized maintenance management system
CPM-MPPR	CPM-MPPR Infrastructure Managers, PSC
CWA	Clean Water Act
CWS	Community water system
DBP	Disinfection byproduct
DBPR	Disinfection Byproduct Rule
DMR	Discharge Monitoring Report
DSC	Debt Service Coverage
EDC	Endocrine Disrupting Compounds
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FmHA	Farmers Home Adminstration
FY	Fiscal Year
GIS	Geographical Information System
gpm	Gallons per minute
GWR	Ground Water rule
HAA	Haloacetic Acid
HIEPAAA	Hermandad Independiente Empleados Profesionales Autoridad de Acueductos y Alcantarillados
IPMP	Integrated Preventive Maintenance Program
LOC	Line of Credit
LRAA	Locational running annual average
LT2 ESWTR	Long Term 2 – Enhanced Surface Water Treatment Rule

M	Million
MCL	Maximum contaminant level
M-DBP	Microbial and Disinfection Byproducts Rules
mgd	Million gallons per day
MPPR	MP Engineers of Puerto Rico, PSC
NDMA	N-nitrosodimethylamine
NPDES	National Pollutant Discharge Elimination System
O&M	Operations and Maintenance
OMP	Operation and Maintenance Plan
PAN	Programa de Asistencia Nutricional
PDSI	Palmer Drought Severity Index
PMC	Program Management Consultant
PMIS	Program Management Information System
PPCP	Pharmaceuticals and personal care products
PRASA	Puerto Rico Aqueduct and Sewer Authority
PRDOH	Puerto Rico Department of Health
PREPA	Puerto Rico Electric Power Authority
PREQB	Puerto Rico Environmental Quality Board
PRIFA	Puerto Rico Infrastructure Financing Authority
PSSSEP	Preliminary Sanitary Sewer System Evaluation Plan
PWS	Public Water Systems
RAA	Running annual average
RFP	Request for Proposal
SDWA	Safe Drinking Water Act
SEP	Supplemental Environmental Project
SOP	Standard operating procedure
SOW	Scope of Work
SRCP	Spill Response and Cleanup Plan
SSSEP	Sanitary Sewer System Evaluation Plan
SSSRP	Sanitary Sewer System Repair Plan
STS	Solids treatment system
SRF	State Revolving Fund
SWTR	Surface Water Treatment Rule
TANF	Programa de Asistencia Temporal para Familias Necesitadas
TOC	Total Organic Carbon
TTHM	Total trihalomethane
UIA-AAA	Unión Independiente Auténtica Autoridad de Acueductos y Alcantarillados
U.S.	United States
USACE	United States Army Corps of Engineers
USGS	United States Geological Survey

WTP	Water treatment plant
WWTP	Wastewater treatment plant


MP ENGINEERS of PUERTO RICO
and its subcontractor
MALCOLM PIRNIE

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APPENDIX III

SUMMARY OF THE TRUST AGREEMENT

The following are brief summaries of certain provisions of the Trust Agreement. Such statements do not purport to be complete or definitive and are qualified in their entirety by reference to the Trust Agreement, copies of which are available from the Development Bank or the Trustee. Capitalized terms not defined in this Official Statement shall have the meanings set forth in the Trust Agreement.

Definition of Certain Terms

"Accreted Value" shall mean, as of any date of computation with respect to any Capital Appreciation Bond, an amount equal to the principal amount of such Bond plus the interest accrued on such Bond from the date of original issuance of such Bond to the periodic date specified in the Supplemental Agreement authorizing such Capital Appreciation Bond on which interest on such Bond is to be compounded (hereinafter, a "Periodic Compounding Date") next preceding the date of computation or the date of computation if a Periodic Compounding Date, such interest to accrue at the interest rate per annum of the Capital Appreciation Bonds set forth in the Supplemental Agreement authorizing such Bonds, compounded periodically on each Periodic Compounding Date. Plus, if such date of computation shall not be a Periodic Compounding Date, a portion of the difference between the Accreted Value as of the immediately preceding Periodic Compounding Date (or the date of original issuance if the date of computation is prior to the first Periodic Compounding Date succeeding the date of original issuance) and the Accreted Value as of the immediately succeeding Periodic Compounding Date, calculated based upon an assumption that, unless otherwise provided in the Supplemental Agreement authorizing such Capital Appreciation Bonds, Accreted Value accrues in equal daily amounts on the basis of a year consisting of twelve 30-day months.

"Annual Budget" shall mean the budget by that name referred to in the section entitled "Annual Budget" below.

"Annual Debt Service" shall mean for any Indebtedness (without duplication) the total payments required to be made for principal of and interest on such Indebtedness, including mandatory sinking fund redemptions, and payments to reimburse Enhancement Facility Providers with respect to such Indebtedness scheduled to come or coming due within a specified Fiscal Year, but excluding any capitalized interest funded from proceeds of Indebtedness. For purposes of calculating such principal and interest, the following assumptions are to be used:

(a) In determining the principal due in a Fiscal Year, payment shall be assumed to be made in accordance with the amortization schedule then in effect for such Indebtedness (unless a different subsection of this definition applies for purposes of determining principal maturities or amortization), including any scheduled redemption of such specified Indebtedness at its then Accreted Value and, for such purpose, the redemption payment shall be deemed a principal payment;

(b) For Tender Indebtedness, the options or obligations of the holders of such Indebtedness to tender the same for purchase or payment prior to their stated maturity or maturities shall be treated as principal on the first date on which such holders may or are required to tender such Indebtedness, except that any such option or obligation shall not be treated as principal if (i) such Indebtedness is rated in at least one of the three highest long-term rating categories or in the two highest short-term rating categories (without regard to any gradations in such categories) by a Rating Agency;

(c) For purposes of computing the Rate Covenant only, if Variable Rate Indebtedness has been outstanding for any period prior to the date of calculation, interest on such Indebtedness shall be calculated using the higher of (i) the average rate or rates which were assumed by the Authority in its Annual Budget corresponding to the period for which such Rate Covenant computation is being made, and (ii) the actual weighted average rate or rates borne by such Indebtedness during such period; provided, however, that if a Hedge Agreement is in effect which provides that the Authority is to pay to the Qualified Counterparty an amount determined with reference to a fixed rate of interest on a notional amount equal to the principal of such Indebtedness, for purposes of

determining the Annual Debt Service on such Variable Rate Indebtedness, it will be deemed to bear interest at such fixed rate of interest or such stated rate in accordance with such Hedge Agreement;

(d) For purposes of determining whether Bonds may be issued in compliance with the respective tests set forth in the Trust Agreement and described under "- Additional Bonds" in the front section of this Official Statement, the rate of interest to be borne by Variable Rate Indebtedness will be deemed to be 120% of the rate quoted in an index generally accepted in the securities industry for securities having ratings and maturity or tender dates comparable to that of the applicable Variable Rate Indebtedness as of the date of issuance thereof; provided, however, that if a Hedge Agreement is in effect which provides that the Authority is to pay to the Qualified Counterparty an amount determined with reference to a fixed rate of interest on a notional amount equal to the principal of such Indebtedness for purposes of determining the Annual Debt Service on such Variable Rate Indebtedness, it will be deemed to bear interest at such fixed rate of interest in accordance with such Hedge Agreement; and provided, further, however, that interest on such Indebtedness that is the subject of a Qualified Swap shall be deemed to be 120% of the higher of (i) the average rate or rates which were assumed by the Authority in its Annual Budget corresponding to the period for which such Rate Covenant computation is being made, and (ii) the actual weighted average rate or rates borne by such Indebtedness during such period;

(e) For purposes of determining the Debt Service Reserve Requirement, if any, attributable to Variable Rate Indebtedness, the rate of interest to be borne by such Variable Rate Indebtedness will be deemed to be 120% of the rate quoted as of its date of issuance in an index generally accepted in the securities industry for securities having ratings and maturity or tender dates comparable to that of such Indebtedness and in no event will Qualified Swaps be considered;

(f) For purposes of determining the annual amount payable in respect of Bond Anticipation Notes and any other Indebtedness designated by the Authority as a Refundable Principal Installment, such Indebtedness that is or would be a Refundable Principal Installment shall be treated on the date of calculation as if (i) from the date of issuance thereof the principal amount of such Indebtedness had been payable as part of equal annual installments of principal and interest over a period extending from the due date thereof through the 30th anniversary of the issue date of such Indebtedness and (ii) interest accrued at a rate equal to the rate quoted in the 30-year revenue bond index, or if different, the revenue bond index most closely related to the term of the Indebtedness, as applicable, published in *The Bond Buyer* no more than two weeks prior to the date of calculation, or if that index is no longer published, another similar index selected by the Authority;

(g) The Accreted Value of Capital Appreciation Bonds or the Appreciated Value of Deferred Income Bonds shall be included in the calculation of Annual Debt Service at the times and in the manner provided in subsection (a) of the section entitled "Special Provisions Relating to Capital Appreciation Bonds and Deferred Income Bonds" below;

(h) Any interest paid or to be paid from a Crossover Escrow Account on Crossover Refunding Bonds and any principal of and premium to be paid from such Escrow Account on Crossover Refunded Bonds shall be excluded from the calculation of Annual Debt Service; and

(i) For any Indebtedness for which a binding commitment, letter of credit or other credit arrangement providing for the extension of such Indebtedness beyond its original maturity date exists, the computation of the Annual Debt Service payable on such Indebtedness shall, at the option of the Authority, be made on the assumption that such Indebtedness will amortize in accordance with such credit arrangement, as long as such credit arrangement is rated in one of the three highest long-term rating categories or in the highest short term rating category (without regard to any gradations within such categories) by a Rating Agency; and

(j) For purposes of computing the Rate Covenant (and whether Bonds may be issued in compliance with respective tests set forth in the Trust Agreement and described under "- Additional Bonds" in the front section of this Official Statement below, any termination payment due under a Qualified Swap or Hedge Agreement shall be included in the calculation of Annual Debt Service (assuming such amount will amortize as required under the applicable Qualified Swap or Hedge Agreement) to the extent such payment is not paid from the proceeds of Bonds or Other System Indebtedness.

"Appreciated Value" shall mean, with respect to any Deferred Income Bond, (i) as of any date of computation prior to the Current Interest Commencement Date, an amount equal to the principal amount of such Bond plus the interest accrued on such Bond from its date of original issuance to the Periodic Compounding Date next preceding the date of computation or the date of computation if a Periodic Compounding Date, such interest to accrue at the interest rate per annum of the Deferred Income Bonds set forth in the Supplemental Agreement authorizing such Bonds, compounded periodically on each Periodic Compounding Date as in such Agreement provided, plus, if such date of computation shall not be a Periodic Compounding Date, a portion of the difference between the Appreciated Value as of the immediately preceding Periodic Compounding Date (or the date of original issuance if the date of computation is prior to the first Periodic Compounding Date succeeding the date of original issuance) and the Appreciated Value as of the immediately succeeding Periodic Compounding Date, calculated based upon an assumption that, unless otherwise provided in the Supplemental Agreement authorizing such Deferred Income Bonds, Appreciated Value accrues in equal daily amounts on the basis of a year consisting of twelve 30-day months and (ii) as of any date of computation on and after the Current Interest Commencement Date, the Appreciated Value on the Current Interest Commencement Date.

"Bond Anticipation Notes" shall mean any obligations issued in anticipation of the issuance of Bonds.

"Bonds" shall mean any bonds, notes or other obligations issued from time to time pursuant to the provisions of the Trust Agreement, including Senior Bonds, Senior Subordinate Bonds, Subordinate Bonds or Bond Anticipation Notes, but not including Other System Indebtedness, Commonwealth Guaranteed Indebtedness or Commonwealth Supported Obligations.

"Business Day" shall mean a day on which banking business is transacted, but not including a Saturday, Sunday or legal holiday, or a day on which banking institutions are authorized by law to close in the city in which the Trustee has its principal corporate trust office or in the Commonwealth of Puerto Rico.

"Calculation Date" shall have the meaning set forth in subsection (a) of the section entitled "Special Provisions Relating to Capital Appreciation Bonds and Deferred Income Bonds" below.

"Capital Appreciation Bonds" shall mean any Bonds issued under the Trust Agreement as to which interest is (i) compounded on the periodic compounding dates that are specified in the Supplemental Agreement authorizing such Capital Appreciation Bonds and (ii) payable only at maturity, earlier redemption or other payment thereof pursuant to the Trust Agreement or such Supplemental Agreement.

"Capital Improvement Fund Requirement" shall mean for each Fiscal Year, an amount equal to the greater of (i) the amount set forth in the Annual Budget for such Fiscal Year and (ii) the amount recommended by the Consulting Engineer.

"Commonwealth Guaranteed Indebtedness" shall mean any obligations of the Authority that are designated as Commonwealth Guaranteed Indebtedness by the Authority and are guaranteed by the Commonwealth of Puerto Rico, including but not limited to the Authority's Puerto Rico Aqueduct and Sewer Authority Bonds, Series 2008, the Authority's Puerto Rico Aqueduct and Sewer Authority Revenue Bonds, USDA/Rural Development Issue (Guaranteed by the Commonwealth of Puerto Rico), the Revenue Bonds of the Authority, FmHA issuances, series K to Z, and all obligations of the Authority to Puerto Rico Infrastructure Financing Authority evidencing revolving loans funded pursuant to the Puerto Rico Water Pollution Control and Drinking Water Treatment Revolving Funds that were created under Act No. 44 of the Legislature of Puerto Rico, approved June 21, 1988, as amended, and Act No. 32 of the Legislature of Puerto Rico, approved July 7, 1997, as amended, and all the loans granted by the Commonwealth Revolving Funds, under the provisions of the Federal Clean Water Act of 1972, as amended and the Federal Safe Drinking Water Act of 1996, as amended,.

"Commonwealth Supported Obligations" shall mean the obligations of the Authority which are the subject of an agreement between the Authority and Government Development Bank for Puerto Rico and are payable solely from appropriations of the Commonwealth of Puerto Rico, including but not limited to the note of the Authority, dated August 2001, relating to North Coast Superaqueduct.

"Consultant" shall mean any qualified and experienced firm or corporation retained by or on behalf of the Authority to perform the acts and duties required of a Consultant under the provisions of the Trust Agreement, which may be, without limitation, a firm of independent certified public accountants, the Consulting Engineer or an independent insurance consultant, and which may include governmental or nongovernmental entities, acceptable to the Consulting Engineer or other Consultants depending on their skill and expertise for the specific acts and duties they are to perform under the provisions of the Trust Agreement.

"Consulting Engineer" shall mean any qualified and experienced engineering firm or corporation retained by the Authority to perform the acts and duties required of the Consulting Engineer under the provisions of the Trust Agreement.

"Cost of Improvements" shall mean the cost of construction of Improvements, including the cost of all labor, materials, machinery and equipment, the cost of all lands, structures, real or personal property, rights, rights-of-way, roads, easements, franchises and interest acquired or used for, or in connection with the Authority, any termination payments payable under any Qualified Swap or Hedge Agreements, the cost of engineering and legal services, the cost of preliminary surveys, plans and specifications, payments with respect to litigation, expenses of administration properly chargeable to such construction, legal, architectural and engineering expenses and fees, the cost of audits, the fees and expenses of Consultants, financing charges, taxes or other governmental charges lawfully assessed during construction, claims arising in connection with construction, premiums on insurance in connection with construction, interest on the Indebtedness or other obligations of the Authority issued to finance Costs of Improvements, during and for a reasonable period after completion of the acquisition, construction, reconstruction, repair, improvement or equipping of the Improvement; the annual fees for any Enhancement Facility and tender agent fees and fees payable for remarketing Indebtedness during such period as may be specified in the resolution of the Board or the Supplemental Agreement authorizing the issuance of such Bonds and all other items of expense not elsewhere in this definition specified, incident to the financing or construction of any Improvements and the placing of the same in operation.

"Costs of Issuance" means the items of cost or expense incurred in connection with the authorization, sale and issuance of Indebtedness, which items of expenses shall include, but not be limited to, document printing, reproduction and execution and delivery costs, filing and recording fees, costs of credit ratings, initial fees and charges of the Trustee or a Qualified Depository, legal fees and charges, professional consultants' fees, fees and charges for execution, authentication, transportation and safekeeping of Bonds, premiums, fees and charges for insurance on Bonds, commitment fees or similar charges relating to an Enhancement Facility, a Qualified Swap or a Hedge Agreement, costs and expenses in connection with the refunding of Indebtedness or other obligations of the Authority, costs and expenses incurred pursuant to a remarketing agreement and other costs, charges and fees, including those of the Authority, in connection with the foregoing.

"Crossover Amount" shall mean the amount of money and Defeasance Obligations on deposit in a Crossover Escrow Account and which, together with investment income thereon, are held as provided in the definition of "Crossover Refunded Bond."

"Crossover Date" shall mean the date on which the Crossover Amount on deposit in a Crossover Escrow Account shall be used to retire all Outstanding Crossover Refunded Bonds for which such Crossover Escrow Account was established.

"Crossover Escrow Deposit Agreement" shall mean an escrow deposit or similar agreement under which a Crossover Escrow Account is created and administered.

"Crossover Refunded Bond" shall mean any Indebtedness deemed to be refunded from the proceeds of Crossover Refunding Bonds. Any Indebtedness shall be deemed to have been refunded from the proceeds of Crossover Refunding Bonds and shall be deemed to be Crossover Refunded Bonds if the Trustee shall have received and shall hold in the applicable Crossover Escrow Account in trust therefor and irrevocably committed thereto.

(a) moneys, together with any amounts described in paragraph (b) below, sufficient, or

(b) Defeasance Obligations, which shall not contain provisions permitting the redemption thereof at the option of the issuer, the principal of and interest on which when due, and without any reinvestment thereof, will provide moneys, together with any amounts described in paragraph (a) above, sufficient:

(i) for the payment of all principal of and premium, if any, on such Crossover Refunded Bonds as the same become due, whether at their maturity or redemption dates or otherwise, as the case may be, or if a default in payment shall have occurred on any maturity or redemption date, then for the payment of all principal of and premium on such Crossover Refunded Bonds to the date of the tender of payment; provided, that if any of those Crossover Refunded Bonds are to be redeemed prior to the maturity thereof, notice of that redemption shall have been duly given or irrevocable provision shall have been duly made for the giving of that notice, and

(ii) for the payment of interest (in whole or in part) on such Crossover Refunding Bonds.

Prior to the Crossover Date, the Crossover Amount may be pledged as security for the Crossover Refunding Bonds, such Crossover Refunded Bonds, or both. The moneys and proceeds of such Defeasance Obligations shall, to the extent needed, be used for the foregoing purposes or used to reimburse an Enhancement Facility Provider for amounts advanced by it for the foregoing purposes.

"Crossover Refunding" shall mean a transaction in which Crossover Refunding Bonds are issued to refund Crossover Refunded Bonds and in which a Crossover Amount is deposited in a Crossover Escrow Account.

"Crossover Refunding Bonds" shall mean Bonds, to the extent that any proceeds from the sale thereof shall, upon deposit in a Crossover Escrow Account, constitute a Crossover Amount.

"Current Expenses" shall mean the reasonable and necessary current expenses, incurred by the Authority in the ordinary course of business, calculated on an accrual basis, of maintaining, repairing and operating the properties constituting the Systems or causing said maintenance, repair and operation, which expenses shall exclude depreciation, reserves for allowances for doubtful accounts and other non-cash reserves or expenses. Notwithstanding any accounting treatment to the contrary, the amount of any termination or similar payment under any interest rate swap or similar hedge agreement shall, if payable by the Authority, not be taken into account in computing Current Expenses to the extent the same is paid by or on behalf of the Authority from the proceeds of any Indebtedness.

"Current Interest Commencement Date" shall mean, with respect to any particular Deferred Income Bonds, the date specified in the Supplemental Agreement authorizing such Deferred Income Bonds (which date must be prior to the maturity date for such Deferred Income Bonds) after which interest accruing on such Deferred Income Bonds shall be payable periodically on dates specified in such Supplemental Agreement with the first such payment date being the first such periodic date immediately succeeding such Current Interest Commencement Date.

"Debt Service Reserve Facility" shall mean (i) any irrevocable, unconditional letter of credit issued by a bank or savings and loan association whose long-term uncollateralized debt obligations are rated in one of the two highest long-term rating categories (without regard to any gradations within such categories) by each Rating Agency, and (ii) any insurance policy providing substantially equivalent liquidity as an instrument described in clause (i) and which is issued by a municipal bond or other insurance company, the obligations insured by which are rated in one of the two highest long-term rating categories (without regard to any gradations within such categories) by each Rating Agency and which is used, to the extent permitted under the Trust Agreement, to fund all or a portion of the applicable Debt Service Reserve Requirement, provided that (x) the term of the Debt Service Reserve Facility is at least 36 months, (y) the only condition to a drawing under the Debt Service Reserve Facility is insufficient amounts in the applicable fund or account held by the Trustee to which such Facility relates when needed to pay debt service on the applicable Bonds or the expiration of such Facility and (z) the provider of the Debt Service Reserve Facility shall notify the Authority and the Trustee at least 24 months prior to the expiration of such Facility.

"Debt Service Reserve Requirement" shall mean with respect to each Account within the Senior Debt Service Reserve Fund, the Senior Subordinate Debt Service Reserve Fund or the Subordinate Debt Service Reserve Fund, as applicable, as of any particular date of computation an amount equal to (i) the amount set forth in the Supplemental Agreement authorizing the issuance of a particular Series of Bonds, or (ii) if not otherwise specified in a Supplemental Agreement authorizing the issuance of a particular Series of Bonds, the lesser of (x) maximum Annual Debt Service on the Outstanding Bonds secured by such Account, payable in any Fiscal Year for the related Bonds, (y) ten percent (10%) of the proceeds of the Outstanding Bonds secured by such Account calculated in accordance the Code and (z) 125% of the average Annual Debt Service for the payment of the principal of and interest on the Outstanding Bonds secured by such Account.

"Deferred Income Bonds" shall mean any Bonds as to which interest accruing prior to the Current Interest Commencement Date is (i) compounded periodically on the dates specified in the Supplemental Agreement authorizing such Deferred Income Bonds and (ii) payable only at redemption or other payment thereof pursuant to such Supplemental Agreement.

"Defeasance Obligations" shall mean any non-callable and non-prepayable obligations described in clauses (a), (b) or (c) of the definition of Investment Obligations.

"Deposit Date" shall mean the last Business Day of each month.

"Enhancement Facility" shall mean any letter of credit, standby purchase agreement, line of credit, policy of bond insurance, surety bond, guarantee or similar instrument, or any other agreement, securing, providing liquidity for, supporting or enhancing outstanding Indebtedness, including any Bond Insurance Policy, Debt Service Reserve Facility, Operating Reserve Facility or any combination of the foregoing, or any agreement relating to the reimbursement thereof whether or not such instrument or agreement has been drawn upon, obtained by the Authority.

"Enhancement Facility Provider" shall mean the provider or issuer of any Enhancement Facility.

"Fiduciary" shall mean (i) the Trsutee, (ii) a Qualified Depository or any other bank or trust company designated as trustee, fiscal agent, administrative agent or other fiduciary for Outstanding Other System Indebtedness and (iii) with respect to the Term Loan, Banco Popular de Puerto Rico, as administrative agent.

"Fiscal Year" shall mean the period commencing on the first day of July of any year and ending on the last day of June of the following year or any other twelve month period designated by the Board.

"Government Certificates" shall mean certificates or other instruments representing proportionate ownership of Government Obligations, which Government Obligations are held by a bank or trust company organized under the laws of the United States of America or any of its states or territories in the capacity of custodian of such certificates or other instruments.

"Government Obligations" shall mean (i) direct obligations of, or obligations the payment of the principal of and interest on which are unconditionally guaranteed by, the United States of America; (ii) Government Certificates, under which the owner of the investment is the real party in interest and has the right to proceed directly and individually against the obligor on the underlying obligations described in said clause (i) and which underlying obligations are not available to satisfy any claim of the custodian or any person claiming through the custodian or to whom the custodian may be obligated; and (iii) evidences of ownership of proportionate interests in future interest or principal payments on obligations specified in clauses (i) and (ii) above held by a bank (including the Trustee) or trust company as custodian, under which the owner of the investment is the real party in interest and has the right to proceed directly and individually against the underlying obligations described in said clauses (i) and (ii) and which underlying obligations are not available to satisfy any claim of the custodian or any person claiming through the custodian or to whom the custodian may be obligated.

"Guaranty Act" shall mean Act No. 45 of the Legislature of Puerto Rico, approved July 28, 1994, as amended.

"Hedge Agreement" shall mean an interest rate swap or other hedging agreement, arrangement or security however denominated, with or guaranteed by a Qualified Counterparty and expressly identified pursuant to its terms as being entered into in connection with and in order to hedge interest rate fluctuations on all or a portion of any Bonds where (i) interest on such Indebtedness or such portion of such Indebtedness is payable at a variable rate of interest for any future period of time or is calculated at a varying rate per annum, and (ii) a fixed rate is specified as payable by the Authority in such agreement, or such Indebtedness, taken together with such agreement, results in a net fixed rate payable by the Authority for such period of time (the "Hedge Fixed Rate"), assuming the Authority and the Qualified Counterparty(ies) with whom the Authority has entered into the agreement make all payments required to be made by the terms of the agreement. If the required rating of a Qualified Counterparty is lowered below the minimum rating level specified in the Trust Agreement for such Qualified Counterparty and collateral has not been posted as required by such Hedge Agreement, such Hedge Agreement shall no longer constitute a "Hedge Agreement" under the Trust Agreement.

"Improvements" shall mean such betterments, renewals and replacements of the Systems or any part thereof, and such additions and extensions thereto, as may be necessary or desirable to keep the same in proper condition for the safe, efficient and economic operation thereof and for the interconnection thereof where feasible to integrate into the Systems any unit or part thereof, and shall include such water and sewer projects as may be authorized to be constructed or acquired under the provisions of the Act, and such betterments, renewals and replacements of such properties and such additions and extensions thereto as may be necessary or desirable for continuous and efficient service by or on behalf of the Authority to the public.

"Indebtedness" shall mean, collectively, Bonds, Other System Indebtedness, Commonwealth Supported Obligations and Commonwealth Guaranteed Indebtedness.

"Insurance Consultant" shall mean any qualified and experienced firm or corporation retained by the Authority to perform the act and duties of an Insurance Consultant required by the provisions of the Trust Agreement.

"Interest Accrual" shall mean for any period the amount of interest on Indebtedness that would accrue during such period if such interest accrued ratably on the basis of a year consisting of twelve (12) thirty-day months. Unless otherwise provided by resolution of the Authority or a Supplemental Agreement, the monthly accrual in respect of interest on Indebtedness shall commence on the later to occur of the date of issue of the applicable Indebtedness and the date that is six months prior to the due date of such interest and shall end on the first day of the month following the relevant Deposit Date. In the case of Variable Rate Indebtedness, (i) other than the Term Loan, the Interest Accrual shall be calculated based on the sum of the interest accrued through the Business Day preceding the relevant Deposit Date and the interest (calculated at the rate on such Indebtedness on the Business Day preceding the Deposit Date plus one percent (1%)) that would accrue on such Indebtedness from the Deposit Date to the later to occur of the first day of the next calendar month and any interest payment date on such Indebtedness occurring prior to the next Deposit Date and (ii) with respect to the Term Loan, the amount accrued during such period as calculated thereunder.

"Investment Obligations" shall mean any of the following, to the extent that the same is legal for the investment of public funds under the laws of the Commonwealth of Puerto Rico:

(a) Government Obligations;

(b) Obligations issued or guaranteed by any of the following:

(i) Federal Home Loan Bank System,
(ii) Export-Import Bank of the United States,
(iii) Federal Financing Bank,
(iv) Government National Mortgage Association,
(v) Federal Home Loan Mortgage Company,
(vi) Federal Housing Administration,
(vii) Private Export Funding Corp.,
(viii) Federal National Mortgage Association,

(ix) Federal Farm Credit Bank,
(x) Resolution Funding Corporation, and
(xi) Rural Economic Community Development Administration (formerly, Farmers Home Administration).

or any indebtedness issued or guaranteed by any instrumentality or agency of the United States;

(c) Refunded municipal obligations rated in the highest long-term rating category by at least one Rating Agency (without regard to any gradations within such category) and meeting the following conditions:

(i) (A) such obligations are not to be redeemed prior to maturity or the trustee therefor has been given irrevocable instructions concerning their call for redemption, and (B) the issuer of such obligations has covenanted not to redeem such obligations other than as set forth in such instructions;

(ii) such obligations are secured by Government Obligations that may be applied only to interest, principal, and premium payments on such obligations;

(iii) the principal of or interest on such Government Obligations (plus any cash held in escrow with respect to such obligations) are sufficient to meet the liabilities of such obligations;

(iv) such Government Obligations are held by an escrow agent or trustee; and

(v) such Government Obligations are not available to satisfy any other claims, including those against said trustee or escrow agent;

(d) Direct and general, long-term obligations of any state of the United States of America, the District of Columbia or the Commonwealth of Puerto Rico (each a "State"), to the payment of which the full faith and credit of such State is pledged and that are rated in any of the three highest long-term rating categories or in the highest short-term rating category (without regard to any gradations within such categories) by at least two Rating Agencies;

(e) Direct and general, short-term obligations of any State, to the payment of which the full faith and credit of such State are pledged and that are rated in either of the two highest short-term rating categories (without regard to any gradations within such categories) by at least two Rating Agencies;

(f) Interest-bearing demand or time deposits with, or interests in money market portfolios issued by, State banks or trust companies, national banking associations or savings and loan associations that are members of the Federal Deposit Insurance Corporation ("FDIC"), including the Trustee or any of its affiliates. Such deposits or interests must be (i) continuously and fully insured by FDIC or (ii) fully secured by Government Obligations or obligations described in clause (b) of this definition ("Clause (b) Securities") or (iii) secured by surety company bonds held by the Trustee which, when executed, shall be for an amount equal to the amount of such interest-bearing demand or time deposits that are not secured by (i) or (ii) above. Such Government Obligations or Clause (b) Securities must have a market value at all times at least equal to the principal amount of the deposits or interests. The Government Obligations or Clause (b) Securities must be held by a third party (who shall not be the provider of the collateral), or by any Federal Reserve Bank or depositary, as custodian for the institution issuing the deposits or interests. Such third party shall have a perfected first lien in the Government Obligations or Clause (b) Securities serving as collateral, and such collateral is to be free from all other third party liens;

(g) Repurchase agreements entered into with a Qualified Counterparty. The repurchase agreement shall be in respect of Government Obligations or Clause (b) Securities. The repurchase agreement securities and, to the extent necessary, Government Obligations or Clause (b) Securities, plus accrued interest, shall be maintained in an amount equal to at least 100% of the amount invested in the repurchase agreements. In addition, the provisions of the repurchase agreement shall meet the following additional criteria;

(A) An Authority designated third party (who shall not be the provider of the collateral selected by the Authority) has possession of the repurchase agreement securities and the Government Obligations or Clause (b) Securities;

(B) Failure by the repurchase agreement provider to cure any deficiency in the requisite collateral levels within two (2) Business Days will require the person having possession of the securities to liquidate the securities immediately; and

(C) The repurchase agreement provider represents to grant the person having possession of the securities a perfected, first priority security interest in the securities;

(h) Money market accounts of any state or federal bank, including the Trustee or any of its affiliates, or bank whose holding parent company is rated in any of the three highest long-term rating categories or the highest short-term rating category (without regard to any gradations within such categories) by at least two Rating Agencies;

(i) Investment agreements the issuer or guarantor of which is a Qualified Counterparty;

(j) Any debt or fixed income security the issuer of which is rated in any of the three highest long-term rating categories or the highest short-term rating category (without regard to any gradations within such categories) by at least two Rating Agencies;

(k) Demand deposits, including interest-bearing money market accounts trust deposits, time deposits or bankers acceptances (in each case having maturities of not more than 360 days) of a domestic bank (including the Trustee or any of its affiliates), including a branch office of a foreign bank, which branch office is located in the United States, provided that such bank at the time of purchase, has a short-term bank deposit rating of "prime-1" or better by Moody's and a rating of "A-1" or better by Standard & Poor's; and

(l) Money market mutual funds, including, without limitation any mutual fund for which the Trustee or any of its affiliates serves as investment manager, administrator, shareholder servicing agent, and/or custodian or sub custodian, notwithstanding that (i) the Trustee or such affiliate receives fees from such funds for services rendered, (ii) the Trustee or such affiliate charges and collects fees for services rendered pursuant to the Trust Agreement which fees are separate from the fees received from such funds, and (iii) services performed for such funds and pursuant to the Trust Agreement may at times duplicate those provided to such funds by the Trustee or such affiliate.

Notwithstanding anything in the Trust Agreement to the contrary, any investment that would, at the time of such investment, be legal for the investment of the public funds under the laws of the Commonwealth of Puerto Rico shall also qualify as an Investment Obligation.

"Net Revenues" shall mean, for any particular period, the amount of the excess of Revenues over Current Expenses for such period.

"Operating Reserve Facility" shall mean any irrevocable, unconditional letter of credit or revolving line of credit issued by (i) Government Development Bank for Puerto Rico or (ii) a bank or savings and loan association whose long-term uncollateralized debt obligations are rated in any of the three highest long-term rating categories or in the two highest short-term rating categories (without regard to any gradations within such categories) by each Rating Agency and which Facility is used, to the extent permitted under the Trust Agreement, to fund all or a portion of the Operating Reserve Requirement.

"Operating Reserve Requirement" shall mean $150,000,000 until March 1, 2013, and thereafter, (i) if there is an Operating Reserve Facility on deposit in the Operating Reserve Fund, shall mean for the term of such Operating Reserve Facility (without regard to any renewal provisions contained therein) an amount equal to at least ninety (90) days of Current Expenses determined on the first day of the Fiscal Year in which such Operating Reserve Facility is delivered or renewed as set forth in the Annual Budget for such Fiscal Year or (iii) if funded

from Revenues, shall mean an amount equal to not less than ninety (90) days of Current Expenses determined annually based on the Current Expenses relating to the Fiscal Year of such calculation as set forth in the Annual Budget for such Fiscal Year.

"Other System Indebtedness" shall mean the Term Loan and any other obligation of the Authority, including Qualified Swaps and Hedge Agreements and any termination payments thereunder but not including Bonds, that the Authority is required, or has elected, to treat as payable on a parity with Bonds with respect to the pledge of Revenues.

"Outstanding" shall mean Indebtedness that has been duly issued and delivered under the Trust Agreement or under other documents and has not been (i) canceled or surrendered to the Trustee or a comparable fiduciary for cancellation or (ii) deemed to have been paid as provided in the section entitled "Discharge of Agreement" below or under similar provisions of such different documents, has not had other obligations issued in exchange therefor or had its principal become due and moneys sufficient for its payment deposited with the Trustee as provided in the Trust Agreement, or otherwise so treated under comparable issuance documents.

In determining whether holders of a requisite aggregate principal amount of the Outstanding Indebtedness have concurred in any request, demand, authorization, direction, notice, consent or waiver under the Trust Agreement or other applicable documents, words referring to or connoting "principal of" or "principal amount of" Outstanding Indebtedness shall include the Accreted Value or similar value of Indebtedness as of the immediately preceding interest compounding or similar date for such Indebtedness. Indebtedness that is owned by or for the benefit of the Authority shall be disregarded and deemed not to be Outstanding for the purpose of any such determination.

"Principal Accrual" shall mean for any period the amount of principal or sinking fund installment on Indebtedness that would accrue during such period if such principal or sinking fund installment accrued ratably on the basis of a year consisting of twelve (12) thirty-day months. Unless otherwise provided by resolution of the Authority or a Supplemental Agreement, the monthly accrual in respect of the principal of Indebtedness or sinking fund installment for a Term Bond shall commence on the first day of the twelfth month preceding the due date of such principal or sinking fund installment and shall end on the first day of the month succeeding the relevant Deposit Date.

"Qualified Counterparty" shall mean (at the time of delivery of the applicable Investment Obligation or the execution of the applicable Hedge Agreement or Qualified Swap) (i) a bank, trust company, savings and loan association, national banking association, insurance company or other financial services company, including the Trustee or any of its affiliates, whose senior long term debt obligations, other senior unsecured long term obligations, financial program rating, counterparty rating or claims paying ability are rated in any of the three highest long-term rating categories (without regard to any gradations within such categories) by a Rating Agency or any institution listed as a primary government securities dealer in the Federal Reserve Bank of New York and (ii) in the case of Hedge Agreements and Qualified Swaps, a person whose obligations are guaranteed by a person whose senior long term debt obligations, other senior unsecured long term obligations, financial program rating, counterparty rating or claims paying ability, are rated in any of the three highest long-term rating categories (without regard to any gradations within such categories) by a Rating Agency, or whose obligation, if any, to make payment to the Authority upon the termination of the subject Hedge Agreement or Qualified Swap is fully collateralized by Investment Obligations described in clauses (a), (b) or (c) of the definition of Investment Obligations; provided, however, that such obligation shall be deemed to be fully collateralized if the Investment Obligations shall have a market value, determined periodically in accordance with such Hedge Agreement or Qualified Swap, that is not less than 100% of the amount of any termination payment. If the required rating of a Qualified Counterparty is lowered below the minimum rating level specified in the Trust Agreement for such Qualified Counterparty and collateral has not been posted as required by such Hedge Agreement, such Qualified Counterparty shall no longer constitute a "Qualified Counterparty" under the Trust Agreement.

"Qualified Depositary" or **"Depositaries"** shall mean one or more banks or trust companies meeting the requirements described in the section entitled "Appointment of Successor Trustee by Bondholders; Temporary Trustee" below and designated or permitted to be designated by the Secretary of the Treasury of the Commonwealth as a depositary for funds of agencies and instrumentalities of the Commonwealth of Puerto Rico, which have been

designated as depositaries of the Authority by resolution of the Board remaining in full force and effect. A certified copy of each resolution of the Board designating a Qualified Depositary or Depositaries shall be filed with the Trustee.

"Qualified Swap" shall mean a contract pursuant to which a Qualified Counterparty has agreed to make payments to the Authority during a particular period equal to the interest payable on specified Bonds or on a specified nominal amount at the actual rate or rates or, if on a nominal amount at a stated rate or rates, payable thereon and, in consideration therefor, the Authority agrees to make payments to the Qualified Counterparty equal to the interest required to be paid on the specified Bonds or stated to be due on the nominal amount during the period calculated as if the specified Indebtedness or nominal amount bore an assumed rate (fixed or variable) of interest specified in the contract.

"Rate Covenant" shall mean the obligation of the Authority to fix, charge, collect and revise rates, fees and other charges for the use of and the services furnished by the Systems sufficient to meet the requirements under the Trust Agreement and as described under "Rate Covenant" in the front section of this Official Statement.

"Rating Agency" or **"Rating Agencies"** shall mean Fitch, Moody's, Standard & Poor's or any other nationally recognized securities rating agency which then maintains a rating on Bonds at the request of the Authority.

"Refundable Principal Installment" shall mean the Term Loan, Bond Anticipation Notes or any other Indebtedness, the principal of which the Authority intends to pay with moneys which are not Revenues, provided that such intent shall have been expressed in the Supplemental Agreement or other document authorizing such Indebtedness and provided further that such Indebtedness shall be a Refundable Principal Installment only through the date which is thirty (30) days prior to the date on which such Indebtedness comes due or such earlier time as the Authority has determined to pay such Indebtedness with moneys which are not Revenues.

"Reserve Determination Date" shall mean (a) each Interest Payment Date for Bonds, or (b) any other date established in writing by an Authorized Representative of the Authority for the valuation of obligations on deposit in any Senior Debt Service Reserve Account or Senior Subordinate Debt Service Reserve Account.

"Revenues" shall mean all moneys received by or on behalf of the Authority, including (i) the moneys derived by or on behalf of the Authority from the sale of water produced, treated or distributed by, or the collection, transmission, treatment or disposal of sewage by the Systems, (ii) any proceeds of use and occupancy insurance on the Systems or any part thereof, (iii) except as provided in the following sentence, any income from the investments made under the Trust Agreement, (iv) except as provided in the following sentence, any governmental grants or appropriations available to pay Current Expenses of the Authority, including grants or appropriations received by the Authority and specifically made for the payments of principal of and interest on obligations of the Authority or for reimbursing the Authority for such payments, (v) any special assessments, including assessments in the nature of impact fees, (vi) amounts, if any, paid from the Rate Stabilization Account into the Deposit Fund in any Fiscal Year minus the amounts, if any, paid from the Deposit Fund into the Rate Stabilization Account during the same Fiscal Year; and (vii) regularly scheduled payments received under any Qualified Swap or Hedge Agreement during such period. In no event shall Revenues include (i) income from the investment of moneys on deposit to the credit of the Construction Fund, proceeds of insurance (except use and occupancy insurance) or condemnation awards (which are required to be deposited directly to the credit of the Capital Improvement Fund), (ii) proceeds of sales of property constituting a part of the Systems (which are required to be deposited directly to the credit of the Capital Improvement Fund), (iii) any amounts received from the Commonwealth of Puerto Rico on account of Commonwealth Guaranteed Indebtedness (which is required to be deposited directly in the Commonwealth Payments Fund) or Commonwealth Supported Obligations (which is required to be deposited in the Commonwealth Payments Fund), (iv) the proceeds of Bonds or other Indebtedness (v) any termination or similar payment under any interest rate swap or similar hedge agreement received by the Authority (which are required to be deposited directly to the credit of the Capital Improvement Fund).

"Senior Indebtedness" shall mean, collectively, Senior Bonds and any Other System Indebtedness secured on a parity therewith.

"Senior Subordinated Indebtedness" shall mean, collectively, Senior Subordinate Bonds and any Other System Indebtedness secured on a parity therewith.

"Subordinated Indebtedness" shall mean, collectively, Subordinate Bonds and any Other System Indebtedness secured on a parity therewith.

"Systems" shall mean collectively, the existing water supply, treatment and distribution system and the existing sewage collection, transmission, treatment and disposal system owned or operated by or on behalf of the Authority, together with all Improvements, and shall include any rights of service, leasehold interests or other contractual rights of the Authority in said Systems and any Improvements.

"Tender Indebtedness" shall mean any Indebtedness a feature of which is an option or obligation on the part of the Holders of such Indebtedness to tender all or a portion of such Indebtedness to a fiduciary for purchase or redemption prior to the stated maturity date of such Indebtedness, which may include Variable Rate Indebtedness with such a feature.

"Term Loan" shall mean that loan made to the Authority pursuant to the Term Loan Agreement, dated as of September 8, 2006, by and among the Authority, Banco Popular de Puerto Rico, as administrative agent, and the other financial institutions which are parties thereto.

"Variable Rate Indebtedness" shall mean any Indebtedness the interest rate on which is not established at the time of incurrence at a fixed or constant rate, provided that (a) the maximum interest rate on such Indebtedness and the maximum rate payable to any Enhancement Facility Provider with respect to such Indebtedness shall be specified at the time of issuance of such Indebtedness; (b) the Enhancement Facility shall cause such Indebtedness to be rated by a Rating Agency in the two highest long-term or one of the two highest short-term rating categories (without regard to any gradations within such categories) of such Rating Agency; (c) any obligation of the Authority to reimburse such Enhancement Facility Provider shall (i) amortize in equal annual installments of principal and interest over a term of no less than the shorter of ten years and stated final maturity of such Variable Rate Indebtedness or (ii) be payable solely from amounts on deposit in the Subordinate Debt Service Fund, and (d) any two or more Series of Bonds that are issued on the same date, the interest on which when such Series are considered in the aggregate shall be a fixed or constant rate, shall not be considered Variable Rate Indebtedness.

Special Provisions Relating to Capital Appreciation Bonds and Deferred Income Bonds.

(a) The Accreted Value of Capital Appreciation Bonds or the Appreciated Value of Deferred Income Bonds becoming due at maturity or by virtue of a sinking fund installment shall be included in the calculations of accrued and unpaid and accruing interest or principal installments made under the definitions of Annual Debt Service only from and after the date (the "Calculation Date") which is one year prior to the date on which such Accreted Value or Appreciated Value, as the case may be, becomes so due, and the principal and interest portions of such Accreted Value or Appreciated Value shall be deemed to accrue in equal daily installments from the Calculation Date to such due date.

(b) For the purposes of (i) receiving payment of the redemption price if a Capital Appreciation Bond is redeemed prior to maturity, or (ii) receiving payment of a Capital Appreciation Bond if the principal of Bonds is declared immediately due and payable following an Event of Default, as provided in the section entitled "Extended Interest Payments" below, or (iii) computing the principal amount of Bonds held by the Holder of a Capital Appreciation Bond in giving to the Authority any notice, consent, request, or demand pursuant to the Trust Agreement for any purpose whatsoever, the principal amount of such Capital Appreciation Bond shall be deemed to be its then current Accredited Value.

(c) For the purposes of (i) receiving payment of the redemption price if a Deferred Income Bond is redeemed prior to maturity, or (ii) receiving payment of a Deferred Income Bond if the principal of Bonds is declared immediately due and payable following an Event of Default, as provided in the section entitled "Extended Interest Payments" below, or (iii) computing the principal amount of Bonds held by the Holder of a Deferred Income Bond in giving to the Authority any notice, consent, request, or demand pursuant to the provisions of the

Trust Agreement for any purpose whatsoever, the principal amount of a such Deferred Income Bond shall be deemed to be its then current Appreciated Value.

Selection of Bonds to be Redeemed.

Unless otherwise required by any Supplemental Agreement, in the event of redemption of less than all the Outstanding Bonds of the same Series and maturity, the particular Bonds or portions thereof to be redeemed shall be selected by the Trustee in such manner as the Trustee in its discretion may deem fair, except that to the extent practicable, the Trustee shall select Bonds for redemption such that no Bond remaining Outstanding shall be of a denomination of less than $5,000. In the event of redemption of less than all the Outstanding Bonds of the same Series stated to mature on different dates, the principal amount of such Series of Bonds to be redeemed shall be applied in any order of maturity of the Outstanding Series of Bonds to be redeemed that the Authority may elect upon receipt of an opinion of Bond Counsel that such redemption would not result in the interest payable on such Bonds being included in gross income for federal income tax purposes to the Holders thereof under the Code. The portion of Bonds of any Series to be redeemed in part shall be in the principal amount of the minimum authorized denomination thereof or some integral multiple thereof and, in selecting Bonds of a particular Series for redemption, the Trustee shall treat each such Bond as representing that number of Bonds of such Series which is obtained by dividing the principal amount of such registered Bond by the minimum denomination (referred to below as a "unit") then issuable rounded down to the integral multiple of such minimum denomination. If it is determined that one or more, but not all, of the units of principal amount represented by any such Bond is to be called for redemption, then, upon notice of intention to redeem such unit or units, the Holder of such Bond shall forthwith surrender such Bond to the Trustee for (a) payment to such Holder of the redemption price of the unit or units of principal amount called for redemption and (b) delivery to such Holder of a new Bond or Bonds of such Series in the aggregate unpaid principal amount of the unredeemed balance of the principal amount of such Bond. New Bonds of the same Series and maturity representing the unredeemed balance of the principal amount of such Bond shall be issued to the registered Holder thereof, without charge therefor. If the Holder of any such Bond of a denomination greater than a unit shall fail to present such Bond to the Trustee for payment and exchange as aforesaid, such Bond shall, nevertheless, become due and payable on the date fixed for redemption to the extent of the unit or units of principal amount called for redemption (and to that extent only).

Purchase of Bonds.

The Authority may purchase or cause to be purchased any Bonds of any particular Series or maturity in lieu of redemption of such Bonds (in which event any Bonds so purchased shall be cancelled and shall cease to bear interest pursuant to the provisions of the Trust Agreement) or for any other purpose pursuant to written instructions given by the Authority to the Trustee. Such purchases shall be made in such manner as directed by the Authority. The Authority or the Trustee shall pay the purchase price of such Bonds together with accrued interest thereon from such funds as may be available therefor pursuant to the Trust Agreement, any Supplemental Agreement, or as otherwise may be made available by the Authority.

Senior Bond Fund.

(a) Deposits to the Senior Bond Fund. In accordance with the provisions of the Trust Agreement relating to Funds and Accounts (except that no distinction or preference shall exist in making the following deposits into the Senior Interest Account, the Senior Principal Account or the Senior Sinking Fund Account of the Senior Bond Fund, in each case, such accounts being on a parity with each other as to the deposits therein under the provisions of the Trust Agreement relating to Funds and Accounts), on each Deposit Date, the Trustee shall make the following deposits:

(1) to the subaccounts established for each issue of Senior Indebtedness in the Senior Interest Account, (i) an amount equal to the Interest Accrual on all the outstanding Senior Indebtedness to and including the last day of the next calendar month; (ii) the amount of any payments or reimbursements due in the next ensuing month to each Enhancement Facility Provider to the extent such payment or reimbursement obligation constitutes Senior Indebtedness under the Trust Agreement; and (iii) the amount of any payments due in the next ensuing month under any Hedge Agreement or Qualified Swap secured on a parity with Senior Indebtedness;

provided, further, that any such deposits shall be adjusted to give credit for any other available money then in such interest account or subaccount or otherwise available and designated to be used for such purpose; and

(2) to the subaccounts established for each issue of Senior Indebtedness in the Senior Principal Account and Senior Sinking Fund Account, an amount equal to the Principal Accrual on the outstanding Senior Indebtedness to and including the last day of the next calendar month; provided, however, such deposits shall be adjusted to give credit for any other available money then in the principal or sinking fund account or subaccount or otherwise available and designated to be used for such purpose.

(b) Use of Moneys in Senior Bond Fund. (1) On or before each Interest Payment Date, the Trustee shall pay to the Holders of Senior Indebtedness from funds on deposit in the Senior Interest Account, the amount required for the payment of the interest becoming due on Senior Indebtedness on such Interest Payment Date; provided, however, if the Trustee is not the Fiduciary for such Senior Indebtedness, the Trustee will withdraw from the Senior Interest Account and transfer to the Fiduciary therefor not later than one (1) Business Day prior to the applicable Interest Payment Date the amount required for the payment of interest becoming due on the Senior Indebtedness for which such Fiduciary so serves. On or before the date on which (x) regularly scheduled payments under a Hedge Agreement or Qualified Swap are due or (y) payments or reimbursements to an Enhancement Facility Provider are to be made, in each case relating to Senior Indebtedness, the Trustee shall pay to the persons entitled thereto from funds on deposit in the Senior Interest Account the corresponding amounts owing to such persons on such date.

(2) On or before each payment date, the Trustee shall pay to the Holders of Senior Indebtedness from funds on deposit in the Senior Principal Account, the amount required for the payment of principal becoming due on and any termination payment due in respect of Senior Indebtedness on such payment date and with respect to Senior Indebtedness as to which the Trustee is not the Fiduciary therefor, the Trustee shall pay to each such Fiduciary not later than one (1) Business Day prior to the applicable payment date from funds on deposit in the Senior Principal Account the corresponding amounts required for the payment of principal becoming due on and any termination payment due in respect of such Senior Indebtedness.

(3) On or before each mandatory redemption date, the Trustee shall pay to the Holders of Senior Indebtedness from funds on deposit in the Senior Sinking Fund Account, the amount required for the payment of mandatory sinking fund installments becoming due on Senior Indebtedness on such mandatory redemption payment date and with respect to Senior Indebtedness as to which the Trustee is not the Fiduciary therefor, the Trustee shall pay to each such Fiduciary not later than one (1) Business Day prior to the applicable mandatory redemption payment date from funds on deposit in the Senior Sinking Fund Account the corresponding amounts required for the payment of mandatory sinking fund installments becoming due on such Senior Indebtedness.

(4) Any amount in the Senior Sinking Fund Account not applied in accordance with subsection (c) below to the purchase of Senior Indebtedness by the forty-fifth (45th) day prior to the next date on which such Senior Indebtedness is so redeemable shall be applied to the redemption of such Senior Indebtedness on such redemption date. Any amounts deposited in the Senior Sinking Fund Account and not applied within twelve (12) months of their date of deposit to the purchase or redemption of Senior Indebtedness (except if held in accordance with the section entitled "Discharge of Agreement" below) shall be transferred to the Senior Interest Account. The Senior Indebtedness to be purchased or redeemed shall be selected by the Trustee in the manner provided in the section entitled "Selection of Bonds to be Redeemed" above. Amounts in the Senior Sinking Fund Account to be applied to the redemption of Senior Indebtedness shall be paid to the respective Trustee or Fiduciary on or before the redemption date and applied by them on such redemption date to the payment of the redemption price of the Senior Indebtedness being redeemed.

(c) Notwithstanding the provisions of clause (3) of paragraph (b) of this section, the Authority may, at any time but in no event less than forty-five (45) days prior to the date on which a mandatory sinking fund installment is scheduled to be due on Senior Indebtedness, direct the Trustee or Fiduciary to purchase, with money on deposit in the Senior Sinking Fund Account, at a price not in excess of par plus interest accrued and unpaid to the date of such purchase, term bonds to be redeemed on such date. At the direction of the Authority, any term bond so purchased may be cancelled upon receipt thereof by the Trustee or the Fiduciary and evidence of such

cancellation shall be given to the Authority. The principal amount of each term bond so canceled shall be credited against the sinking fund installment due on such date as long as such term bond is canceled by the Trustee or Fiduciary prior to the date on which notice of redemption is given.

(d) In the event the amount on deposit in the Senior Interest Account on any Interest Payment Date exceeds the amount required to pay interest on the Senior Indebtedness on such Interest Payment Date, the Authority shall, if the amount on deposit in any Senior Debt Service Reserve Account is less than the applicable Debt Service Reserve Requirement, instruct the Trustee to transfer such excess to such Senior Debt Service Reserve Account to the extent of such deficiency, and otherwise retain any remaining excess in the Senior Interest Account or instruct the Trustee to transfer any such remaining excess to the Senior Principal Account or Senior Sinking Fund Account to be credited against subsequent required deposits thereto, as determined by the Authority.

(e) In the event the amount on deposit in the Senior Principal Account or Senior Sinking Fund Account on any principal or mandatory redemption payment date exceeds the amount required on such date to pay Senior Indebtedness at maturity or pursuant to mandatory sinking fund requirements, the Authority shall, if the amount on deposit in any Senior Debt Service Reserve Account is less than the applicable Debt Service Reserve Requirement, instruct the Trustee to transfer such excess to such Senior Debt Service Reserve Account to the extent of such deficiency, and otherwise retain such excess in the Senior Principal Account or Senior Sinking Fund Account, as the case may be, or instruct the Trustee to transfer such excess to the Senior Interest Account to be credited against subsequent required deposits thereto, as determined by the Authority.

(f) In the event the balance on deposit in the Senior Principal Account, the Senior Sinking Fund Account or the Senior Interest Account is insufficient for the purposes thereof, the Trustee shall deposit in such Accounts such amounts as may be necessary therefor first, from other legally available funds not subject to the lien of the Trust Agreement; second, from the Surplus Fund; third, from the Commonwealth Payments Fund; fourth, from the Capital Improvement Fund; fifth, from the Operating Reserve Fund and last, from the applicable Senior Debt Service Reserve Account pursuant to the section entitled "Senior Debt Service Reserve Fund" below.

Senior Debt Service Reserve Fund.

(a) The Trustee shall deposit to each Account in the Senior Debt Service Reserve Fund (i) on each Deposit Date, an amount equal to (x) 1/60 of the amount (or such greater amount specified in the Supplemental Agreement authorizing any Senior Bonds), if any, necessary to restore the amount on deposit therein to the related Debt Service Reserve Requirement in the event of an increase in the applicable Debt Service Reserve Requirement upon the issuance of additional Senior Bonds, and (y) except as provided in paragraph (c) below, 1/12 of the amount, if any, necessary to restore the amount on deposit therein to the related Debt Service Reserve Requirement in the event of any other deficiency and (ii) the amount of proceeds of any Senior Bonds as required by the applicable Supplemental Agreement.

(b) Amounts in each Account in the Senior Debt Service Reserve Fund shall be used to pay debt service on the related Series of Senior Bonds on the dates such debt service is due when insufficient funds for that purpose are available in the Senior Bond Fund, after making any transfers pursuant to subsection (f) of the section entitled "Senior Bond Fund" above and all cash and investments in an Account in the Senior Debt Service Reserve Fund shall be used, together with other amounts available for such purpose under the Trust Agreement, to provide for payment in full of the related Series of Senior Bonds when the aggregate of such amounts is sufficient for such purpose. Amounts in each Account of the Senior Debt Service Reserve Fund shall be pledged to the Holders of the applicable Series of Senior Bonds to which such Account relates. In no event shall amounts on deposit in the Senior Debt Service Reserve Fund be used to pay principal of, interest on, or any other amounts due with respect, to Other System Indebtedness.

(c) In lieu of or in addition to cash or investments, at any time the Authority may cause to be deposited to the credit of any Senior Debt Service Reserve Account, a Debt Service Reserve Facility in the stated amount equal to all or a portion of the applicable Debt Service Reserve Requirement, irrevocably payable to the Trustee, as beneficiary for the Holders of the Senior Bonds to which such Account relates. If (x) the Authority receives an expiration notice and the applicable Enhancement Facility Provider does not extend the expiration date

of a Debt Service Reserve Facility, (y) the Authority receives notice of the termination of a Debt Service Reserve Facility, or (z) the Authority receives notice that the applicable Enhancement Facility Provider of a Debt Service Reserve Facility no longer has the required credit rating, the Authority immediately shall (i) provide a substitute Debt Service Reserve Facility, (ii) deposit a sum equal to the Debt Service Reserve Requirement to the credit of the Senior Debt Service Reserve Account to which such Debt Service Reserve Facility relates (A) in equal monthly installments over the next succeeding 12 months in the case of receipt of an expiration notice, (B) prior to the termination date in the case of receipt of a termination notice, or (C) immediately in the case of such reduction in credit rating, or (iii) instruct the Trustee to draw on such Debt Service Reserve Facility (A) 12 months prior to expiration of the Debt Service Reserve Facility in the case of receipt of an expiration notice, (B) prior to the termination date in the case of receipt of a termination notice, or (C) immediately in the case of such reduction in credit rating and deposit the proceeds of such drawing to the credit of the Senior Debt Service Reserve Account to which such Debt Service Reserve Facility relates.

If a disbursement is made pursuant to a Debt Service Reserve Facility, the Authority shall either (i) reinstate such Facility in full or (ii) deposit to the credit of the Senior Debt Service Reserve Account a sum equal to the amount of the disbursement made under such Facility in accordance with its provisions.

(d) On or within five days after each Reserve Determination Date, the Trustee shall determine whether the balance on deposit in each Senior Debt Service Reserve Account was, as of the Reserve Determination Date, at least equal to the applicable Debt Service Reserve Requirement. In making such determination, any obligations in a Senior Debt Service Reserve Account shall be valued in accordance with the section entitled "Investment of Funds" below.

In the event the amount on deposit in a Senior Debt Service Reserve Account exceeds the applicable Debt Service Reserve Requirement, the Trustee shall transfer such excess as directed in writing by an Authorized Representative of the Authority, such direction to be accompanied by an Opinion of Bond Counsel that such transfer will not adversely affect the exclusion (if applicable) from gross income of interest on the respective Series of Senior Bonds to which such excess relates (i) to the subaccount of the Senior Principal Account corresponding to such Series of Senior Bonds, or (ii) to fund the Operating Reserve Fund at the Operating Reserve Requirement, or (iii) to the Authority to be used to pay all or any portion of the Costs of Improvements designated by the Authority and approved by Bond Counsel. If an Authorized Representative of the Authority calls for a Reserve Determination Date in connection with the refunding and/or defeasance of a Series of Senior Bonds, then the Trustee is authorized to take such refunding and/or defeasance into account in valuing the Senior Debt Service Reserve Account securing such Series of Senior Bonds and is further authorized to apply the amount of any surplus arising from such valuation to reduce the amount of the refunding Bonds and/or to provide for the refunding or defeasance of the Series of Senior Bonds in such manner as such Authorized Representative may direct.

(e) In connection with any issuance of Senior Bonds, the Authority may, in the applicable Supplemental Agreement, provide that no deposit to the Senior Debt Service Reserve Fund shall be made for or with respect to such additional Senior Bonds, in which case: (i) the lien of and pledge on the Senior Debt Service Reserve Fund shall not extend to or be for the benefit of the Holders of such Senior Bonds, and (ii) the Annual Debt Service on such Senior Bonds shall not be taken into account in determining the applicable Debt Service Reserve Requirement.

In the event that a Supplemental Agreement so provides, then such Supplemental Agreement may also provide for the creation of a special reserve account solely for the Senior Bonds to which such Supplemental Agreement relates, separate from the Senior Debt Service Reserve Fund, and may provide for the deposit therein, at the time of issuance or from time to time thereafter, of an amount specified in the applicable Supplemental Agreement as the required reserve for such Senior Bonds, or may require the Authority to deposit to the credit of such special reserve account a Debt Service Reserve Facility to enhance the security for such Senior Bonds in lieu of a funded reserve account.

Senior Subordinate Bond Fund.

(a) Deposits to the Senior Subordinate Bond Fund. In accordance with the provisions of the Trust Agreement relating to Funds and Accounts (except that no distinction or preference shall exist in making the

following deposits into the Senior Subordinate Interest Account, the Senior Subordinate Principal Account or the Senior Subordinate Sinking Fund Account of the Senior Subordinate Bond Fund, in each case, such accounts being on a parity with each other as to the deposits therein under the provisions of the Trust Agreement relating to Funds and Accounts), on each Deposit Date, the Trustee shall make the following deposits:

(1) to the subaccounts established for each issue of Senior Subordinate Indebtedness in the Senior Subordinate Interest Account, (i) an amount equal to the Interest Accrual on all the outstanding Senior Subordinate Indebtedness to and including the last day of the next calendar month; (ii) the amount of any payments or reimbursements due in the next ensuing month to each Enhancement Facility Provider to the extent such payment or reimbursement obligation constitutes Senior Subordinate Indebtedness under the Trust Agreement; (iii) the amount of any payments due in the next ensuing month under any Hedge Agreement or Qualified Swap secured on a parity with Senior Subordinate Indebtedness; provided, further, that any such deposits shall be adjusted to give credit for any other available money then in such interest account or subaccount or otherwise available and designated to be used for such purpose; and

(2) to the subaccounts established for each issue of Senior Subordinate Indebtedness in the Senior Subordinate Principal Account and Senior Subordinate Sinking Fund Account, an amount equal to the Principal Accrual on the outstanding Senior Subordinate Indebtedness to and including the last day of the next calendar month; provided, however, such deposits shall be adjusted to give credit for any other available money then in the principal or sinking fund account or subaccount or otherwise available and designated to be used for such purpose.

(b) Use of Moneys in Senior Subordinate Bond Fund. (1) On or before each Interest Payment Date, the Trustee shall pay to the Holders of Senior Subordinate Indebtedness from funds on deposit in the Senior Subordinate Interest Account, the amount required for the payment of the interest becoming due on Senior Subordinate Indebtedness on such Interest Payment Date; provided, however, if the Trustee is not the Fiduciary for such Senior Subordinate Indebtedness, the Trustee will withdraw from the Senior Subordinate Interest Account and transfer to the Fiduciary therefor not later than one (1) Business Day prior to the applicable Interest Payment Date the amount required for the payment of interest becoming due on the Senior Subordinate Indebtedness to which the Fiduciary so serves. On or before the date on which (x) regularly scheduled payments under a Hedge Agreement or Qualified Swap are due or (y) payments or reimbursements to an Enhancement Facility Provider are to be made, in each case relating to Senior Subordinate Indebtedness, the Trustee shall pay to the persons entitled thereto from funds on deposit in the Senior Subordinate Interest Account the corresponding amounts owing to such persons on such date.

(2) On or before each payment date, the Trustee shall pay to the Holders of Senior Subordinate Indebtedness from funds on deposit in the Senior Subordinate Principal Account, the amount required for the payment of principal becoming due on and any termination payment due in respect of Senior Subordinate Indebtedness on such payment date and with respect to Senior Subordinate Indebtedness as to which the Trustee is not the Fiduciary therefor, the Trustee shall pay to each such Fiduciary not later than one (1) Business Day prior to the applicable payment date from funds on deposit in the Senior Subordinate Principal Account the corresponding amounts required for the payment of principal becoming due on and any termination payment due in respect of such Senior Subordinate Indebtedness.

(3) On or before each mandatory redemption date, the Trustee shall pay to the Holders of Senior Subordinate Indebtedness from funds on deposit in the Senior Subordinate Sinking Fund Account, the amount required for the payment of mandatory sinking fund installments becoming due on Senior Subordinate Indebtedness on such mandatory redemption payment date and with respect to Senior Subordinate Indebtedness as to which the Trustee is not the Fiduciary therefor, the Trustee shall pay to each such Fiduciary not later than one (1) Business Day prior to the applicable mandatory redemption payment date from funds on deposit in the Senior Subordinate Sinking Fund Account the corresponding amounts required for the payment of mandatory sinking fund installments becoming due on such Senior Subordinate Indebtedness.

(4) Any amount in the Senior Subordinate Sinking Fund Account not applied in accordance with subsection (c) below to the purchase of Senior Subordinate Indebtedness by the forty-fifth (45th) day prior to the next date on which such Senior Subordinate Indebtedness is so redeemable shall be applied to the

redemption of such Senior Subordinate Indebtedness on such redemption date. Any amounts deposited in the Senior Subordinate Sinking Fund Account and not applied within twelve (12) months of their date of deposit to the purchase or redemption of Senior Subordinate Indebtedness (except if held in accordance with the section entitled "Discharge of Agreement" below) shall be transferred to the Senior Subordinate Interest Account. The Senior Subordinate Indebtedness to be purchased or redeemed shall be selected by the Trustee in the manner provided in the section entitled "Selection of Bonds to be Redeemed" above. Amounts in the Senior Subordinate Sinking Fund Account to be applied to the redemption of Senior Subordinate Indebtedness shall be paid to the respective Trustee or Fiduciary on or before the redemption date and applied by them on such redemption date to the payment of the redemption price of the Senior Subordinate Indebtedness being redeemed.

(c) Notwithstanding the provisions of this section, the Authority may, at any time but in no event less than forty-five (45) days prior to the date on which a mandatory sinking fund installment is scheduled to be due on Senior Subordinate Indebtedness, direct the Trustee or Fiduciary to purchase, with money on deposit in the Senior Subordinate Sinking Fund Account, at a price not in excess of par plus interest accrued and unpaid to the date of such purchase, term bonds to be redeemed on such date. At the direction of the Authority, any term bond so purchased may be cancelled upon receipt thereof by the Trustee or the Fiduciary and evidence of such cancellation shall be given to the Authority. The principal amount of each term bond so canceled shall be credited against the sinking fund installment due on such date as long as such term bond is canceled by the Trustee or Fiduciary prior to the date on which notice of redemption is given.

(d) In the event the amount on deposit in the Senior Subordinate Interest Account on any Interest Payment Date exceeds the amount required to pay interest on the Senior Subordinate Indebtedness on such Interest Payment Date, the Authority shall, if the amount on deposit in any Senior Subordinate Debt Service Reserve Account is less than the applicable Debt Service Reserve Requirement, instruct the Trustee to transfer such excess to such Senior Subordinate Debt Service Reserve Account to the extent of such deficiency, and otherwise retain any remaining excess in the Senior Subordinate Interest Account or instruct the Trustee to transfer any such remaining excess to the Senior Subordinate Principal Account or Senior Subordinate Sinking Fund Account to be credited against subsequent required deposits thereto, as determined by the Authority.

(e) In the event the amount on deposit in the Senior Subordinate Principal Account or Senior Subordinate Sinking Fund Account on any principal or mandatory redemption payment date exceeds the amount required on such date to pay Senior Subordinate Indebtedness at maturity or pursuant to mandatory sinking fund requirements, the Authority shall, if the amount on deposit in any Senior Subordinate Debt Service Reserve Account is less than the applicable Debt Service Reserve Requirement, instruct the Trustee to transfer such excess to such Senior Subordinate Debt Service Reserve Account to the extent of such deficiency, and otherwise retain such excess in the Senior Subordinate Principal Account or Senior Subordinate Sinking Fund Account, as the case may be, or instruct the Trustee to transfer such excess to the Senior Subordinate Interest Account to be credited against subsequent required deposits thereto, as determined by the Authority.

(f) In the event the balance on deposit in the Senior Subordinate Principal Account, the Senior Subordinate Sinking Fund Account or the Senior Subordinate Interest Account is insufficient for the purposes thereof, the Trustee shall deposit in such Accounts such amounts as may be necessary therefor, after any transfers required under paragraph (f) of "Senior Bond Fund" above, first, from other legally available funds of the Authority not subject to the lien of the Trust Agreement; second, from the Surplus Fund; third, from the Commonwealth Payments Fund; fourth, from the Capital Improvement Fund; fifth, from the Operating Reserve Fund and last, from the applicable Senior Subordinate Debt Service Reserve Account pursuant to the section entitled "Senior Subordinate Debt Service Reserve Fund" below.

Senior Subordinate Debt Service Reserve Fund.

(a) The Trustee shall deposit to each Account in the Senior Subordinate Debt Service Reserve Fund (i) on each Deposit Date an amount equal to (x) 1/60 of the amount (or such greater amount specified in the Supplemental Agreement authorizing any Senior Subordinate Bonds), if any, necessary to restore the amount on deposit therein to the related Debt Service Reserve Requirement in the event of an increase in the applicable Debt Service Reserve Requirement upon the issuance of additional Senior Subordinate Bonds, and (y) except as provided in paragraph (c) below, 1/12 of the amount, if any, necessary to restore the amount on deposit therein to the related

Debt Service Reserve Requirement in the event of any other deficiency and (ii) the amount of proceeds of any Senior Subordinate Bonds as required by the applicable Supplemental Agreement.

(b) Amounts in each Account in the Senior Subordinate Debt Service Reserve Fund shall be used to pay debt service on the related Series of Senior Subordinate Bonds on the dates such debt service is due when insufficient funds for that purpose are available in the Senior Subordinate Bond Fund, after making any transfers pursuant to subsection (f) of the section entitled "Senior Subordinate Bond Fund" above and all cash and investments in an Account in the Senior Subordinate Debt Service Reserve Fund shall be used, together with other amounts available for such purpose under the Trust Agreement, to provide for payment in full of the related Series of Senior Subordinate Bonds when the aggregate of such amounts is sufficient for such purpose. Amounts in each Account of the Senior Subordinate Debt Service Reserve Fund shall be pledged to Holders of the Senior Subordinate Bonds to which such Account relates. In no event shall amounts on deposit in the Senior Subordinate Debt Service Reserve Fund be used to pay principal of, interest on, or any other amounts due with respect to Other System Indebtedness.

(c) In lieu of or in addition to cash or investments, at any time the Authority may cause to be deposited to the credit of any Senior Subordinate Debt Service Reserve Account, a Debt Service Reserve Facility, in the stated amount equal to all or a portion of the applicable Debt Service Reserve Requirement, irrevocably payable to the Trustee, as beneficiary for the Holders of the Senior Subordinate Bonds to which such Account relates. If (x) the Authority receives an expiration notice and the applicable Enhancement Facility Provider does not extend the expiration date of a Debt Service Reserve Facility, (y) the Authority receives notice of the termination of a Debt Service Reserve Facility, or (z) the Authority receives notice that the Enhancement Facility Provider of a Debt Service Reserve Facility no longer has the required credit rating, the Authority immediately shall (i) provide a substitute Debt Service Reserve Facility, (ii) deposit a sum equal to the applicable Debt Service Reserve Requirement to the credit of the Senior Subordinate Debt Service Reserve Account to which such Debt Service Reserve Facility relates (A) in equal monthly installments over the next succeeding 12 months in the case of receipt of an expiration notice, (B) prior to the termination date in the case of receipt of a termination notice, or (C) immediately in the case of such reduction in credit rating, or (iii) instruct the Trustee to draw on such Debt Service Reserve Facility (A) 12 months prior to expiration of the Debt Service Reserve Facility in the case of receipt of an expiration notice, (B) prior to the termination date in the case of receipt of a termination notice, or (C) immediately in the case of such reduction in credit rating and deposit the proceeds of such drawing to the credit of the Senior Subordinate Debt Service Reserve Account to which such Debt Service Reserve Facility relates.

If a disbursement is made pursuant to a Debt Service Reserve Facility, the Authority shall either (i) reinstate such Facility in full or (ii) deposit to the credit of the Senior Subordinate Debt Service Reserve Account a sum equal to the amount of the disbursement made under such Facility in accordance with its provisions.

(d) On or within five days after each Reserve Determination Date, the Trustee shall determine whether the balance on deposit in each Senior Subordinate Debt Service Reserve Account was, as of the Reserve Determination Date, at least equal to the applicable Debt Service Reserve Requirement. In making such determination, any obligations in a Senior Subordinate Debt Service Reserve Account shall be valued in accordance with the section entitled "Investment of Funds" below.

In the event the amount on deposit in a Senior Subordinate Debt Service Reserve Account exceeds the applicable Debt Service Reserve Requirement, the Trustee shall transfer such excess as directed in writing by an Authorized Representative of the Authority, such direction to be accompanied by an Opinion of Bond Counsel that such transfer will not adversely affect the exclusion (if applicable) from gross income of interest on the respective Series of Senior Subordinate Bonds to which such excess relates, (i) to the subaccount of the Senior Subordinate Principal Account corresponding to such Series of Senior Subordinate Bonds, or (ii) to fund the Operating Reserve Fund at the Operating Reserve Requirement, or (iii) to the Authority to be used to pay all or any portion of the Costs of Improvements designated by the Authority and approved by Bond Counsel. If an Authorized Representative of the Authority calls for a Reserve Determination Date in connection with the refunding and/or defeasance of a Series of Senior Subordinate Bonds, then the Trustee is authorized to take such refunding and/or defeasance into account in valuing the Senior Subordinate Debt Service Reserve Account securing such Series of Senior Subordinate Bonds and is further authorized to apply the amount of any surplus arising from such valuation to reduce the amount of the

refunding bonds and/or to provide for the refunding or defeasance of the Series of Senior Subordinate Bonds in such manner as such Authorized Representative may direct.

(e) In connection with any issuance of Senior Subordinate Bonds, the Authority may, in the applicable Supplemental Agreement, provide that no deposit to the Senior Subordinate Debt Service Reserve Fund shall be made for or with respect to such additional Senior Subordinate Bonds, in which case: (i) the lien of and pledge on the Senior Subordinate Debt Service Reserve Fund shall not extend to or be for the benefit of the Holders of such Senior Subordinate Bonds, and (ii) the Annual Debt Service on such Senior Subordinate Bonds shall not be taken into account in determining the applicable Debt Service Reserve Requirement.

In the event that a Supplemental Agreement so provides, then such Supplemental Agreement may also provide for the creation of a special reserve account solely for the Senior Subordinate Bonds to which such Supplemental Agreement relates, separate from the Senior Subordinate Debt Service Reserve Fund, and may provide for the deposit therein, at the time of issuance or from time to time thereafter, of an amount specified in the applicable Supplemental Agreement as the required reserve for such Senior Subordinate Bonds, or may require the Authority to deposit to the credit of such special reserve account a Debt Service Reserve Facility to enhance the security for such Senior Subordinate Bonds in lieu of a funded reserve account.

Subordinate Bond Fund.

(a) Deposits to the Subordinate Bond Fund. In accordance with the provisions of the Trust Agreement relating to Funds and Accounts (except that no distinction or preference shall exist in making the following deposits into the Subordinate Interest Account, the Subordinate Principal Account or the Subordinate Sinking Fund Account of the Subordinate Bond Fund, in each case, such accounts being on a parity with each other as to the deposits therein under the provisions of the Trust Agreement relating to Funds and Accounts), on each Deposit Date, the Trustee shall make the following deposits:

(1) to the subaccounts established for each issue of Subordinate Indebtedness in the Subordinate Interest Account, (i) an amount equal to the Interest Accrual on all the outstanding Subordinate Indebtedness to and including the last day of the next calendar month; (ii) the amount of any payments or reimbursements due in the next ensuing month to each Enhancement Facility Provider to the extent such payment or reimbursement obligation constitutes Subordinate Indebtedness under the Trust Agreement; and (iii) the amount of any payments due in the next ensuing month under any Hedge Agreement or Qualified Swap secured on a parity with Subordinate Indebtedness; provided, further, that any such deposits shall be adjusted to give credit for any other available money then in such interest account or subaccount or otherwise available and designated to be used for such purpose; and

(2) to the subaccounts established for each issue of Subordinate Indebtedness in the Subordinate Principal Account and Subordinate Sinking Fund Account, an amount equal to the Principal Accrual on the outstanding Subordinate Indebtedness to and including the last day of the next calendar month; provided, however, such deposits shall be adjusted to give credit for any other available money then in the principal or sinking fund account or subaccount or otherwise available and designated to be used for such purpose.

(b) Use of Moneys in Subordinate Bond Fund. (1) On or before each Interest Payment Date, the Trustee shall pay to the Holders of Subordinate Indebtedness from funds on deposit in the Subordinate Interest Account, the amount required for the payment of the interest becoming due on Subordinate Indebtedness on such Interest Payment Date; provided, however, if the Trustee is not the Fiduciary for such Subordinate Indebtedness, the Trustee will withdraw from the Subordinate Interest Account and transfer to the Fiduciary therefor not later than one (1) Business Day prior to the applicable Interest Payment Date the amount required for the payment of interest becoming due on the Subordinate Indebtedness to which the Fiduciary so serves. On or before the date on which (x) regularly scheduled payments under a Hedge Agreement or Qualified Swap are due or (y) payments or reimbursements to an Enhancement Facility Provider are to be made, in each case relating to Subordinate Indebtedness, the Trustee shall pay to the persons entitled thereto from funds on deposit in the Subordinate Interest Account the corresponding amounts owing to such persons on such date.

(2) On or before each payment date, the Trustee shall pay to the Holders of Subordinate Indebtedness from funds on deposit in the Subordinate Principal Account, the amount required for the payment of principal becoming due on and any termination payment due in respect of Subordinate Indebtedness on such payment date and with respect to Subordinate Indebtedness as to which the Trustee is not the Fiduciary therefor, the Trustee shall pay to each such Fiduciary not later than one (1) Business Day prior to the applicable payment date from funds on deposit in the Subordinate Principal Account the corresponding amounts required for the payment of principal becoming due on and any termination payment due in respect of such Subordinate Indebtedness.

(3) On or before each mandatory redemption date, the Trustee shall pay to the Holders of Subordinate Indebtedness from funds on deposit in the Subordinate Sinking Fund Account, the amount required for the payment of mandatory sinking fund installments becoming due on Subordinate Indebtedness on such mandatory redemption payment date and with respect to Subordinate Indebtedness as to which the Trustee is not the Fiduciary therefor, the Trustee shall pay to each such Fiduciary not later than one (1) Business Day prior to the applicable mandatory redemption payment date from funds on deposit in the Subordinate Sinking Fund Account the corresponding amounts required for the payment of mandatory sinking fund installments becoming due on such Subordinate Indebtedness.

(4) Any amount in the Subordinate Sinking Fund Account not applied in accordance with subsection (c) below to the purchase of Subordinate Indebtedness by the forty-fifth (45th) day prior to the next date on which such Subordinate Indebtedness is so redeemable shall be applied to the redemption of such Subordinate Indebtedness on such redemption date. Any amounts deposited in the Subordinate Sinking Fund Account and not applied within twelve (12) months of their date of deposit to the purchase or redemption of Subordinate Indebtedness (except if held in accordance with the section entitled "Discharge of Agreement" below) shall be transferred to the Subordinate Interest Account. The Subordinate Indebtedness to be purchased or redeemed shall be selected by the Trustee in the manner provided in the section entitled "Selection of Bonds to be Redeemed" above. Amounts in the Subordinate Sinking Fund Account to be applied to the redemption of Subordinate Indebtedness shall be paid to the respective Trustee or Fiduciary on or before the redemption date and applied by them on such redemption date to the payment of the redemption price of the Subordinate Indebtedness being redeemed.

(c) Notwithstanding the provisions of this section, the Authority may, at any time but in no event less than forty-five (45) days prior to the date on which a mandatory sinking fund installment is scheduled to be due on Subordinate Indebtedness, direct the Trustee or Fiduciary to purchase, with money on deposit in the Subordinate Sinking Fund Account, at a price not in excess of par plus interest accrued and unpaid to the date of such purchase, term bonds to be redeemed on such date. At the direction of the Authority, any term bond so purchased may be cancelled upon receipt thereof by the Trustee or the Fiduciary and evidence of such cancellation shall be given to the Authority. The principal amount of each term bond so canceled shall be credited against the sinking fund installment due on such date as long as that such term bond is canceled by the Trustee or Fiduciary prior to the date on which notice of redemption is given.

(d) In the event the amount on deposit in the Subordinate Interest Account on any Interest Payment Date exceeds the amount required to pay interest on the Subordinate Indebtedness on such Interest Payment Date, the Authority shall, if the amount on deposit in any Subordinate Debt Service Reserve Account is less than the applicable Debt Service Reserve Requirement, instruct the Trustee to transfer such excess to such Subordinate Debt Service Reserve Account to the extent of such deficiency, and otherwise retain any remaining excess in the Subordinate Interest Account or instruct the Trustee to transfer any such remaining excess to the Subordinate Principal Account or Subordinate Sinking Fund Account to be credited against subsequent required deposits thereto, as determined by the Authority.

(e) In the event the amount on deposit in the Subordinate Principal Account or Subordinate Sinking Fund Account on any principal or mandatory redemption payment date exceeds the amount required on such date to pay Subordinate Indebtedness at maturity or pursuant to mandatory sinking fund requirements, the Authority shall, if the amount on deposit in any Subordinate Debt Service Reserve Account is less than the applicable Debt Service Reserve Requirement, instruct the Trustee to transfer such excess to such Subordinate Debt Service Reserve Account to the extent of such deficiency, and otherwise retain such excess in the Subordinate

Principal Account or Subordinate Sinking Fund Account, as the case may be, or instruct the Trustee to transfer such excess to the Subordinate Interest Account to be credited against subsequent required deposits thereto, as determined by the Authority.

(f) In the event the balance on deposit in the Subordinate Principal Account, the Subordinate Sinking Fund Account or the Subordinate Interest Account is insufficient for the purposes thereof, the Trustee shall deposit in such Accounts such amounts as may be necessary therefor, after any transfers required under paragraph (f) of "Senior Bond Fund" and of "Senior Subordinate Bond Fund" above, first, from other legally available funds of the Authority not subject to the lien of the Trust Agreement; second, from the Surplus Fund; third, from the Commonwealth Payments Fund; fourth, from the Capital Improvement Fund; fifth, from the Operating Reserve Fund, and last, from the applicable Subordinate Debt Service Reserve Account pursuant to the section entitled "Subordinate Reserve Fund" below.

Subordinate Debt Service Reserve Fund.

(a) The Trustee shall deposit to each Account in the Subordinate Debt Service Reserve Fund (i) on each Deposit Date an amount equal to (x) 1/60 of the amount (or such greater amount specified in the Supplemental Agreement authorizing such additional Subordinate Bonds), if any, necessary to restore the amount on deposit therein to the related Debt Service Reserve Requirement in the event of an increase in the applicable Debt Service Reserve Requirement upon the issuance of additional Subordinate Bonds, and (y) except as provided in paragraph (c) below, 1/12 of the amount, if any, necessary to restore the amount on deposit therein to the related Debt Service Reserve Requirement in the event of any other deficiency and (ii) the amount of proceeds of any Subordinate Bonds as required by the applicable Supplemental Agreement.

(b) Amounts in each Account in the Subordinate Debt Service Reserve Fund shall be used to pay debt service on the related Series of Subordinate Bonds on the dates such debt service is due when insufficient funds for that purpose are available in the Subordinate Bond Fund, after making any transfers pursuant to subsection (f) of the section entitled "Subordinate Bond Fund" above and all cash and investments in an Account in the Subordinate Debt Service Reserve Fund shall be used, together with other amounts available for such purpose under the Trust Agreement, to provide for payment in full of the related Series of Subordinate Bonds when the aggregate of such amounts is sufficient for such purpose. Amounts in each Account of the Subordinate Debt Service Reserve Fund shall be pledged to Holders of the Subordinate Bonds to which such Account relates. In no event shall amounts on deposit in the Senior Subordinate Debt Service Reserve Fund be used to pay principal of, interest on or any other amounts due with respect to Other System Indebtedness.

(c) In lieu of or in addition to cash or investments, at any time the Authority may cause to be deposited to the credit of any Subordinate Debt Service Reserve Account, a Debt Service Reserve Facility, in the stated amount equal to all or a portion of the applicable Debt Service Reserve Requirement, irrevocably payable to the Trustee, as beneficiary for the Holders of the Subordinate Bonds to which such Account relates. If (x) the Authority receives an expiration notice and the applicable Enhancement Facility Provider does not extend the expiration date of a Debt Service Reserve Facility, (y) the Authority receives notice of the termination of a Debt Service Reserve Facility, or (z) the Authority receives notice that the Enhancement Facility Provider of a Debt Service Reserve Facility no longer has the required credit rating, the Authority immediately shall (i) provide a substitute Debt Service Reserve Facility, (ii) deposit a sum equal to the applicable Debt Service Reserve Requirement to the credit of the Subordinate Debt Service Reserve Account to which such Debt Service Reserve Facility relates (A) in equal monthly installments over the next succeeding 12 months in the case of receipt of an expiration notice, (B) prior to the termination date in the case of receipt of a termination notice, or (C) immediately in the case of such reduction in credit rating, or (iii) instruct the Trustee to draw on such Debt Service Reserve Facility (A) 12 months prior to expiration of the Debt Service Reserve Facility in the case of receipt of an expiration notice, (B) prior to the termination date in the case of receipt of a termination notice, or (C) immediately in the case of such reduction in credit rating and deposit the proceeds of such drawing to the credit of the Subordinate Debt Service Reserve Account to which such Debt Service Reserve Facility relates.

If a disbursement is made pursuant to a Debt Service Reserve Facility, the Authority shall either (i) reinstate such Facility in full or (ii) deposit to the credit of the Subordinate Debt Service Reserve Account a sum equal to the amount of the disbursement made under such Facility in accordance with its provisions.

(d) On or within five days after each Reserve Determination Date, the Trustee shall determine whether the balance on deposit in each Subordinate Debt Service Reserve Account was, as of the Reserve Determination Date, at least equal to the applicable Debt Service Reserve Requirement. In making such determination, any obligations in a Subordinate Debt Service Reserve Account shall be valued in accordance with the section entitled "Investment of Funds" below.

In the event the amount on deposit in a Subordinate Debt Service Reserve Account exceeds the applicable Debt Service Reserve Requirement, the Trustee shall transfer such excess as directed by an Authorized Representative of the Authority, such direction to be accompanied by an Opinion of Bond Counsel that such transfer will not adversely affect the exclusion (if applicable) from gross income of interest on the respective Series of Subordinate Bonds to which such excess relates, (i) to the subaccount of the Subordinate Principal Account corresponding to such Series of Subordinate Bonds, or (ii) to fund the Operating Reserve Fund at the Operating Reserve Requirement, or (iii) to the Authority to be used to pay all or any portion of the Costs of Improvements designated by the Authority and approved by Bond Counsel. If an Authorized Representative of the Authority calls for a Reserve Determination Date in connection with the refunding and/or defeasance of a Series of Subordinate Bonds, then the Trustee is authorized to take such refunding and/or defeasance into account in valuing the Subordinate Debt Service Reserve Account securing such Series of Subordinate Bonds and is further authorized to apply the amount of any surplus arising from such valuation to reduce the amount of the refunding bonds and/or to provide for the refunding or defeasance of the Series of Subordinate Bonds in such manner as such Authorized Representative may direct.

(e) In connection with any issuance of Subordinate Bonds, the Authority may, in the applicable Supplemental Agreement, provide that no deposit to the Subordinate Debt Service Reserve Fund shall be made for or with respect to such additional Subordinate Bonds, in which case: (i) the lien of and pledge on the Subordinate Debt Service Reserve Fund shall not extend to or be for the benefit of the Holders of such Subordinate Bonds, and (ii) the Annual Debt Service on such Subordinate Bonds shall not be taken into account in determining the applicable Debt Service Reserve Requirement.

In the event that a Supplemental Agreement so provides, then such Supplemental Agreement may also provide for the creation of a special reserve account solely for the Subordinate Bonds to which such Supplemental Agreement relates, separate from the Subordinate Debt Service Reserve Fund, and may provide for the deposit therein, at the time of issuance or from time to time thereafter, of an amount specified in the applicable Supplemental Agreement as the required reserve for such Subordinate Bonds, or may require the Authority to deposit to the credit of such special reserve account a Debt Service Reserve Facility to enhance the security for such Subordinate Bonds in lieu of a funded reserve account.

Operating Reserve Fund.

(a) In accordance with the provisions of the Trust Agreement relating to Funds and Accounts, on each Deposit Date, the Trustee shall transfer to the credit of the Operating Reserve Fund, an amount equal to that which is necessary to make the balance on deposit therein equal to the Operating Reserve Requirement and to pay interest on and reimbursement obligations due with respect to an Operating Reserve Facility. Earnings on moneys held in the Operating Reserve Fund shall be retained therein.

(b) Amounts on deposit in the Operating Reserve Fund shall be available (i) to be requisitioned by the Authority to pay Current Expenses, (ii) to pay any termination payment due under a Qualified Swap or Hedge Agreement, (iii) to pay interest or any reimbursement obligation due with respect to an Operating Reserve Facility, and (iv) subject to certain provisions of the Trust Agreement, to satisfy any deficiencies in the Debt Service Reserve Funds to the extent that moneys on deposit in the Senior Bond Fund, the Senior Subordinate Bond Fund or the Subordinate Bond Fund are insufficient to make the required interest and principal payments, prior to any withdrawal from the Senior Debt Service Reserve Fund, the Senior Subordinate Debt Service Reserve Fund or the Subordinate Debt Service Reserve Fund. In accordance with the provisions of the Trust Agreement, in the event that (i) there is no deposit required to be made to the Commonwealth Payments Fund and (ii) amounts on deposit in the Operating Reserve Fund are transferred to pay a termination payment or to fund a deficiency in the Senior Bond Fund, the Senior Subordinate Bond Fund or the Subordinate Bond Fund, the Trustee shall provide

notice of such transfer to the Consulting Engineer, other Consultants, if any, and to Government Development Bank for Puerto Rico.

(c) In lieu of or in addition to cash or investments, at any time the Authority may cause to be deposited to the credit of the Operating Reserve Fund, an Operating Reserve Facility, in the stated amount equal to all or a portion of the applicable Operating Reserve Requirement. Any withdrawals from the Operating Reserve Fund made in accordance with the above paragraph (b), shall be made first from any cash or investments on deposit therein and then, to the extent no such cash or investments are available, from a draw on any Operating Reserve Facility. If at any time an Operating Reserve Facility shall have a term of less than one year remaining, the Authority shall deposit from Revenues to the credit of the Operating Reserve Fund until the Operative Reserve Requirement is satisfied.

(d) For so long as the provisions of subsection (a) of the section entitled "Other Remedies; Rights of Bondholders" below remain in effect, from the time during any Fiscal Year at which aggregate Current Expenses for such year exceed the amount therefor set forth in the applicable Annual Budget, each requisition from the Operating Reserve Fund must be approved in writing by the Consulting Engineer.

Capital Improvement Fund.

(a) There shall be credited to the Capital Improvement Fund (i) on each Deposit Date an amount equal to that which may be necessary to make the balance on deposit therein equal to the Capital Improvement Fund Requirement for the Fiscal Year as set forth in the applicable Annual Budget in equal monthly deposits over such Fiscal Year, (ii) the proceeds of any condemnation awards, (iii) proceeds of insurance (other than use and occupancy insurance), (iv) the proceeds of sales of property constituting a part of the Systems and (v) the proceeds of any termination or similar payment received by the Authority under any interest rate swap or similar hedge agreement. Earnings on moneys held in the Capital Improvement Fund shall be retained therein.

(b) Amounts on deposit in the Capital Improvement Fund shall be available (i) to pay or reimburse the Authority for Costs of Improvements, such Costs of Improvements to be paid in accordance with the procedures established in the Trust Agreement and (ii) subject to certain provisions of the Trust Agreement, to the extent that moneys on deposit in the Senior Bond Fund, the Senior Subordinate Bond Fund or the Subordinate Bond Fund are insufficient to make the required interest and principal payments on Bonds prior to any withdrawal from the Senior Debt Service Reserve Fund, the Senior Subordinate Debt Service Reserve Fund or the Subordinate Debt Service Reserve Fund, to satisfy any such deficiencies.

Commonwealth Payments Fund.

(a) There shall be credited to the Commonwealth Guaranteed Indebtedness Account (i) any amounts received by the Authority from the Commonwealth of Puerto Rico on account of Commonwealth Guaranteed Indebtedness and (ii) on each Deposit Date an amount sufficient to pay:

(i) the Interest Accrual on Commonwealth Guaranteed Indebtedness in respect of the next Interest Payment Date; provided, however, that such deposits shall be adjusted to give credit for any other available money then in such account or otherwise available and designated to be used for such purpose; and

(ii) the Principal Accrual on Commonwealth Guaranteed Indebtedness in respect of the next principal payment date; provided, however, that such deposits shall be adjusted to give credit for any other available money then in such account or otherwise available and designated to be used for such purpose.

(b) There shall be credited to the Commonwealth Supported Obligations Account (i) any amounts received by the Authority from the Commonwealth of Puerto Rico on account of Commonwealth Supported Obligations and (ii) after the deposits required by paragraph (a) have been made in full, on each Deposit Date an amount sufficient to pay:

(i) the Interest Accrual on Commonwealth Supported Obligations in respect of the next Interest Payment Date; provided, however, that such deposits shall be adjusted to give credit for any other available money then in such account or otherwise available and designated to be used for such purpose; and

(ii) the Principal Accrual on Commonwealth Supported Obligations in respect of the next principal payment date; provided, however, that such deposits shall be adjusted to give credit for any other available money then in such account or otherwise available and designated to be used for such purpose.

(c) Amounts on deposit in the Commonwealth Guaranteed Indebtedness Account and Commonwealth Supported Obligations Account within the Commonwealth Payments Fund will be transferred by the Trustee to the respective Fiduciaries therefor not later than one (1) Business Day prior to the applicable interest or principal payment date; provided, however, to the extent that moneys on deposit in the Commonwealth Guaranteed Indebtedness Account are insufficient to make the required interest and principal payments on Commonwealth Guaranteed Indebtedness, moneys in the Commonwealth Supported Obligations Account (other than amounts received from the Commonwealth of Puerto Rico to pay principal or interest on Commonwealth Supported Obligations) shall be used to satisfy any such deficiency.

(d) (1) Amounts on deposit in the Commonwealth Payments Fund shall be available to replenish any deficiencies in the Operating Reserve Fund, including any payments with respect to any Operating Reserve Facility or to pay any amounts due under any other operating line of credit of the Authority.

(2) Subject to certain provisions of the Trust Agreement, to the extent that moneys on deposit in the Senior Bond Fund, the Senior Subordinate Bond Fund or the Subordinate Bond Fund are insufficient to make the required interest and principal payments on Bonds, moneys in the Commonwealth Supported Obligations Account (other than amounts received from the Commonwealth of Puerto Rico to pay principal or interest on Commonwealth Supported Obligations) and in the Commonwealth Guaranteed Indebtedness Account (other than amounts received from the Commonwealth of Puerto Rico to pay principal or interest on Commonwealth Guaranteed Indebtedness) shall be used, in that order of priority, prior to any withdrawal from the Senior Debt Service Reserve Fund, the Senior Subordinate Debt Service Reserve Fund or the Subordinate Debt Service Reserve Fund, to satisfy any such deficiencies.

(e) Amounts received by the Authority from the Commonwealth of Puerto Rico to pay principal or interest when due on Commonwealth Guaranteed Indebtedness or Commonwealth Supported Obligations shall be used only for such purpose. Any amounts received from the Commonwealth of Puerto Rico by the Authority which represents a reimbursement for principal or interest previously paid by the Authority on Commonwealth Guaranteed Indebtedness or Commonwealth Supported Obligations shall be transferred to the Surplus Fund for application in accordance with the section entitled “Surplus Fund” below.

(f) If the amounts so deposited on any Deposit Date to the credit of the foregoing Accounts in the Commonwealth Payment Fund shall be less than the respective required amounts for such month, the Trustee shall provide notice of such insufficiency to the 1995 Resolution Trustee, the Consulting Engineer, other Consultants, if any, and to Government Development Bank for Puerto Rico.

(g) On each September 15 and February 15 and at any other time requested by the 1995 Resolution Trustee, the Trustee shall provide the 1995 Resolution Trustee with the respective amounts on deposit in each of the accounts within the Commonwealth Payments Fund.

(h) At the request of the Fiduciary for any Commonwealth Supported Obligations, the Trustee shall provide such trustee with the amount on deposit in the Commonwealth Supported Obligations Account.

Surplus Fund.

(a) After all the deposits as described in "Flow of Funds" in the front section of this Official Statement have been made in accordance with the provisions of the Trust Agreement relating to Funds and Accounts, any remaining moneys shall be deposited to the credit of the Surplus Fund.

(b) On each Deposit Date there shall be credited to the Rate Stabilization Account, an amount equal to one twelfth (1/12) of the amount, if any, necessary to fund the Rate Stabilization Account at the amount set forth in the applicable Annual Budget.

(c) At any time the Authority may direct the Trustee to withdraw amounts on deposit in the Rate Stabilization Account and (i) transfer such amounts to any other Fund or Account established under the Trust Agreement, (ii) use such amounts to purchase or redeem Indebtedness, or (iii) use such amounts to otherwise provide for the payment of Indebtedness and interest thereon. Subject to certain provisions of the Trust Agreement, to the extent that moneys on deposit in the Senior Bond Fund, the Senior Subordinate Bond Fund or the Subordinate Bond Fund are insufficient to make the required interest and principal payments on Bonds, moneys in the Rate Stabilization Account shall be used prior to any withdrawal from the Senior Debt Service Reserve Fund, the Senior Subordinate Debt Service Reserve Fund or the Subordinate Debt Service Reserve Fund, to satisfy any such deficiencies.

(d) Subject to certain provisions of the Trust Agreement, to the extent that moneys on deposit in the Senior Bond Fund, the Senior Subordinate Bond Fund or the Subordinate Bond Fund are insufficient to make the required interest and principal payments on Bonds, moneys in the Surplus Fund shall be used prior to any withdrawal from the Senior Debt Service Reserve Fund, the Senior Subordinate Debt Service Reserve Fund or the Subordinate Debt Service Reserve Fund, to satisfy any such deficiencies.

(e) At such time as all purposes described in paragraphs (a) through (d) above of this section are satisfied, amounts remaining to the credit of the Surplus Fund may be applied to any lawful purpose of the Authority, including the payment of principal of and interest on any Operating Reserve Facility issued by Government Development Bank for Puerto Rico.

(f) On each September 15 and February 15 and at any other such time requested by the 1995 Resolution Trustee, the Trustee shall provide the 1995 Resolution Trustee with the respective amounts on deposit in each of the accounts within the Surplus Fund.

(g) At the request of the Fiduciary for any Commonwealth Supported Obligations, the Trustee shall provide such trustee with the amount on deposit in the Surplus Fund.

Investment of Funds.

(a) Any moneys held to the credit of the Construction Fund shall be invested or reinvested by the Trustee as directed by the Authority in Investment Obligations that shall mature, or that shall be subject to redemption by the holder thereof at the option of such holder, not later than the respective dates when moneys held for the credit of said Account will be required for the purposes intended. The Authority shall give written directions to the Trustee, specifying the maturity date, interest rate, principal amount and the nature of such investments. Prior to the filing of a certificate of completion related to Improvements, all earnings on moneys held in the Construction Fund related to such Improvements shall be retained therein. Subsequent to the filing of such certificate of completion, the Trustee shall (i) deposit any remaining proceeds of Senior Bonds or investment earnings thereon to the related subaccount of the Senior Interest Account of the Senior Bond Fund, (ii) deposit any remaining proceeds of Senior Subordinate Bonds or investment earnings thereon to the related subaccount of the Senior Subordinate Interest Account of the Senior Subordinate Bond Fund, and (iii) deposit any remaining proceeds of Subordinate Bonds or investment earnings thereon in the Construction Fund to the related subaccount of the Subordinate Bond Fund. The Authority shall direct the investment of amounts held in the Construction Account, and such investments shall have maturities consonant with the need for funds as estimated by the Authority.

(b) Any moneys held to the credit of the Senior Bond Fund, Senior Subordinate Bond Fund, the Subordinate Bond Fund or the Commonwealth Payments Fund, shall be invested or reinvested by the Trustee as directed by the Authority in Investment Obligations that shall mature, or that shall be subject to redemption by the holder thereof at the option of such holder, not later than the respective dates when moneys held for the credit of said Accounts will be required for the purposes intended. The Authority shall give written directions to the Trustee, specifying the maturity date, interest rate, principal amount and nature of such investments. Earnings on moneys held in any Account in a Bond Fund shall be transferred when received to the related subaccount of the Interest Account of the such Bond Fund and earnings on moneys held in the Commonwealth Payments Fund shall be retained therein.

(c) Any moneys held as part of the Deposit Fund, the Operating Reserve Fund, the Capital Improvement Fund and the Surplus Fund, shall be invested and reinvested by the Trustee as directed by the Authority in Investment Obligations that shall mature, or that shall be subject to redemption by the holder thereof at the option of such holder, not later than the respective dates when moneys held for the credit of said Accounts will be required for the purposes intended.

(d) Any moneys held as part of the Senior Debt Service Reserve Fund, the Senior Subordinate Debt Service Reserve Fund or the Subordinate Debt Service Reserve Fund shall be invested or reinvested by the Trustee as directed by the Authority in Investment Obligations that shall mature, or that shall be subject to redemption by the holder thereof at the option of such holder, not later than the respective dates when moneys held for the credit of said Accounts will be required for the purposes intended. Earnings on moneys held in any Account in a Debt Service Reserve Account shall be retained therein.

(e) In computing the amount in any Fund or Account created by the Trust Agreement, except for the Senior Debt Service Reserve Fund, the Senior Subordinate Debt Service Reserve Fund and the Subordinate Debt Service Reserve Fund, obligations purchased as an investment of moneys therein shall be valued at the lower of market value and the amortized value thereof. Amortized value, when used with respect to an obligation purchased at par, means the par amount thereof, and, when used with respect to an obligation purchased at a premium above or a discount below par, means the value as of any given time obtained by dividing the total premium or discount at which such obligation was purchased by the number of interest payments remaining on such obligation after such purchase and deducting the amount thus calculated for each Interest Payment Date after such purchase from the purchase price in the case of an obligation purchased at a premium and adding the amount thus calculated for each Interest Payment Date after such purchase to the purchase price in the case of an obligation purchased at a discount. Except as set forth in the following sentence, valuations shall be made by the party holding each such Fund or Account at least annually not later than the end of each Fiscal Year and at such other times as the Authority may deem appropriate. Investments in the Senior Debt Service Reserve Fund, the Senior Subordinate Debt Service Reserve Fund and the Subordinate Debt Service Reserve Fund shall be valued at least semiannually at the fair market value thereof, plus accrued interest. In computing the value of the assets of any Fund or Account established under the Trust Agreement, investments and accrued interest thereon shall be deemed a part thereof.

(f) For the purposes of this section, each investment agreement shall be valued at par if amounts thereunder may be withdrawn without penalty in accordance with the terms thereof.

(g) The Trustee may sell or redeem any obligation in which moneys shall have been invested as provided in the Trust Agreement to the extent necessary to provide cash in the respective funds or accounts, to make any payments required to be made therefrom or to facilitate the transfers of money between various funds and accounts as may be required or permitted from time to time pursuant to the provisions of the Trust Agreement.

(h) Notwithstanding provisions in the Trust Agreement for transfer to or holding in particular funds and accounts amounts received or held by the Trustee under the Trust Agreement, investments in any and all funds and accounts created by the Trust Agreement may be commingled (except amounts held in any arbitrage rebate fund), provided that, notwithstanding any such commingling, the Trustee shall at all times account for such investments in the funds and accounts to which they are credited and otherwise as provided in the Trust Agreement.

(i) The Authority, each Qualified Depositary and the Trustee shall not be liable for any depreciation in the value of any investments held in the funds or accounts created by the Trust Agreement, or for any

loss arising from any investment permitted by the Trust Agreement. The investments authorized by the Trust Agreement shall at all times be subject to the provisions of applicable law, as amended from time to time. In the event that the Authority, upon the written opinion of Bond Counsel, addressed to the Trustee and the Authority, is of the opinion that it is necessary to restrict or limit the yield on the investment of any money or securities held in any fund in order to avoid the Bonds being considered "arbitrage bonds" within the meaning of Section 148 of the Code, the Authority may direct the Trustee in writing to take whatever action is necessary to properly restrict or limit the yield on such investment in accordance with such instructions, in which event the Trustee shall follow such directions. If the Trustee has not received directions from the Authority on how to invest any of the Funds and Accounts established under the Trust Agreement, the Trustee shall invest the moneys in such Funds and Accounts in Government Obligations.

Annual Budget.

(a) Before the beginning of each Fiscal Year, the Authority shall adopt a budget for the operation of the Systems for the ensuing Fiscal Year, which budget shall be called the Annual Budget.

(b) The Authority covenants that on or before April 15 of each year, it will cause a preliminary Annual Budget to be prepared and delivered to the Consulting Engineer. Within forty-five (45) days of receipt of such preliminary Annual Budget, the Consulting Engineer shall deliver to the Authority any comments on such budget.

(c) The Authority covenants that on or before the first day of July in each year it will cause to be prepared a final Annual Budget for the ensuing Fiscal Year and that it will file such budget with the Trustee and the Consulting Engineer.

(d) Each Annual Budget shall be prepared in such manner as to show in reasonable detail (1) Revenues estimated to be received during such Fiscal Year, (2) the Current Expenses expected to be incurred during such Fiscal Year, (3) the amount of Annual Debt Service that will become due during such Fiscal Year, (4) the amount, if any, required to be deposited in the Senior Debt Service Reserve Fund, the Senior Subordinate Debt Service Reserve Fund and the Subordinate Debt Service Reserve Fund to make the amount on deposit in each respective Account therein equal to the applicable Debt Service Reserve Requirement (provided that such Accounts will be deemed to be funded at the applicable Debt Service Reserve Requirement so long as the deposits to the Senior Debt Service Reserve Fund, the Senior Subordinate Debt Service Reserve Fund and the Subordinate Debt Service Reserve Fund as required by the Trust Agreement are being made), (5) the amount, if any, required to be deposited in the Operating Reserve Fund to make the amount on deposit therein equal to the amount of the Operating Reserve Requirement, (6) the amount, if any, required to be deposited in the Capital Improvement Fund, (7) the amount, if any, required to be deposited in the Rate Stabilization Account of the Surplus Fund, and (8) the amount of Net Revenues that will be sufficient to meet the Rate Covenant for such Fiscal Year. The Annual Budget shall be prepared in sufficient detail to show also the amounts to be deposited in the various funds, accounts and subaccounts created by or under the Trust Agreement or funds and accounts otherwise required to be maintained on behalf of the Systems.

(e) The Authority may amend the Annual Budget at any time during the Fiscal Year and any amendment which decreases Net Revenues by 10% or more in the aggregate for such Fiscal Year shall be accompanied by a report of the Consulting Engineer. A copy of each amendment to the Annual Budget shall be filed promptly with the Trustee and the Consulting Engineer.

(f) If for any reason an Annual Budget is not adopted by the time required by subsection (c) of this section, the last previously adopted Annual Budget shall be deemed to provide for and regulate and control expenditures during each subsequent Fiscal Year until an Annual Budget for such Fiscal Year has been adopted.

(g) Upon the occurrence and continuance of an Event of Default (other than an Event of Default specified in subsection (f) of the section entitled "Events of Default" below) and until delivery of the documents set forth in subsection (b) of the section entitled "Other Remedies; Rights of Bondholders" below, the Authority shall prepare and deliver to the Trustee an Annual Budget which sets forth on a monthly cash basis the

operating and maintenance expenses of the Systems, which Annual Budget must be approved by the Consulting Engineer.

Construction of Improvements.

The Authority covenants that it will construct or cause the construction of Improvements reasonable and desirable for the operation of the Systems in a safe, and efficient manner, and that upon the completion of any Improvements, the Authority will operate and maintain or cause the operation and maintenance of the Improvements as part of the Systems. If deemed advisable by the Authority, the Consulting Engineer shall review any plans and specifications for the Improvements and such construction shall proceed only after the Consulting Engineer approves the plans and specifications.

Maintenance of the Systems.

The Authority further covenants that it will establish and enforce reasonable rules and regulations governing the use of the Systems and the operation thereof, that all compensation, salaries, fees and wages paid by it in connection with the maintenance, repair and operation of said Systems will be reasonable, that no more persons will be employed by it than are necessary, that it will operate said Systems or cause the Systems to be operated in a reasonable efficient and economical manner, that it will at all times maintain said Systems or cause said Systems to be maintained in good repair and in sound operating condition and will make or cause to be made all necessary repairs, renewals and replacements, and that it will comply and cause compliance with all valid acts, rules, regulations, orders and directions of any legislative, executive, administrative or judicial body applicable to said Systems, except to the extent that such non-compliance does not result in a material adverse effect or has not otherwise been provided for as an operational contingency and the Authority is exercising commercially reasonable efforts to comply therewith. The Authority may transfer, to the extent permitted by law and the section entitled "No Sale, Lease, or Encumbrances; Exception" below, the day-to-day operations of the Systems to another entity or any program that would be carried out by the Authority; as long as the Authority shall cause such other entity to undertake such operations or programs so that the Authority does not violate the terms of the Trust Agreement and so that the Authority is not rendered unable to observe its covenants under the Trust Agreement.

Payment of Lawful Charges.

The Authority further covenants that, from the Revenues, it will pay all municipal or other governmental charges lawfully levied or assessed upon the Systems or any part thereof or upon any Revenues when the same shall become due, that it will not create or suffer to be created any lien or charge upon the Systems or any part thereof or upon the Revenues ranking equally with or prior to the Indebtedness, except to the extent and in the manner otherwise permitted in the Trust Agreement, and that, from the Revenues, it will pay or cause to be discharged, or will make adequate provision to satisfy and discharge, within sixty (60) days after the same shall accrue, all lawful claims and demands for labor, materials, supplies or other objects which, if unpaid might by law become a lien upon the Systems or any part thereof or the Revenues; provided, however, that nothing contained in this section shall require the Authority to pay or cause to be discharged, or make provision for, any such lien or charge so long as the validity thereof shall be contested in good faith and by appropriate legal proceedings.

Retention of Consulting Engineer and Other Consultants.

Unless the Senior Bonds shall have been rated investment grade by at least two Rating Agencies for twenty-four (24) consecutive months, the Authority covenants and agrees that it will, for the purpose of performing and carrying out the duties imposed on the Consulting Engineer and other Consultants by this section, retain the Consulting Engineer and other Consultants. Except for fees and expenses incurred in connection with the issuance of Indebtedness or the construction of Improvements, the cost of retaining the Consulting Engineer and other Consultants shall be treated as a part of Current Expenses.

It shall be the duty of the Consulting Engineer to prepare and file reports with the Authority and the Trustee, no later than thirty (30) days after receipt of the Annual Budget, setting forth the following:

(a) the recommendations of the Consulting Engineer as to the proper maintenance, repair and operation of the Systems during the ensuing Fiscal Year, and an estimate of the amounts of money necessary for such purposes;

(b) the recommendations of the Consulting Engineer as to the amount that should be deposited in each month during the ensuing Fiscal Year to the credit of the Capital Improvement Fund;

(c) the recommendations of the Consulting Engineer as to the Improvements which should be made during the ensuing Fiscal Year, and an estimate of the amounts of money necessary for such purposes, showing separately (i) the amount to be expended during such Fiscal Year from moneys to the credit of the Capital Improvement Fund, and the Surplus Fund (ii) the amount to be expended during such Fiscal Year from the proceeds of Bonds and other Indebtedness;

(d) the recommendations of other Consultants retained by or relied upon by the Consulting Engineer as to the insurance to be carried under the provisions as set forth in the section entitled "Insurance" below;

(e) a statement by the Consulting Engineer of the cost of all additions made to the Systems and of the cost (if the cost cannot be accurately determined, the estimated cost) of all retirements of property made in such Fiscal Year;

(f) a report of the Consulting Engineer (which may retain other Consultants as necessary) as to the adequacy of existing rates and charges for purposes of the Rate Covenant as described under "Rate Covenant" in the front section of this Official Statement for the then current Fiscal Year to date and recommendations as to any necessary or advisable revisions of rates and charges and such other advices and recommendations as they may deem desirable; and

(g) the findings of the Consulting Engineer whether the properties of the Systems have been maintained in good repair and sound operating condition, and their 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 Authority further covenants that the Consulting Engineer and other Consultants shall at all times have free access to all properties of the Systems and every part thereof for the purposes of inspection and examination, and that its books, records and accounts may be examined by the Consulting Engineer and other Consultants at all reasonable times.

Insurance.

The Authority covenants that it will at all times carry or cause to be carried insurance, with a responsible insurance company or companies, approved by an Insurance Consultant, authorized and qualified under the laws of the Commonwealth of Puerto Rico to assume the risk thereof, covering such properties belonging to the Systems as are customarily insured, and against loss or damage from such causes as are customarily insured against, by the Authority in its insurance program. The Authority shall employ an Insurance Consultant to review the insurance program of the Authority from time to time (but not less frequently than biennially). If the Insurance Consultant makes recommendations for the increase of any coverage, the Authority shall increase or cause to be increased such coverage in accordance with such recommendations, subject to a good faith determination of the Authority that such recommendations, in whole or in part, are in the best interests of the Authority. Notwithstanding anything in this section to the contrary, the Authority shall have the right, without giving rise to an Event of Default, solely on such account, (i) to maintain insurance coverage below that most recently recommended by Insurance Consultant, if the Authority furnishes to the Trustee a report of the Insurance Consultant to the effect that the issuance so provided, affords either the greatest amount of coverage available for the risk being insured against at rates which in the judgment of the Insurance Consultant are reasonable in connection with reasonable and appropriate risk management.

All insurance policies shall be to the extent practicable for the benefit of the Authority, the Trustee and other interested parties, as their interests may appear, shall be made payable to the Authority or other owners of portions of the Systems, and shall be deposited with the Authority or other officer of the Board designated for said purpose. The proceeds of any and all such insurance shall be deposited by the Authority in the name of the Authority with a Qualified Depositary.

The Authority covenants that, immediately after any loss or damage to any properties of the Systems resulting from any cause, whether or not such loss or damage shall be covered by insurance, it will cause its engineers to prepare plans and specifications for repairing, replacing or reconstructing (either in accordance with the original or a different design) the damaged or destroyed property, and that it will forthwith commence or cause to be commenced and diligently prosecute or cause to be diligently prosecuted the repair, replacement or reconstruction of the damaged or destroyed property unless it shall determine that the repair, replacement or reconstruction of such property is not essential to the efficient operation of the Systems, in which case the proceeds of insurance shall be deposited in the Capital Improvement Fund.

Except as provided in the foregoing paragraph, the proceeds of all insurance referred to in this section shall be available for, and shall to the extent necessary be applied to, the repair, replacement or reconstruction of the damaged or destroyed property, and shall be paid out in such manner provided above for payments from the Construction Fund. If such proceeds are more than sufficient for such purpose, the balance remaining shall be deposited to the credit of the Capital Improvement Fund. If such proceeds shall be insufficient for such purpose, the deficiency may be supplied out of moneys in the Capital Improvement Fund.

Notwithstanding the foregoing provisions of this section, the Authority may institute a self-insurance program with regard to such risks as shall be consistent with the practices of utilities operating in a manner similar to the Systems as shall be approved by a Consultant.

Insurance Policies.

Within the first ninety (90) days of each Fiscal Year the Authority shall mail to the Trustee and the Consulting Engineer a schedule of all insurance policies referred to in the section entitled "Insurance" above which are then in effect, stating with respect to each policy the name of the insurer, the amount, number and expiration date, and the hazards and risks covered thereby. All insurance policies shall be open to the inspection of the Holders of Bonds and their representatives at all reasonable times. The Authority is authorized to demand, collect, sue and receipt for any insurance money which may become due and payable under any policies payable to the Authority.

Protection of Security; No Impairment.

(a) The Revenues and other moneys, securities and funds pledged under the Trust Agreement are and will be free and clear of any pledge, lien, charge or encumbrance thereon or with respect thereto prior to, or of equal rank with, the pledge created by the Trust Agreement, except as otherwise expressly provided in the Trust Agreement, and all action on the part of the Authority to that end has been duly and validly taken. The Bonds are and will be valid and legally enforceable obligations of the Authority in accordance with their terms and the terms of the Trust Agreement. The Authority shall at all times, to the extent permitted by law, defend, preserve and protect the pledge of the Revenues and other moneys, securities and funds pledged under the Trust Agreement and each Supplemental Agreement and all the rights of the holders of Indebtedness to the Trust Agreement against all claims and demands of all persons whomsoever.

(b) The Authority further covenants and agrees that, so long as any Indebtedness shall be Outstanding, none of the Revenues will be used for any purpose other than as provided in the Trust Agreement, and that no contract or contracts will be entered into or any action taken by which the rights of the Trustee or of the Holders might be impaired or diminished. Any resolution adopted by the Board authorizing the issuance of a Series of Bonds or any Supplemental Agreement executed by the Authority for such purpose shall, for all purposes, be deemed part of the Trust Agreement and shall constitute a contract for the benefit of the Holders of said Series. The Trust Agreement and any such resolution may be supplemented and amended only in accordance with the provisions relating to Supplemental Agreements in the Trust Agreement, except for supplements and amendments adopted prior to the issuance of the applicable Series of Bonds, which may be adopted without restriction.

Accounts and Records.

(a) The Authority further covenants that its accounts will be kept according to standard practices for public utility systems similar to the properties and business of the Authority and applicable in such circumstances, and in such manner as appropriate to segregate, insofar as advisable, the accounts in respect of the different classes of its operations, projects, undertakings and activities, that it will keep accurate records and accounts of all items of cost and expenditures relating to the Systems and to each integral unit of said Systems, the Revenues and the application of such Revenues, and the number of consumers, and that it will keep such records and accounts with respect to the physical properties comprising part of the Systems in such manner that it will be possible at all times to identify both the amounts and the items of all additions and retirements.

(b) The Authority further covenants that on or before each Deposit Date, it shall provide to the Trustee, the Consulting Engineer, other Consultants, if any, and Government Development Bank for Puerto Rico (i) for the period commencing on the prior Deposit Date to the Business Day prior to such current Deposit Date a statement of (x) Revenues, (y) cash payments for operating and maintenance expenses, and proceeds from the sale of property or other extraordinary revenue items (to the extent not included in Revenues) and (ii) a reconciliation of Revenues and cash payments for operating and maintenance expenses to Current Expenses and Net Revenues for the monthly period ending on the preceding Deposit Date and Fiscal Year-to-date period through such preceding Deposit Date.

(c) The Authority further covenants that in the first month of each Fiscal Year it will cause an audit to be made of its books and accounts relating to the Systems by an independent firm of certified public accountants of suitable experience and responsibility to be chosen by the Executive President. Before the first day of the sixth month following the making of such audit, reports of such audits shall be filed with the Trustee and the Authority, and copies of such reports shall be mailed to the Consulting Engineer and the other Consultants. Such audit reports shall set forth in respect of the preceding Fiscal Year the same matters as are required above for the monthly reports, the findings of such public accountants as to whether the moneys received by the Authority under the provisions of the Trust Agreement during such Fiscal Year or portion of such Fiscal Year for which Bonds have been issued and Outstanding under the Trust Agreement have been applied in accordance with the provisions of the Trust Agreement, whether any obligations for Current Expenses were incurred in the preceding Fiscal Year or portion of such Fiscal Year for which Bonds have been issued and Outstanding under the Trust Agreement, whether the Revenues for the preceding Fiscal Year or portion of such Fiscal Year for which Bonds have been issued and Outstanding under the Trust Agreement, have exceeded or were less than the amount for such Fiscal Year or such portion thereof required pursuant to Rate Covenant as described under "Rate Covenant" in the front section of this Official Statement and whether the Authority is in default in the performance of any of the other covenants contained in the provisions as set forth in the Trust Agreement.

(d) The Authority further covenants that it will cause any additional reports or audits relating to the Systems to be made as required by law and by any applicable rules or regulations of any governmental authority or of any securities exchange on which the Bonds may be listed or traded, and that, as often as may be requested, it will furnish to the Trustee such other information concerning said Systems or the operation thereof as any of them may reasonably request.

(e) The cost of such audits shall be treated as a part of Current Expenses.

No Sale, Lease, or Encumbrances; Exceptions.

Except as expressly permitted in the Trust Agreement, the Authority irrevocably covenants, binds, and obligates itself not to sell, lease, encumber, or in any manner dispose of the Systems as a whole or in part until all of the Indebtedness and all interest thereon shall have been paid in full or provision for such payment has been duly made in accordance with the section entitled "Discharge of Agreement" below. The Authority shall have and reserves the right, however, to sell, lease, or otherwise dispose of any of the property comprising a part of the Systems in the following manner, if any one of the following conditions exists: (i) such property is not necessary for the operation of the Systems; (ii) such property is not useful in the operation of the Systems; (iii) such property is not profitable in the operation of the Systems; or (iv) the disposition of such property will be advantageous to the

Systems and will not adversely affect the security for the Bondholders. All proceeds of any such sale shall be deposited in the Capital Improvement Fund.

Prior to the sale or lease of assets constituting in excess of 3% of the net assets on the Authority's most recent audited balance sheet to an entity other than a political subdivision, authority or agency the Authority shall:

(i) obtain a written report of the Consultant, describing the financial impact of any such sale or lease on the Revenues, Net Revenues, and balance sheet of the Authority;

(ii) obtain a written report of the Consultant, setting forth alternatives to the proposed sale or lease of such assets and comparing such alternatives to the proposal;

(iii) obtain an opinion of the Consultant to the effect that such sale or lease will not, in the current or any future Fiscal Year, result in the Authority not meeting the required Rate Covenant or that Net Revenues will be less than 100% of the Annual Debt Service on all Indebtedness to be Outstanding after such sale or lease. In reaching its conclusion, the Consultant shall take into consideration such factors affecting the Net Revenues of the Authority as the Consultant may deem significant, including (A) anticipated diminution of Net Revenues, (B) anticipated increases or decreases in Current Expenses whether or not attributable to such sale or lease, and (C) the reduction in the Annual Debt Service attributable to the application of the sale proceeds to the provision for payment of Indebtedness theretofore Outstanding; and

(iv) make a written determination, approved by the Board that the proposed sale or lease is more beneficial than (a) not entering into such sale or lease and (b) entering into one of the alternatives reviewed and presented by the Consultant.

The Authority reserves the right to sell any portion of the Systems to any political subdivision or authority or agency of one or more political subdivisions of the Commonwealth of Puerto Rico, provided that there shall be first filed with the Authority: (i) an opinion of Bond Counsel to the effect that such sale will not adversely affect the extent to which interest on any tax-exempt bonds is excluded from gross income for federal income tax purposes; and (ii) an opinion of a Consultant to the effect that such sale will not, in the current or any future Fiscal Year, result in Net Revenues not meeting the required Rate Covenant or that Net Revenues will be less than 100% of the Annual Debt Service on all Indebtedness to be Outstanding after such sale. In reaching its conclusion, the Consultant shall take into consideration such factors as the Consultant may deem significant, including (i) anticipated diminution of Net Revenues, (ii) anticipated increases or decreases in Current Expenses whether or not attributable to such sale, and (iii) reduction in the Annual Debt Service attributable to the application of the sale proceeds to the provision for payment of Indebtedness theretofore Outstanding. Such sale may include a partial interest in a water or sewer facility owned or to be owned in whole or in part by the Authority. All proceeds of any such sale shall be deposited in the Capital Improvement Fund.

The Authority reserves the right to transfer the Systems as a whole to any political subdivision or authority or agency of one or more political subdivisions of the Commonwealth of Puerto Rico to which may be delegated the legal authority to own and operate the Systems, or any portion thereof, on behalf of the public, and which undertakes in writing, filed with the Authority, the Authority's obligations under the Trust Agreement, provided that there shall be first filed with the Authority: (i) an opinion of Bond Counsel to the effect that such transfer will not adversely affect the extent to which interest on any tax-exempt bonds is excluded from gross income for federal income tax purposes; and (ii) an opinion of a Consultant expressing the view that such transfer will not result in any diminution of Net Revenues to the extent that the Authority could not meet the required Rate Covenant or that such Net Revenues will be less than 100% of the Annual Debt Service on all Indebtedness to be Outstanding after such transfer, in the then current or any succeeding Fiscal Year. In reaching this conclusion, the Consultant shall take into consideration such factors as the Consultant may deem significant, including any rate schedule to be imposed by the transferee political subdivision, authority, or agency.

Authority Not to Furnish Free Service; Enforcement of Accounts Due.

So long as any Bonds issued pursuant to the Trust Agreement are Outstanding, the Authority will not furnish or supply water or any other commodity, service or facility furnished by it or in connection with the operation of the Systems, free of charge to any person, firm or corporation, public or private, and the Authority will promptly enforce the payment of any and all accounts owing to the Authority by reason of the ownership and operation of the Systems.

Events of Default.

Each of the following events shall be an Event of Default:

(a) default in the due and punctual payment of the principal of or premium, if any, on any Bonds or Other System Indebtedness whether at maturity, upon termination or call for redemption or otherwise; or

(b) default in the due and punctual payment of the interest on any Bonds or Other System Indebtedness; or

(c) the Authority shall for any reason be determined to be incapable by a court, governmental entity or agency of competent jurisdiction of fulfilling or shall not have full power and authority to fulfill its obligations under the Trust Agreement; or

(d) an order or decree shall be entered, with the consent or acquiescence of the Authority, appointing a receiver or receivers of the Systems or any part thereof or of the Revenues, or if such order or decree, having been entered without the consent or acquiescence of the Authority, shall not have been vacated, discharged or stayed on appeal within ninety (90) days after the entry thereof; or

(e) any proceeding shall be instituted, with the consent or acquiescence of the Authority, for the purpose of effecting a composition between the Authority and its creditors or for the purpose of adjusting the claims of such creditors, pursuant to any Federal or Commonwealth of Puerto Rico statute now or hereafter enacted, if the claims of such creditors are under any circumstances payable out of the Revenues and if said proceeding shall not have been discharged within ninety (90) days after the institution thereof, or if any such proceeding, having been instituted without the consent or acquiescence of the Authority, shall not be contested in good faith; or

(f) the Authority shall default in the due and punctual performance of any other of the covenants, conditions, agreements and provisions contained in the Bonds or in the Trust Agreement on the part of the Authority to be performed, and such default shall continue for thirty (30) days after written notice specifying such default and requiring same to be remedied shall have been given to the Authority by the Trustee, which may give such notice in its discretion and shall give such notice at the written request of the Holders of not less than ten per cent (10%) in principal amount of the Senior Bonds then Outstanding; provided, however, if the default specified in this clause (f) shall be of a type that cannot be remedied within thirty (30) days, it shall not constitute an event of default if the Authority shall begin diligently to remedy such default within such thirty-day period.

In no event shall the failure to pay principal of or interest on Commonwealth Guaranteed Indebtedness or Commonwealth Supported Obligations be an Event of Default under the Trust Agreement.

Extended Interest Payments.

In case the time for the payment of the interest on any Bond shall be extended, whether or not such extension be by or with the consent of the Authority, such interest so extended shall not be entitled in case of default under the Trust Agreement to the benefit or security of the Trust Agreement except subject to the prior payment in full of the principal of all Indebtedness then Outstanding and of all interest the time for the payment of which shall not have been extended.

Acceleration.

Upon the occurrence and continuation of an Event of Default, except for an Event of Default described in clause (f) of the section entitled "Events of Default" above, the Trustee may (and if requested by the Holders of not less than 25% in aggregate principal amount of Senior Indebtedness (or if no Senior Indebtedness are then Outstanding, of Senior Subordinate Indebtedness) then Outstanding shall) by written notice to the Authority, declare the entire unpaid principal of the Bonds due and payable and, thereupon, the entire unpaid principal of the Bonds shall forthwith become due and payable. Upon any such declaration, on the first Business Day of each month, the Trustee (i) shall pay to the Authority, an amount of Revenues equal to the amount set forth in the applicable Annual Budget prepared in accordance with subsection (g) of the section entitled "Annual Budget" above to pay Current Expenses of the Systems for such month and (ii) shall pay to the Holders of the Bonds and Other System Indebtedness, but only from the remaining Revenues and other moneys in the Trust Agreement specifically pledged for payments of Bondholders, the entire unpaid principal of and premium, if any, and accrued interest on the Bonds and Other System Indebtedness. If at any time after such a declaration and before the entry of a final judgment or decree in any suit, action or proceeding instituted on account of such default or before the completion of the enforcement of any other remedy under the Trust Agreement, the principal of all Bonds and Other System Indebtedness that have matured or been called for redemption pursuant to any sinking fund provision and all arrears of interest have been paid and any other Events of Default which may have occurred have been remedied, then the Trustee may, by written notice to the Authority, rescind or annul such declaration and its consequences. No such rescission or annulment shall extend to or affect any subsequent default or impair any right consequent thereon. Senior Subordinate Indebtedness may not be accelerated if any Senior Indebtedness are Outstanding. Subordinate Indebtedness may not be accelerated if any Senior Indebtedness or Senior Subordinate Indebtedness are Outstanding.

Other Remedies; Rights of Bondholders.

(a) Upon the occurrence of an Event of Default (other than an Event of Default specified in subsection (f) of the section entitled "Events of Default" above) and until delivery of the documents set forth in paragraph (b) below, amounts on deposit in the Authority Revenue Fund shall be transferred daily to the Trustee for the deposit in the Deposit Fund for application in accordance with the section entitled "Application of Moneys" below.

(b) Amounts on deposit in the Authority Revenue Fund shall continue to be transferred daily to the Deposit Fund and applied in accordance with the section entitled "Application of Moneys" below until there shall have been filed with the Trustee (i) a certificate signed by the Executive President and approved by the Consulting Engineer that (x) the Authority complied with the Rate Covenant for the most recent complete Fiscal Year and (y) no Event of Default (other than an Event of Default under subsection (f) of the section entitled "Events of Default" above) is continuing under the Trust Agreement and (ii) a report of the Consulting Engineer as to the adequacy of existing rates and charges of the Rate Covenant for the then current Fiscal Year and the following Fiscal Year.

(c) Upon the occurrence and continuance of an Event of Default, the Trustee may (and if requested by the holders of not less than 25% in aggregate principal amount of Outstanding Senior Bonds then Outstanding (or if no Senior Bonds are then Outstanding, of Senior Subordinate Bonds) shall proceed to protect and enforce the rights of the Holders by mandamus or other suit, action or proceeding at law or in equity, including an action for specific performance of any covenant or agreement contained in the Trust Agreement.

(d) No remedy conferred by the Trust Agreement upon or reserved to the Trustee and Bondholders is intended to be exclusive of any other remedy, but each such remedy shall be cumulative and shall be in addition to any other remedy given to the Trustee and Bondholders under the Trust Agreement or now or hereafter existing at law, in equity or by statute.

(e) The Holders of a majority in aggregate principal amount of the Senior Bonds then Outstanding under the Trust Agreement shall have the right, subject to the provisions of the Trust Agreement, by an instrument or concurrent instruments in writing executed and delivered to the Trustee, to direct the time, method and place of conducting all remedial proceedings to be taken by the Trustee under the Trust Agreement or exercising any

trust or power conferred upon the Trustee, provided that (i) such direction shall not be otherwise than in accordance with law and the provisions of the Trust Agreement, (ii) subject to the provisions of the Trust Agreement, that the Trustee may take any other action deemed proper by the Trustee which is not inconsistent with such direction and (iii) the Trustee shall have the right not to follow such direction if the Trustee in good faith shall determine that such direction would be prejudicial to Holders not giving such direction or would involve the Trustee in personal liability.

Notwithstanding any other provision in the Trust Agreement, the owner of any Bond shall have the right which is absolute and unconditional to receive payment of the principal of and premium, if any, and interest on such Bond when due (whether at maturity, upon redemption or otherwise) and to institute suit for the enforcement of any such payment, and such right shall not be impaired without the consent of such owner.

Application of Moneys.

(a) Unless the principal of all Bonds shall have become due or shall have been declared due and payable, all amounts on deposit in the Deposit Fund, after payment of the cost and expenses of the proceedings resulting in the collection of such moneys, the expenses, liabilities and advances incurred or made by the Trustee and its fees and the expenses in carrying out the Trust Agreement, shall be applied as follows:

First - To the Authority, in each month, an amount equal to the amount set forth in the Annual Budget prepared in accordance with subsection (g) of the section entitled "Annual Budget" above to pay Current Expenses of the Systems for such month;

Second - To the subaccounts established for each issue of Senior Indebtedness in the Senior Interest Account, (i) an amount equal to the Interest Accrual on all the Outstanding Senior Indebtedness to and including the first day of the next calendar month; (ii) the amount of any payments or reimbursements due in the next ensuing month to each Enhancement Facility Provider to the extent such payment or reimbursement obligation constitutes Senior Indebtedness under the Trust Agreement; and (iii) the amount of any payments due in the next ensuing month under any Hedge Agreement or Qualified Swap secured on a parity with Senior Indebtedness, and all such deposits shall be adjusted to give credit for any other available money then in such interest account or subaccount or otherwise available and designated to be used for such purpose;

Third - To the subaccounts established for each issue of Senior Indebtedness in the Senior Principal Account and Senior Sinking Fund Account, an amount equal to the Principal Accrual on the Outstanding Senior Indebtedness to and including the first day of the next calendar month, and all such deposits shall be adjusted to give credit for any other available money then in the principal or sinking fund account or subaccount or otherwise available and designated to be used for such purpose;

Fourth - To each Account in the Senior Debt Service Reserve Fund, (i) an amount equal to (x) 1/60 of the amount (or such greater amount specified in the Supplemental Agreement authorizing any Senior Bonds), if any, necessary to restore the amount on deposit therein to the related Debt Service Reserve Requirement in the event of an increase in the applicable Debt Service Reserve Requirement upon the issuance of additional Senior Bonds, and (y) except as provided in subsection (c) of the section entitled "Senior Debt Service Reserve Fund" above, 1/12 of the amount, if any, necessary to restore the amount on deposit therein to the related Debt Service Reserve Requirement in the event of any other deficiency and (ii) the amount of proceeds of any Senior Bonds as required by the applicable Supplemental Agreement;

Fifth - To the subaccounts established for each issue of Senior Subordinate Indebtedness in the Senior Subordinate Interest Account, (i) an amount equal to the Interest Accrual on all the Outstanding Senior Subordinate Indebtedness to and including the first day of the next calendar month; (ii) the amount of any payments or reimbursements due in the next ensuing month to each Enhancement Facility Provider to the extent such payment or reimbursement obligation constitutes Senior Subordinate Indebtedness under the Trust Agreement; (iii) the amount of any payments due in the next ensuing month under any Hedge Agreement or Qualified Swap secured on a parity with Senior Subordinate Indebtedness, and all such deposits shall be adjusted to give credit for any other available money then in such interest account or subaccount or otherwise available and designated to be used for such purpose;

Sixth - To the subaccounts established for each issue of Senior Subordinate Indebtedness in the Senior Subordinate Principal Account and Senior Subordinate Sinking Fund Account, an amount equal to the Principal Accrual on the outstanding Senior Subordinate Indebtedness to and including the first day of the next calendar month, and all such deposits shall be adjusted to give credit for any other available money then in the principal or sinking fund account or subaccount or otherwise available and designated to be used for such purpose;

Seventh - To each Account in the Senior Subordinate Debt Service Reserve Fund (i) an amount equal to (x) 1/60 of the amount (or such greater amount specified in the Supplemental Agreement authorizing any Senior Subordinate Bonds), if any, necessary to restore the amount on deposit therein to the related Debt Service Reserve Requirement in the event of an increase in the applicable Debt Service Reserve Requirement upon the issuance of additional Senior Subordinate Bonds, and (y) except as provided in subsection (c) of the section entitled "Senior Subordinate Debt Service Reserve Fund" above, 1/12 of the amount, if any, necessary to restore the amount on deposit therein to the related Debt Service Reserve Requirement in the event of any other deficiency and (ii) the amount of proceeds of any Senior Subordinate Bonds as required by the applicable Supplemental Agreement;

Eighth - To the subaccounts established for each issue of Subordinate Indebtedness in the Subordinate Interest Account, (i) an amount equal to the Interest Accrual on all the Outstanding Subordinate Indebtedness to and including the first day of the next calendar month; (ii) the amount of any payments or reimbursements due in the next ensuing month to each Enhancement Facility Provider to the extent such payment or reimbursement obligation constitutes Subordinate Indebtedness under the Trust Agreement; and (iii) the amount of any payments due in the next ensuing month under any Hedge Agreement or Qualified Swap secured on a parity with Subordinate Indebtedness, and all such deposits shall be adjusted to give credit for any other available money then in such interest account or subaccount or otherwise available and designated to be used for such purpose;

Ninth - To the subaccounts established for each issue of Subordinate Indebtedness in the Subordinate Principal Account and Subordinate Sinking Fund Account, an amount equal to the Principal Accrual on the Outstanding Subordinate Indebtedness to and including the first day of the next calendar month, and all such deposits shall be adjusted to give credit for any other available money then in the principal or sinking fund account or subaccount or otherwise available and designated to be used for such purpose;

Tenth – To each Account in the Subordinate Debt Service Reserve Fund (i) on each Deposit Date an amount equal to (x) 1/60 of the amount (or such greater amount specified in the Supplemental Agreement authorizing such additional Subordinate Bonds), if any, necessary to restore the amount on deposit therein to the related Debt Service Reserve Requirement in the event of an increase in the applicable Debt Service Reserve Requirement upon the issuance of additional Subordinate Bonds, and (y) except as provided in subsection (c) of the section entitled "Subordinate Reserve Fund" above, 1/12 of the amount, if any, necessary to restore the amount on deposit therein to the related Debt Service Reserve Requirement in the event of any other deficiency and (ii) the amount of proceeds of any Subordinate Bonds as required by the applicable Supplemental Agreement;

Eleventh – To the credit of the Operating Reserve Fund, an amount equal to that which is necessary to make the balance on deposit therein equal to the Operating Reserve Requirement;

Twelfth - To the Capital Improvement Fund (i) an amount equal to that which is necessary to make the balance on deposit therein equal to the Capital Improvement Fund Requirement for the Fiscal Year as set forth in the applicable Annual Budget in equal monthly deposits over such Fiscal Year;

Thirteenth - To the Commonwealth Payments Fund (i) (A) any amounts received by the Authority from the Commonwealth of Puerto Rico on account of Outstanding Commonwealth Guaranteed Indebtedness and (B) an amount sufficient to pay (x) the Interest Accrual on Commonwealth Guaranteed Indebtedness in respect of the next Interest Payment Date and (y) the Principal Accrual on Commonwealth Guaranteed Indebtedness in respect of the next principal payment date, and all such deposits in this paragraph shall be adjusted to give credit for any other available money then in such account or otherwise available and

designated to be used for such purpose and (ii) (A) any amounts received by the Authority from the Commonwealth of Puerto Rico on account of Outstanding Commonwealth Supported Obligations and (B) an amount sufficient to pay (x) the Interest Accrual on Commonwealth Supported Obligations in respect of the next Interest Payment Date and (y) the Principal Accrual on Commonwealth Supported Obligations in respect of the next principal payment date, and all such deposits in this paragraph shall be adjusted to give credit for any other available money then in such account or otherwise available and designated to be used for such purpose; and

Fourteenth - To the Surplus Fund, any remaining balance.

(b) If the principal of all the Bonds shall have become due or shall have been declared due and payable, all such moneys shall be applied first, to pay the amount set forth in the Annual Budget prepared in accordance with the section entitled "Annual Budget" above to pay Current Expenses of the Systems on a monthly basis and thereafter, to the payment of the principal and interest then due and unpaid on the Senior Indebtedness, including, to the extent permitted by law, interest on overdue installments of interest, 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 Senior Indebtedness over any other Senior Indebtedness, ratably, according to the amounts due respectively for principal and interest, to the persons entitled thereto, without any discrimination or preference except as to any difference in the respective rates of interest specified in the Senior Indebtedness.

(c) If the principal of all the Bonds shall have become due or shall have been declared due and payable and there is no Senior Indebtedness Outstanding under the Trust Agreement, all such moneys shall be applied first, to pay the amount set forth in the Annual Budget prepared in accordance with the section entitled "Annual Budget" above to pay Current Expenses of the Systems on a monthly basis and thereafter, to the payment of the principal and interest then due and unpaid on the Senior Subordinate Indebtedness, including, to the extent permitted by law, interest on overdue installments of interest, 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 Senior Subordinate Indebtedness over any other Senior Subordinate Indebtedness, ratably, according to the amounts due respectively for principal and interest, to the persons entitled thereto, without any discrimination or preference except as to any difference in the respective rates of interest specified in the Senior Subordinate Indebtedness.

(d) If the principal of all the Bonds shall have become due or shall have been declared due and payable and there is no Senior Indebtedness or Senior Subordinate Indebtedness Outstanding under the Trust Agreement, all such moneys shall be applied first, to pay the amount set forth in the Annual Budget prepared in accordance with the section entitled "Annual Budget" above to pay Current Expenses of the Systems on a monthly basis and thereafter, to the payment of the principal and interest then due and unpaid on the Subordinate Indebtedness, including, to the extent permitted by law, interest on overdue installments of interest, 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 Subordinate Indebtedness over any other Subordinate Indebtedness, ratably, according to the amounts due respectively for principal and interest, to the persons entitled thereto, without any discrimination or preference except as to any difference in the respective rates of interest specified in the Subordinate Indebtedness.

(e) If the principal of all the Bonds shall have become due or shall have been declared due and payable and there is no Senior Indebtedness, Senior Subordinate Indebtedness or Subordinate Indebtedness Outstanding under the Trust Agreement, all such moneys shall be applied first, to pay the amount set forth in the Annual Budget prepared in accordance with the section entitled "Annual Budget" above to pay Current Expenses of the Systems on a monthly basis and thereafter, to the payment of the principal and interest then due and unpaid on the Commonwealth Guaranteed Indebtedness, including, to the extent permitted by law, interest on overdue installments of interest, 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 Commonwealth Guaranteed Indebtedness over any other Commonwealth Guaranteed Indebtedness, ratably, according to the amounts due respectively for principal and interest, to the persons entitled thereto, without any discrimination or preference except as to any difference in the respective rates of interest specified in the Commonwealth Guaranteed Indebtedness.

(f) If the principal of all the Bonds shall have become due or shall have been declared due and payable and there is no Senior Indebtedness, Senior Subordinate Indebtedness, Subordinate Indebtedness or Commonwealth Guaranteed Indebtedness Outstanding under the Trust Agreement, all such moneys shall be applied first, to pay the amount set forth in the Annual Budget prepared in accordance with the section entitled "Annual Budget" above to pay Current Expenses of the Systems on a monthly basis and thereafter, to the payment of the principal and interest then due and unpaid on the Commonwealth Supported Obligations, including, to the extent permitted by law, interest on overdue installments of interest, 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 Commonwealth Supported Obligations over any other Commonwealth Supported Obligations, ratably, according to the amounts due respectively for principal and interest, to the persons entitled thereto, without any discrimination or preference except as to any difference in the respective rates of interest specified in the Commonwealth Supported Obligations.

(g) Whenever moneys are to be applied pursuant to the provisions of this section, such moneys shall be applied at such times and from time to time as the Trustee shall determine, having due regard to the amount of such moneys available for application and the likelihood of additional moneys becoming available for such application in the future. Whenever the Trustee shall apply such moneys, it shall fix the date (which shall be an Interest Payment Date unless it shall deem another date more suitable) on which such application is to be made and on such date interest on the amounts of principal to be paid and shall cease to accrue. The Trustee shall give such notice as it may deem appropriate of the deposit with it of any such moneys and of the fixing of any such date.

Whenever the principal of and premium, if any, and interest on all Indebtedness have been paid under the provisions of this section, all payments required by the terms of any Supplemental Agreement have been paid and all expenses and charges of the Trustee have been paid, any balance remaining in the several funds created by the Trust Agreement shall be paid to the Authority as provided in the Trust Agreement.

Limitation on Suits.

Except to enforce the rights given under the sections entitled "Acceleration" and "Other Remedies; Rights of Bondholders" above, no Bondholder shall have the right to institute any action, suit or proceeding at law or in equity for the enforcement of the Trust Agreement or for the execution of any trust thereof or any other remedy under the Trust Agreement, unless (a) a default has occurred and is continuing of which the Trustee has been notified as provided in subsection (h) of the section entitled "Events of Default" above, or of which by such section it is deemed to have notice, (b) such default has become an Event of Default and the holders of 25% in aggregate principal amount of Senior Bonds (or if no Senior Bonds are then Outstanding, of Senior Subordinate Bonds) then Outstanding have made written request to the Trustee and offered it reasonable opportunity either to proceed to exercise the powers hereinbefore granted or to institute such action, suit or proceeding in its own name, (c) such requesting Bondholders have offered to the Trustee indemnity as provided in the section entitled "Other Remedies; Rights of Bondholders" above, (d) the Trustee has thereafter failed or refused to exercise the powers hereinbefore granted, or to institute such action, suit or proceeding in its, own name, (e) no direction inconsistent with such written request has been given to the Trustee by the holders of a majority in aggregate principal amount of Senior Bonds (or if no Senior Bonds is then Outstanding, of Senior Subordinate Bonds) then Outstanding, and (f) notice of such action, suit or proceeding is given to the Trustee; it being understood and intended that no one or more holders of the Bonds shall have any right in any manner whatsoever to affect, disturb or prejudice the Trust Agreement by its or their action or to enforce any rights under the Trust Agreement except in the manner provided in the Trust Agreement, and that all proceedings at law or in equity shall be instituted and maintained in the manner provided in the Trust Agreement and for the equal benefit of the holders of all Bonds then Outstanding. The notification, request and offer of indemnity set forth above, at the option of the Trustee, shall be conditions precedent to the execution of the powers and trusts of the Trust Agreement and to any action or cause of action for the enforcement of the Trust Agreement or for any other remedy under the Trust Agreement.

Waivers of Events of Default.

The Trustee may in its discretion waive any Event of Default under the Trust Agreement or any action taken pursuant to any Event of Default and rescind any acceleration of maturity of principal of and interest on the Bonds, and shall do so at the request of the Holders of (a) a majority in aggregate principal amount of Senior Bonds

then Outstanding in respect of which default in the payment of principal and/or premium, if any, and/or interest exists, or (b) a majority in aggregate principal amount of Senior Bonds then Outstanding in the case of any other default; provided, however, that:

(1) there shall not be waived without the consent of the Holders of all Senior Bonds then Outstanding (A) any Event of Default in the payment of the principal of any Outstanding Bonds (whether at maturity or by sinking fund redemption), or (B) any default in the payment when due of the interest on any such Bonds unless, prior to such waiver or rescission,

(i) there shall have been paid or provided for all arrears of interest with interest, to the extent permitted by law, at the rate borne by the Bonds on overdue installments of interest, all arrears of principal and premium, if any, and all expenses of the Trustee in connection with such default, and

(ii) in case of any such waiver or rescission or in the case of any discontinuance, abandonment or adverse determination of any proceeding taken by the Trustee on account of any such default, the Authority, the Trustee, and the Holders of Bonds shall be restored to their former positions and rights under the Trust Agreement respectively; and

(2) no acceleration of maturity under the section entitled "Acceleration" above made at the request of the Holders of 25% in aggregate principal amount of Senior Bonds (or if no Senior Bonds is then Outstanding, of Senior Subordinate Bonds) then Outstanding shall be rescinded unless requested by the Holders of at least 25% in aggregate principal amount of Senior Bonds (or if no Senior Bonds are then Outstanding, of Senior Subordinate Bonds) then Outstanding.

No such waiver or rescission relating to the Bonds shall extend to any subsequent or other default or impair any right consequent thereon.

Supplemental Agreements Not Requiring Consent of Holders of Bonds.

The Authority and the Trustee may, without the consent of, or notice to, any of the Bondholders, enter into such Supplemental Agreements as shall not be inconsistent with the intent of the terms and provisions of the Trust Agreement for any one or more of the following purposes:

(a) To cure any ambiguity, formal defect or omission in the Trust Agreement;

(b) To grant to or confer upon the Bondholders any additional rights, remedies, powers or authority that may lawfully be granted to or conferred on the Bondholders;

(c) To add to the covenants and agreements of the Authority in the Trust Agreement other covenants and agreements to be observed by the Authority;

(d) To modify, amend or supplement the Trust Agreement in such manner as required to permit the Authority to comply with the provisions of the Code relating to the rebate to the United States of America of earnings derived from the investment of the proceeds of any Bonds, provided that such modification, amendment or supplement does not materially adversely affect the holders of all Outstanding Bonds;

(e) To modify, amend or supplement the Trust Agreement in such manner as may be required by a Rating Agency to maintain or enhance its rating on the Senior Bonds, provided that such modification, amendment or supplement does not materially adversely affect the Holders of all Outstanding Bonds;

(f) To modify, amend or supplement the Trust Agreement to make any change to the role of the Consulting Engineer as set forth in the section entitled "Retention of Consulting Engineer and Other Consultants" above;

(g) To authorize the issuance of and to secure one or more issues of Bonds pursuant to the provisions of the Trust Agreement;

(h) To notify, amend or supplement the Trust Agreement in such manner as required to implement any agreement with a securities depository relating to a book-entry system to be maintained with respect to any Bonds; and

(i) To modify, amend or supplement the Trust Agreement in any manner that the Trustee concludes is not materially adverse to the Holders of all Outstanding Bonds.

For purposes of this section, any modification, amendment or supplement to the Trust Agreement shall not be deemed to be materially adverse to the Holders of all Outstanding Bonds unless such modification, amendment or supplement results in a downgrade or withdrawal of any then existing rating on Outstanding Bonds.

Supplemental Agreements Requiring Consent of Bondholders.

(a) Exclusive of Supplemental Agreements authorized by the section entitled "Supplemental Agreements Not Requiring Consent of Holders of Bonds" above and subject to the terms and provisions contained in this section, the Holders of not less than a majority in aggregate principal amount of Outstanding Bonds shall have the right from time to time, notwithstanding anything in the Trust Agreement to the contrary, to consent to the execution by the Authority and the Trustee of such other Agreements supplemental to the Trust Agreement as shall be deemed necessary or desirable by the Authority for the purpose of modifying, altering, amending, adding to or rescinding, in any particular, any of the terms or provisions contained in the Trust Agreement and any Supplemental Agreement; provided, however, that nothing in the Trust Agreement shall permit, or be construed as permitting, (i) an extension of the time for payment of the principal of or the interest on any Bonds, (ii) a preference or priority of any Senior Bonds over any other Senior Bonds, (iii) a preference or priority of any Senior Subordinate Bonds over any other Senior Subordinate Bonds, (iv) a preference or priority of any Subordinate Bonds over any other Subordinate Bonds, (v) a reduction in the aggregate principal amount of Bonds required for consent to such Supplemental Agreement, (vi) a reduction in the principal amount of or premium, if any, on any Bonds or the rate of interest thereon, (vii) the creation of any lien or pledge upon the Revenues and the moneys and securities in the funds and accounts under the Trust Agreement other than the lien and pledge permitted by the Trust Agreement or (viii) an extension of time or a reduction in amount of any payment required by any sinking fund that may be applicable to any Bonds, without the consent of the Holders so affected.

(b) If at any time the Authority shall request the Trustee to enter into any such Supplemental Agreement, the Trustee shall cause notice of the proposed execution of such Supplemental Agreement to be sent by registered or certified mail to the registered owner of each Bond at his address as it appears on the registration books. Such notice shall briefly set forth the nature of the proposed Supplemental Agreement and shall state that a copy thereof is on file at the corporate trust office of the Trustee for inspection by all Bondholders. If, within ninety (90) days or such longer period as shall be prescribed by the Authority following the giving of such notice, the Holders of not less than a majority in aggregate principal amount of Outstanding Bonds, or in the case of (a) through (h) above, the holders of all affected Bonds, shall have consented to and approved the execution thereof as provided in the Trust Agreement, no Holder of any Bond shall have any right to object to any of the terms and provisions contained therein, or the operation of the Trust Agreement, or in any manner to question the propriety thereof, or to enjoin or restrain the Trustee or the Authority from executing such Supplemental Agreement or from taking any action pursuant to the provisions thereof. Upon the execution of any such Supplemental Agreement as in this section permitted and provided, the Trust Agreement shall be and be deemed to be modified and amended in accordance therewith.

(c) Bonds owned or held by or for the account of the Authority shall not be deemed Outstanding for the purpose of consent or any calculation of Outstanding Bonds provided for in the Trust Agreement. At the time of any such calculation, the Authority shall furnish the Trustee a certificate of an Authorized Representative of the Authority upon which the Trustee may rely, describing all Bonds so to be excluded.

(d) It shall not be necessary for the consent of the Holders of Bonds under this section to approve the particular form of any proposed supplement or amendment, but it shall be sufficient if such consent shall approve the substance thereof.

(e) For the purposes of the provisions of the Trust Agreement relating to Supplemental Agreements, the purchasers of the Bonds of a Series, whether purchasing as underwriters, for resale or otherwise, upon such purchase, may consent to a modification or amendment permitted by this section in the manner provided in the Trust Agreement, 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 or remarketing of the Bonds of such Series by the Authority.

(f) A Supplemental Agreement may provide that an Enhancement Facility Provider shall have the right to vote in lieu of the holders of the Bonds authorized thereunder.

Intervention by Trustee.

In any judicial proceeding to which the Authority is a party and which in the opinion of the Trustee has a substantial bearing on the interests of the Bondholders, the Trustee may intervene on behalf of the Bondholders and, subject to the provisions of the Trust Agreement, shall do so if requested by the holders of 25% in aggregate principal amount of Senior Bonds (or if no Senior Bonds is then Outstanding, Senior Subordinate Bonds) then Outstanding.

Resignation by Trustee.

The Trustee may at any time resign from the trusts created by the Trust Agreement by giving thirty (30) days' notice to the Authority, provided that such resignation shall not take effect until the appointment of a successor or temporary Trustee by the Bondholders, the Authority or a court of competent jurisdiction.

Removal of Trustee.

The Trustee may be removed at any time (a) by an instrument or concurrent instruments in writing delivered to the Trustee and the Authority, and signed by the owners of a majority in aggregate principal amount of Senior Bonds (or if no Senior Bonds is then Outstanding, Senior Subordinate Bonds) then Outstanding, or (b) by the Authority by notice in writing given by an Authorized Representative of the Authority to the Trustee thirty (30) days before the removal date; provided, however, that the Authority shall have no right to remove the Trustee during any time when an Event of Default has occurred or is continuing or when an event has occurred and is continuing or condition exists that with the giving of notice or the passage of time, or both, would be an Event of Default. The removed Trustee shall return to the Authority the amount of the Trustee's annual fee allocable to the portion of the current year remaining after the removal date. Notwithstanding the foregoing, nothing contained in the Trust Agreement shall relieve the Authority of its obligation to pay the Trustee's fees and expenses incurred to the date of such removal. Such removal shall take effect upon the appointment of a successor Trustee or the earlier appointment of a temporary Trustee by the Bondholders, the Authority or a court of competent jurisdiction.

Appointment of Successor Trustee by Bondholders; Temporary Trustee.

In case the Trustee under the Trust Agreement shall resign, be removed, be dissolved, be in course of dissolution or liquidation or otherwise become incapable of acting under the Trust Agreement, or in case it shall be taken under the control of any public officer or officers or of a receiver appointed by a court, a successor may be appointed by the owners of a majority in aggregate principal amount of Senior Bonds (or if no Senior Bonds is then Outstanding, Senior Subordinate) then Outstanding, by an instrument or concurrent instruments in writing signed by such owners; provided, however, that in case of such vacancy the Authority, by an instrument signed by its General Manager and attested by the Secretary of the Authority under its seal, may appoint a temporary Trustee to fill such

vacancy until a successor Trustee shall be appointed by the bondholders in the manner provided above; and any such temporary Trustee so appointed by the Authority shall immediately and without further act be superseded by the Trustee so appointed by such bondholders. Every such Trustee appointed pursuant to this section shall be, if there be such an institution willing, qualified and able to accept the trust upon reasonable or customary terms, a bank or trust company having a combined capital, surplus and undivided profits of not less than $50,000,000 (or whose obligations under the Trust Agreement are guaranteed by a bank or trust company duly authorized to exercise corporate trust powers and subject to examination by federal or state authority, of good standing, and having at the time of the appointment of such Trustee, a combined capital and surplus of at least such amount).

Discharge of Agreement.

If (a) (1) all Bonds issued under the Trust Agreement shall have became due and payable in accordance with their terms or otherwise as provided in the Trust Agreement or have been duly called for redemption or irrevocable instructions to call the Bonds issued under the Trust Agreement for redemption have been given by the Authority to the Trustee, and (2) the Trustee holds for such purpose cash or Defeasance Obligations, the principal of and the interest on which, as verified by a licensed independent certified public accountant (that carries errors and omissions insurance) reasonably acceptable to the Trustee and the Authority, at maturity will be sufficient (without reinvestment) (A) to redeem all Bonds issued under the Trust Agreement that have been called for redemption, or for which such irrevocable instructions have been given, on the date set for such redemption, (B) to pay at maturity all Bonds issued under the Trust Agreement not irrevocably called for redemption, (C) to pay interest accruing on all Bonds issued under the Trust Agreement prior to their redemption or payment at maturity, (D) to make all payments required by the terms of any Supplemental Agreement, and (E) to pay the Trustee's fees and expenses and any other fees and expenses for which the Authority is responsible under the Trust Agreement, including the costs and expenses of canceling and discharging the Trust Agreement, and (b) the Trustee shall have received notification from the Holders of all other Indebtedness that such Indebtedness has been paid, or payment has been provided for such Indebtedness, in accordance with the documents related thereto, then the Trustee shall, at the expense of the Authority, cancel and discharge the Trust Agreement and execute and deliver to the Authority such instruments in writing as shall be necessary to cancel the lien of the Trust Agreement, and assign and deliver to the Authority any property at the time subject to the Trust Agreement that may then be in its possession, except moneys or securities in which such moneys are invested which are held by the Trustee for the payment of principal, or premium, if any, or interest on the Bonds issued under the Trust Agreement;

Any Outstanding Bond, or portion thereof in any denomination authorized by the Trust Agreement, shall be deemed to have been paid within the meaning and with the effect expressed in this section when the whole amount of the principal of and interest on such Bond or such portion shall have been paid or duly provided for and the conditions set forth in clause (c) below have been satisfied or when (a) in the event such Bond or such portion shall have been duly called for redemption or irrevocable instructions to call such Bond or such portion for redemption shall have been given to the Trustee by the Authority, (b) whether or not such Bond or portion thereof has been so called for redemption, there shall have been deposited with the Trustee either moneys in an amount which shall be sufficient, or Defeasance Obligations, which shall not contain provisions permitting the redemption thereof at the option of the issuer, the principal of and the interest on which when due, and without any reinvestment thereof, will provide moneys which, together with the moneys, if any, deposited with or held by the Trustee available therefor, shall be sufficient, to pay when due the principal of and premium, if any, and interest due and to become due on such Bond or such portion on or prior to the maturity or redemption date thereof, and (c) in the event such Bond or such portion does not mature and is not to be redeemed within the next succeeding 60 days, the Authority shall have given the Trustee irrevocable instructions to give, as soon as practicable, a notice to the Holder of such Bond or such portion by first-class mail, postage prepaid, stating that the deposit of moneys or Defeasance Obligations required by clause (b) of this paragraph has been made with the Trustee and that such Bond or such portion is deemed to have been paid in accordance with this section and stating the maturity or redemption date upon which moneys are to be available for the payment of the principal of and premium, if any, and interest on such Bond or such portion.

The moneys and Defeasance Obligations deposited with the Trustee pursuant to this section and all payments of principal of or interest on any such Obligations shall not be withdrawn or used for any purpose other than, and shall be held in trust for, the payment of the principal of and premium, if any, and interest on said Bonds, or portions thereof, deemed to have been paid in accordance with this section. If Bonds, or portions thereof, are deemed to have been paid in accordance with the provisions of the Trust Agreement by reason of the deposit with

the Trustee of moneys or Defeasance Obligations and the Trustee has received an opinion of counsel satisfactory to it as to such deemed payment, no amendment to the provisions of this section which would adversely affect the Holders of such Bonds, or portions thereof, shall be made without the consent of each Holder affected thereby.

For purposes of determining whether any Outstanding Variable Rate Indebtedness is deemed paid and discharged pursuant to this section, such Variable Rate Indebtedness shall be deemed to bear interest at the maximum rate of interest such Variable Rate Indebtedness may bear pursuant to the applicable Supplemental Agreement.

Subordination.

(a) Senior Subordinated Indebtedness, Subordinated Indebtedness, Commonwealth Guaranteed Indebtedness and Commonwealth Supported Obligations (collectively, the "Subordinated Obligations") shall to the extent provided in the Trust Agreement be subordinate and subject in right of payment to the prior payment in full of the Senior Indebtedness, and the Holder of any Subordinated Obligation, whether upon original issue or upon transfer or assignment thereof, accepts and agrees to be bound by such provision. The Indebtedness evidenced by Subordinated Indebtedness shall to the extent provided in the Trust Agreement be subordinate and subject in right of payment to the prior payment in full first of Senior Indebtedness and then of the Senior Subordinated Indebtedness, and the Holder of any Subordinate Indebtedness, whether upon original issue or upon transfer or assignment thereof, accepts and agrees to be bound by such provision.

(b) Upon any payment or distribution of assets of the Authority upon any dissolution or winding up or total or partial liquidation of the Authority whether in bankruptcy, insolvency or receivership proceedings, or otherwise,

(1) all Senior Indebtedness shall first be paid or duly provided for to the extent of such payment or distribution before any payment is made upon the indebtedness evidenced by the Subordinated Obligations;

(2) any payment or distribution of assets of the Authority of any kind or character, whether in cash, property or securities, to which the Holders of the Subordinated Obligations or the Trustee would be entitled except for the provisions in the Trust Agreement relating to subordination, including any such payment or distribution which may be payable or deliverable by reason of the payment of any other indebtedness of the Authority being subordinated to the payment of the Subordinated Obligations, shall be paid by the liquidating trustee or agent or other person making such payment or distribution, whether a trustee in bankruptcy, a receiver or liquidating trustee or otherwise, directly to the Holders of Senior Indebtedness, to the extent necessary to pay or provide for the payment of all Senior Indebtedness in full before any payment is made upon the indebtedness evidenced by the Subordinated Obligations; and

(3) in the event that, notwithstanding the foregoing, upon any such dissolution or winding up or liquidation any payment or distribution of assets of the Authority of any kind or character, whether in cash, property or securities, including any such payment or distribution which may be payable or deliverable by reason of the payment of any other indebtedness of the Authority being subordinated to the payment of the Subordinated Obligations, shall be received by the Trustee or by the Holders of the Subordinated Obligations before all Senior Indebtedness are paid or duly provided for in full, such payment or distribution shall be paid over to the Holders of such Senior Indebtedness for application to the payment thereof until such Senior Indebtedness shall have been paid or provision for such payment shall have been made in full.

Upon any payment or distribution of assets of the Authority referred to in this section, the Trustee and the Holders of the Subordinated Obligations shall be entitled to rely upon a certificate of the liquidating trustee or agent or other person making any payment or distribution to the Trustee or the Holders of the Subordinated Obligations for the purpose of ascertaining the persons entitled to participate in such payment or distribution, the Holders of Senior Indebtedness and other indebtedness of the Authority, the amount thereof or payable thereon, the amount or amounts paid or distributed thereon and all other facts pertinent thereto, or to the provisions of the Trust Agreement.

(c) (1) In the event that any Subordinated Obligation is declared due and payable before its expressed maturity because of the occurrence of an event of default (under circumstances when the provisions of subsection (b) above shall not be applicable), the owners of all Senior Indebtedness outstanding at the time such Subordinated Obligation becomes due and payable because of the occurrence of such an Event of Default shall be entitled to receive payment in full of all principal of and interest on all such Indebtedness then due and payable before the Holder of such Subordinated Obligation is entitled to receive any accelerated payment from the Revenues and other moneys pledged to Senior Indebtedness under the Trust Agreement of principal (and premium, if any) or interest upon such Subordinated Obligation.

(2) If any Event of Default specified in the section entitled "Events of Default" above with respect to the Senior Indebtedness shall have occurred and be continuing (under circumstances when the provisions of subsection (b) above shall not be applicable), the owners of all Senior Indebtedness then Outstanding shall be entitled to receive payment in full of all principal of and interest on all such Indebtedness as the same become due and payable before the Holders of the Subordinated Obligations are entitled to receive, subject to the provisions of (3) below, any payment from the Revenues or other moneys pledged to Senior Indebtedness under the Trust Agreement of principal (and premium, if any) or interest upon the Subordinate Obligations.

(3) The Subordinated Obligations may provide that the provisions of subsection (b) and (c) are solely for the purpose of defining the relative rights of the owners of Senior Indebtedness on the one hand, and the Holders of Subordinated Obligations on the other hand, and that nothing therein shall impair, as between the Authority and the Holders of the Subordinated Obligations, the obligation of the Authority, which is unconditional and absolute, to pay to the Holders thereof the principal thereof and premium, if any, and interest thereon in accordance with their terms, nor shall anything therein prevent the Holders of the Subordinated Obligations from exercising all remedies otherwise permitted by applicable law or thereunder upon default thereunder, subject to the rights under subsections (b) and (c) of the owners of Senior Indebtedness to receive cash, property or securities from the funds pledged to Senior Indebtedness under the Trust Agreement otherwise payable or deliverable to the Holders of the Subordinated Obligations; and the Subordinated Obligations may provide that, insofar as a trustee or paying agent for such Subordinated Obligations is concerned, the foregoing provisions shall not prevent the application by such trustee or paying agent of any moneys deposited with such trustee or paying agent for the purpose of the payment of or on account of the principal (and premium, if any) and interest on such Subordinated Obligations if such trustee or paying agent did not have knowledge at the time of such application that such payment was prohibited by the foregoing provisions.

(d) No owner of Senior Indebtedness shall be prejudiced in this right to enforce subordination of the Subordinated Obligations by any act or failure to act on the part of the Authority.

(e) Any issue of Subordinated Obligations may have such rank or priority with respect to any other issue of Subordinated Obligations as may be provided in the Trust Agreement, in the applicable Supplemental Agreement or in the resolution, trust Agreement or other instrument securing such issue of Subordinated Obligations and may contain such other provisions as are not in conflict with the provisions of the Trust Agreement.

Subrogation of Holders of Subordinated Obligations.

Subject to the payment in full of all Senior Indebtedness as provided in the section entitled "Subordination" above, the Holders of the Subordinated Obligations shall be subrogated to the rights of the Holders of Senior Indebtedness to receive payments or distributions of assets of the Authority made on Senior Indebtedness until the Subordinated Obligations shall be paid in full, and no payments or distributions to the Holders of Senior Indebtedness by the Authority or by the Holders of the Subordinated Obligations shall, as between the Authority and the Holders of the Subordinated Obligations, be deemed to be a payment by the Authority to or on account of the Subordinated Obligations, it being understood that the provisions in the Trust Agreement relating to subordination are intended solely for the purpose of defining the relative rights of the Holders of the Subordinated Obligations and of Senior Indebtedness and nothing in the provisions in the Trust Agreement relating to subordination shall or is intended to, as between the Authority and the Holders of the Subordinated Obligations, impair the obligation of the Authority, which is unconditional and absolute, to pay from the sources provided in the Trust Agreement to the Holders of the Subordinated Obligations the principal of and premium, if any, and interest on the Subordinated Obligations in accordance with their terms, nor shall anything in the provisions in the Trust Agreement relating to

subordination prevent the Trustee or the Holder of any Subordinated Obligation from exercising all remedies otherwise permitted by applicable law upon default under the Trust Agreement, subject to the rights, if any, under the subordination provision of the Trust Agreement of the Holders of Senior Indebtedness in respect of cash, property or securities of the Authority received upon the exercise of any such remedy.

Treatment of Enhancement Facilities.

Any payment made under an Enhancement Facility, to the Holders of the Subordinated Obligations having the benefit of such Enhancement Facility, by the appropriate obligor thereof shall be retained by such Holders for their own account, and no Holder of Senior Indebtedness is to have any right with respect to any such payment so made.

As between the obligor whose Enhancement Facility secures any Subordinated Obligation and the Holder of such Subordinated Obligations, any payment made on such Subordinated Obligation by the Authority which, under the provisions in the Trust Agreement relating to subordination, is required to be paid over to the Holders of the Senior Indebtedness, shall not constitute a payment on such Subordinated Obligation but, instead, shall be treated for all purposes of such Enhancement Facility, as though such payment had not been made by the Authority. Until the Holder of the Subordinated Obligation so guaranteed has received from the Authority, or from such obligor, moneys which such Holder is entitled to retain for its own account, equal in the aggregate to the principal amount of his Subordinated Obligation and any accrued and unpaid interest thereon, such obligor shall remain liable on its Enhancement Facility, and, unless otherwise provided in such Enhancement Facility, shall not be subrogated to any of the rights of the Holder of such Subordinated Obligation.

Amendments to Senior Indebtedness not Requiring Consent of Holders of Subordinate Obligations.

Unless otherwise provided therefor in the Senior Indebtedness, the Holders of the Senior Indebtedness may extend, renew, modify or amend the terms of Senior Indebtedness or any security therefor and release, sell or exchange such security and otherwise deal freely with the Authority, all without notice to or consent of the Holders of the Subordinated Obligations and without affecting the liabilities and obligations of the Authority or the Holders of the Subordinated Obligations.

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March , 2008

Puerto Rico Aqueduct and Sewer Authority
San Jan, Puerto Rico

Ladies and Gentlemen:

We have examined a record of proceedings relating to the issuance by Puerto Rico Aqueduct and Sewer Authority (the "Authority"), a governmental instrumentality of the Commonwealth of Puerto Rico (the "Commonwealth") created pursuant to Act No. 40 of the Legislature of Puerto Rico, approved May 1, 1945, as amended and reenacted (the "Act"), of its $1,316,204,456 aggregate principal amount of Revenue Bonds, Series A (Senior Lien) (the "Bonds").

The Bonds are being issued pursuant to a Master Agreement of Trust, dated as of March 1, 2008 (the "Master Trust Agreement"), by and between the Authority and Banco Popular de Puerto Rico, as trustee thereunder (the "Trustee"), and a series supplement thereto fixing the terms of the Bonds (the "2008 Supplement" and together with the Master Trust Agreement, the "Trust Agreements"). Capitalized terms used herein and not otherwise defined shall have the respective meanings ascribed thereto in the Trust Agreements.

The Bonds are being issued for the purpose of (i) providing a portion of the funds for the Authority's Capital Improvement Program, (ii) funding a deposit to the Senior Debt Service Reserve Fund, (iii) repaying all or a portion of certain bond anticipation notes, (iv) repaying all or a portion of certain outstanding lines of credit provided by Government Development Bank for Puerto Rico, (v) paying all or a portion of the termination payment in connection with certain forward starting interest rate exchange agreements and (vi) paying certain costs of issuance of the Bonds.

The Authority is authorized to issue or incur Indebtedness, in addition to the Bonds, only upon the terms and conditions set forth in the Master Trust Agreement, and such Indebtedness, when issued or incurred, shall, with all the Bonds, be entitled to the equal benefit, protection and security of the provisions, covenants and agreements of the Master Trust Agreement.

Except for the Convertible Capital Appreciation Bonds (defined below), all of the Bonds (the "Current Interest Bonds"), are dated, mature, are payable and bear interest in the manner and upon the terms set forth in the Trust Agreements. The Current Interest Bonds are

issuable in the form of fully registered bonds in denominations of $5,000 each or any integral multiple thereof.

The Bonds maturing on July 1, 2024 (the "Convertible Capital Appreciation Bonds"), are dated, mature, are payable and bear interest in the manner and upon the terms set forth in the Trust Agreements. The Convertible Capital Appreciation Bonds are issuable in the form of fully registered bonds in the maturity payment amount of $5,000 or any integral multiple thereof.

The Bonds will be initially registered in the name of Cede & Co., as registered owner and nominee for The Depository Trust Company, New York, New York, which will act as securities depository therefor.

As Bond Counsel we have examined (i) the Act, (ii) certified copies of the proceedings of the Authority authorizing the issuance of the Bonds (iii) the Master Trust Agreement, (iv) the 2008 Supplement and (v) one each of the Current Interest Bonds and Convertible Capital Appreciation Bonds, as executed and authenticated. We have also examined originals or copies, certified or otherwise identified to our satisfaction, of such instruments, certificates and documents as we have deemed necessary or appropriate for the purposes of rendering the opinions set forth below.

In such examinations, we have assumed the genuineness of all signatures, the authenticity of all documents tendered to us as originals and the conformity to original documents of all documents submitted to us as certified or photostatic copies. As to questions of fact material to our opinion we have relied upon the certified proceedings and other certifications of public officials furnished to us without undertaking to verify the same by independent investigation.

Based upon the foregoing, we are of the opinion, under existing law, as follows:

1. The Act is valid.

2. The proceedings of the Authority in connection with the authorizing, issuance and sale of the Bonds and the authorization, execution and delivery of the Trust Agreements have been validly and legally taken.

3. The Trust Agreements have been duly authorized, executed and delivered by the Authority and constitute legal, valid and binding obligations of the Authority enforceable in accordance with their terms.

4. The Act and such proceedings show lawful authority of the issuance and sale of the Bonds by the Authority.

5. The Bonds have been duly authorized, executed and delivered by the Authority and constitute legal, valid, binding and enforceable obligations of the Authority payable solely from the Revenues and other available funds to the extent provided in the Trust Agreements, and are entitled to the benefit and security of the Trust Agreements.

6. The Bonds do not constitute a debt of the Commonwealth or of any of its municipalities or other political subdivisions, other than the Authority, and neither the

Commonwealth nor any such municipality or other political subdivision, other than the Authority, is liable thereon.

7. The Internal Revenue Code of 1986 (the "Code") sets forth certain requirements which must be met subsequent to the issuance and delivery of the Current Interest 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 Current Interest Bonds to be included in gross income for Federal income tax purposes retroactive to the date of issue of the Current Interest Bonds. The Authority has covenanted in the Trust Agreements to comply with each provision of the Code applicable to the Current Interest Bonds necessary to maintain the exclusion from gross income of the interest on the Current Interest Bonds pursuant to Section 103 of the Code. In addition, the Authority has made certain representations and certifications relating to the Current Interest Bonds in its "Tax Certificate as to Arbitrage and the Provisions of Sections 103 and 141-150 of the Internal Revenue Code of 1986" of even date herewith. We have not undertaken to independently verify the accuracy of those certifications and representations.

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

8. The interest on the Current Interest Bonds is exempt from state, Commonwealth and local income taxation.

9. The Code sets forth certain requirements which must be met subsequent to the issuance and delivery of the Convertible Capital Appreciation Bonds for original issue discount (including Accretions (as defined below)) thereon to be and remain excluded from gross income for Federal income tax purposes. Noncompliance with such requirements could cause such original issue discount (including the Accretions) on the Convertible Capital Appreciation Bonds to be included in gross income for Federal income tax purposes retroactive to the date of issue of the Convertible Capital Appreciation Bonds. The Authority has covenanted in the Trust Agreements to comply with each provision of the Code applicable to the Convertible Capital Appreciation Bonds necessary to maintain the exclusion from gross income of the interest on the Convertible Capital Appreciation Bonds pursuant to Section 103 of the Code. In addition, the Authority has made certain representations and certifications relating to the Convertible Capital Appreciation Bonds in its "Tax Certificate as to Arbitrage and the Provisions of Sections 103 and 141-150 of the Internal Revenue Code of 1986" of even date herewith. We have not undertaken to independently verify the accuracy of those certifications and representations.

Under existing law, assuming compliance with the aforementioned tax covenants and the accuracy of the aforementioned representations and certifications, original issue discount (including the Accretions) on the Convertible Capital Appreciation Bonds is excluded from gross income for Federal income tax purposes under Section 103 of the Code. We are also of the opinion that such interest is not treated as a preference item in calculating the alternative minimum tax imposed under the Code with respect to individuals and corporations. Original

issue discount (including the Accretions) on the Convertible Capital Appreciation Bonds is, however, included in the adjusted current earnings of certain corporations for purposes of computing the alternative minimum tax imposed on such corporations. For purposes hereof, "Accretions" shall mean the difference between the Accreted Value (as defined in the Trust Agreements) at maturity of the Convertible Capital Appreciation Bonds, and the initial principal amount thereof.

10. Bond Counsel is further of the opinion that the difference between the Accreted Value at maturity of the Convertible Capital Appreciation Bonds and the initial offering price to the public (excluding bond houses, brokers or similar persons or organizations acting in the capacity of underwriters or wholesalers) at which price a substantial amount of such Convertible Capital Appreciation Bonds of the same maturity was sold constitutes original issue discount on the Convertible Capital Appreciation Bonds. Bond Counsel is also of the opinion that the difference between the principal amount of the Bonds maturing after July 1, 2025 (the "Discount Bonds and together with the Convertible Capital Appreciation Bonds, the "2008 Discount Bonds") and the initial offering price to the public (excluding bond houses, brokers or similar persons or organizations acting in the capacity of underwriters or wholesalers) at which price a substantial amount of such Discount Bonds of the same maturity was sold constitutes original issue discount on the Discount Bonds. Such original issue discount accrues actuarially on a constant interest rate basis over the term of each 2008 Discount Bond, and the basis of each 2008 Discount Bond acquired at the initial offering price by its initial purchaser will be increased by the amount of the accrued original issue discount. The accrual of original issue discount (including the Accretions) may be taken into account as an increase in the amount of tax-exempt income for purposes of determining various other tax consequences of owning the 2008 Discount Bonds, even though there will not be a corresponding cash payment

11. The original issue discount (including the Accretions) on the 2008 Discount Bonds is exempt from state, Commonwealth and local income taxation.

Except as stated in paragraphs 7 through 11 above, we express no opinion as to any other Federal, state, Commonwealth or local tax consequences of the ownership or disposition of the Bonds. Furthermore, we express no opinion as to any Federal, state, Commonwealth or local tax law consequences with respect to the Bonds, the interest, or the original issue discount (including the Accretions) thereon if any action is taken with respect to the Bonds or the proceeds thereof upon the advice or approval of other bond counsel.

It is to be understood that the rights of the holders of the Bonds and the enforceability thereof may be subject to bankruptcy, insolvency, reorganization, moratorium and other similar laws affecting creditors' rights heretofore or hereafter enacted to the extent constitutionally applicable and that their enforcement may also be subject to the exercise of judicial discretion in appropriate cases.

Respectfully submitted,

ASSURED GUARANTY®
ENDURING FINANCIAL STRENGTH℠
AAA S&P • Aaa Moody's • AAA Fitch

Financial Guaranty Insurance Policy

Issuer: **Policy No.:**

Obligations: **Premium:**

Effective Date:

Assured Guaranty Corp., a Maryland corporation ("**Assured Guaranty**"), in consideration of the payment of the Premium and on the terms and subject to the conditions of this Policy (which includes each endorsement hereto), hereby unconditionally and irrevocably agrees to pay to the trustee (the "**Trustee**") or the paying agent (the "**Paying Agent**") for the Obligations (as set forth in the documentation providing for the issuance of and securing the Obligations) for the benefit of the Holders, that portion of the Insured Payments which shall become Due for Payment but shall be unpaid by reason of Nonpayment.

Assured Guaranty will make such Insured Payments to the Trustee or the Paying Agent on the later to occur of (i) the date applicable principal or interest becomes Due for Payment, or (ii) the Business Day next following the day on which Assured Guaranty shall have Received a completed Notice of Nonpayment. If a Notice of Nonpayment by Assured Guaranty is incomplete or does not in any instance conform to the terms and conditions of this Policy, it shall be deemed not Received, and Assured Guaranty shall promptly give notice to the Trustee or the Paying Agent. Upon receipt of such notice, the Trustee or the Paying Agent may submit an amended Notice of Nonpayment. The Trustee or the Paying Agent will disburse the Insured Payments to the Holders only upon receipt by the Trustee or the Paying Agent, in form reasonably satisfactory to it of (i) evidence of the Holder's right to receive such payments, and (ii) evidence, including without limitation any appropriate instruments of assignment, that all of the Holder's rights to payment of such principal or interest Due for Payment shall thereupon vest in Assured Guaranty. Upon and to the extent of such disbursement, Assured Guaranty shall become the Holder of the Obligations, any appurtenant coupon thereto and right to receipt of payment of principal thereof or interest thereon, and shall be fully subrogated to all of the Holder's right, title and interest thereunder, including without limitation the right to receive payments in respect of the Obligations. Payment by Assured Guaranty to the Trustee or the Paying Agent for the benefit of the Holders shall discharge the obligation of Assured Guaranty under this Policy to the extent of such payment.

This Policy is non-cancelable by Assured Guaranty for any reason. The Premium on this Policy is not refundable for any reason. This Policy does not insure against loss of any prepayment premium or other acceleration payment which at any time may become due in respect of any Obligation, other than at the sole option of Assured Guaranty, nor against any risk other than Nonpayment.

Except to the extent expressly modified by any endorsement hereto, the following terms shall have the meanings specified for all purposes of this Policy. "**Avoided Payment**" means any amount previously distributed to a Holder in respect of any Insured Payment by or on behalf of the Issuer, which amount has been recovered from such Holder pursuant to the United States Bankruptcy Code in accordance with a final, nonappealable order of a court having competent jurisdiction that such payment constitutes an avoidable preference with respect to such Holder. "**Business Day**" means any day other than (i) a Saturday or Sunday, (ii) any day on which the offices of the Trustee, the Paying Agent or Assured Guaranty are closed, or (iii) any day on which banking institutions are authorized or required by law, executive order or governmental decree to be closed in the City of New York or in the State of Maryland. "**Due for Payment**" means (i) when referring to the principal of an Obligation, the stated maturity date thereof, or the date on which such Obligation shall have been duly called for mandatory sinking fund redemption, and does not refer to any earlier date on which payment is due by reason of a call for redemption (other than by mandatory sinking fund redemption), acceleration or other advancement of maturity (unless Assured Guaranty in its sole discretion elects to make any principal payment, in whole or in part, on such earlier date) and (ii) when referring to interest on an Obligation, the stated date for payment of such interest. "**Holder**" means, in respect of any Obligation, the person or entity who, at the time of Nonpayment, is entitled under the terms of such Obligation to payment of principal or interest thereunder, except that Holder shall not include the Issuer or any person or entity whose direct or indirect obligation constitutes the underlying security for the Obligations. "**Insured Payments**" means that portion of the principal of and interest on the Obligations that shall become Due for Payment but shall be unpaid by reason of Nonpayment. Insured Payments shall not include any additional amounts owing by the Issuer solely as a result of the failure by the Trustee or the Paying Agent to pay such amount when due and payable, including without limitation any such additional amounts as may be attributable to penalties or to interest accruing at a default rate, to amounts payable in respect of indemnification, or to any other additional amounts payable by the Trustee or the Paying Agent by reason of such failure. "**Nonpayment**" means, in respect of an Obligation, the failure of the Issuer to have provided sufficient funds to the Trustee or the Paying Agent for payment in full of all principal and interest Due for Payment on such Obligation. It is further understood that the term "Nonpayment" in respect of an Obligation includes any Avoided Payment. "**Receipt**" or "**Received**" means actual receipt or notice of or, if notice is given by overnight or other delivery service, or by certified or registered United States mail, by a delivery receipt signed by a person authorized to accept delivery on behalf of the person to whom the notice was given. Notices to Assured Guaranty may be mailed by registered mail or personally delivered or telecopied to it at 1325 Avenue of the Americas, New York, New York 10019, Telephone Number: (212) 974-0100, Facsimile Number: (212) 581-3268, Attention: Risk Management Department - Public Finance Surveillance, with a copy to the General Counsel, or to such other address as shall be specified by Assured Guaranty to the Trustee or the Paying Agent in writing. A Notice of Nonpayment will be deemed to be Received by Assured Guaranty on a given Business Day if it is Received prior to 12:00 noon (New York City time) on such Business Day; otherwise it will be deemed Received on the next Business Day. "**Term**" means the period from and including the Effective Date until the earlier of (i) the maturity date for the Obligations, or (ii) the date on which the Issuer has made all payments required to be made on the Obligations.

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At any time during the Term of this Policy, Assured Guaranty may appoint a fiscal agent (the "**Fiscal Agent**") for purposes of this Policy by written notice to the Trustee or the Paying Agent, specifying the name and notice address of such Fiscal Agent. From and after the date of Receipt of such notice by the Trustee or the Paying Agent, copies of all notices and documents required to be delivered to Assured Guaranty pursuant to this Policy shall be delivered simultaneously to the Fiscal Agent and to Assured Guaranty. All payments required to be made by Assured Guaranty under this Policy may be made directly by Assured Guaranty or by the Fiscal Agent on behalf of Assured Guaranty. The Fiscal Agent is the agent of Assured Guaranty only, and the Fiscal Agent shall in no event be liable to the Trustee or the Paying Agent for any acts of the Fiscal Agent or any failure of Assured Guaranty to deposit, or cause to be deposited, sufficient funds to make payments due under this Policy.

To the fullest extent permitted by applicable law, Assured Guaranty hereby waives, in each case for the benefit of the Holders only, all rights and defenses of any kind (including, without limitation, the defense of fraud in the inducement or in fact or any other circumstance that would have the effect of discharging a surety, guarantor or any other person in law or in equity) that may be available to Assured Guaranty to deny or avoid payment of its obligations under this Policy in accordance with the express provisions hereof. Nothing in this paragraph will be construed (i) to waive, limit or otherwise impair, and Assured Guaranty expressly reserves, Assured Guaranty's rights and remedies, including, without limitation: its right to assert any claim or to pursue recoveries (based on contractual rights, securities law violations, fraud or other causes of action) against any person or entity, in each case, whether directly or acquired as a subrogee, assignee or otherwise, subsequent to making any payment to the Trustee or the Paying Agent, in accordance with the express provisions hereof, and/or (ii) to require payment by Assured Guaranty of any amounts that have been previously paid or that are not otherwise due in accordance with the express provisions of this Policy.

This Policy (which includes each endorsement hereto) sets forth in full the undertaking of Assured Guaranty with respect to the subject matter hereof, and may not be modified, altered or affected by any other agreement or instrument, including, without limitation, any modification thereto or amendment thereof. THIS POLICY IS NOT COVERED BY THE PROPERTY/CASUALTY INSURANCE SECURITY FUND SPECIFIED IN ARTICLE 76 OF THE NEW YORK INSURANCE LAW. This Policy will be governed by, and shall be construed in accordance with, the laws of the State of New York.

IN WITNESS WHEREOF, Assured Guaranty has caused this Policy to be affixed with its corporate seal, to be signed by its duly authorized officer, and to become effective and binding upon Assured Guaranty by virtue of such signature.

ASSURED GUARANTY CORP.

(SEAL)

By:_____
[Insert Authorized Signatory Name]
[Insert Authorized Signatory Title]

Signature attested to by:

_____
Counsel

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