

\$284,755,000
PUERTO RICO AQUEDUCT AND SEWER AUTHORITY
\$159,055,000 Revenue Refunding Bonds, 2008 Series A
\$125,700,000 Revenue Refunding Bonds, 2008 Series B

Guaranteed by the Commonwealth of Puerto Rico

The Revenue Refunding Bonds, 2008 Series A and 2008 Series B, each Guaranteed by the Commonwealth of Puerto Rico (collectively, the “2008 Guaranteed Bonds”), of Puerto Rico Aqueduct and Sewer Authority (the “Authority”), the sole provider of public water and wastewater service in Puerto Rico, are being issued only to residents of the Commonwealth of Puerto Rico pursuant to Resolution No. 1583, adopted December 7, 1995 and amended and restated as of March 7, 2008 (the “Resolution”). The 2008 Guaranteed Bonds will be issued to refinance the Authority’s outstanding \$262,825,000 Revenue Refunding Bonds, Series 1995, Guaranteed by the Commonwealth of Puerto Rico. A glossary of terms not otherwise defined in this Official Statement can be found in *Appendix III*.

The 2008 Guaranteed Bonds and any additional bonds that the Authority may issue from time to time under the Resolution are expected to be payable from the Revenues of the Authority’s Water and Wastewater Systems remaining after payment of Current Expenses, debt service (including maintenance of debt service reserves) on the Authority’s outstanding Indebtedness senior to the 2008 Guaranteed Bonds (including the Authority’s \$1,338,649,456 Revenue Bonds, Series A and Series B expected to be issued simultaneously with the 2008 Guaranteed Bonds and a \$250 million term loan) and amounts required to maintain the Authority’s operating and capital improvement reserves. The Authority is not restricted under the Resolution from issuing or incurring any obligation senior to the 2008 Guaranteed Bonds or any additional bonds issued on a parity with the 2008 Guaranteed Bonds.

The 2008 Guaranteed Bonds are further secured by the guaranty of the Commonwealth, under which the Commonwealth pledges to deposit or advance available funds from the Treasury of the Commonwealth in the sums needed for the payment of principal of and premium, if any, and interest on the 2008 Guaranteed Bonds to the extent Revenues are insufficient therefor and which shall require that such sums be used for such purposes. The good faith and credit of the Commonwealth, as in the case of the Commonwealth’s general obligation bonds, are pledged for such payments on the 2008 Guaranteed Bonds.

The 2008 Guaranteed 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 will accrue from their date of issuance at the annual rates described on the inside front cover, and will be payable monthly, commencing on May 1, 2008.
- They are subject to redemption at the option of the Authority, the earliest redemption date being July 1, 2013, as described herein.
- The inside cover page contains information concerning their maturity schedules, interest rates and yields.
- In the opinion of Cancio Covas & Santiago, LLP, Special Counsel for the Authority, as described herein, under existing statutes, the 2008 Guaranteed Bonds, and the interest thereon, are exempt from Commonwealth of Puerto Rico taxation. Under most circumstances, interest on the 2008 Guaranteed Bonds will be exempt from United States income taxation to residents of Puerto Rico. Interest on the 2008 Guaranteed Bonds is not excludable from gross income for federal tax purposes under Section 103(a) of the United States Internal Revenue Code. See *Tax Matters* herein.
- The Authority expects that the 2008 Guaranteed Bonds will be available for delivery to DTC on or about March 18, 2008.

The issuance of the 2008 Guaranteed 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. Legal matters incident to the validity of the Commonwealth Guaranty on the 2008 Guaranteed Bonds will be passed upon by the Secretary of Justice of the Commonwealth of Puerto Rico. 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 (including certain tax matters) for the Authority.

POPULAR SECURITIES

CITI

**Oriental Financial Services
Corp.**

Santander Securities

**UBS Financial Services
Incorporated of Puerto Rico**

BBVAPR MSD

Eurobank MSD

Lehman Brothers

Merrill Lynch & Co.

Samuel A. Ramírez & Co.

Scotia Capital

Wachovia Capital Markets, LLC

\$284,755,000

PUERTO RICO AQUEDUCT AND SEWER AUTHORITY

\$159,055,000 Revenue Refunding Bonds, 2008 Series A

\$125,700,000 Revenue Refunding Bonds, 2008 Series B

Guaranteed by the Commonwealth of Puerto Rico

Price 100%

Revenue Refunding Bonds, 2008 Series A

\$18,005,000 Term Bonds 5.80% due July 1, 2023; CUSIP No.† 745160QD6

\$52,550,000 Term Bonds 6.05% due July 1, 2028; CUSIP No.† 745160QE4

\$88,500,000 Term Bonds 6.10% due July 1, 2034; CUSIP No.† 745160QF1

Revenue Refunding Bonds, 2008 Series B

\$14,230,000 Term Bonds 5.80% due July 1, 2023; CUSIP No.† 745160PP0

\$41,530,000 Term Bonds 6.05% due July 1, 2028; CUSIP No.† 745160PQ8

\$69,940,000 Term Bonds 6.10% due July 1, 2034; CUSIP No.† 745160PR6

† 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 2008 Guaranteed 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 2008 Guaranteed Bonds as a result of various subsequent actions, including, but not limited to, a refunding in whole or in part of the 2008 Guaranteed Bonds.

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 2008 Guaranteed 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.

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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 Guaranteed Bonds are being issued to provide funds to refinance the Authority's outstanding \$262,825,000 Revenue Refunding Bonds, Series 1995, Guaranteed by the Commonwealth of Puerto Rico (the "1995 Commonwealth Guaranteed Bonds"), in order to achieve cash flow benefits. The pledge of Net Revenues securing the 2008 Guaranteed Bonds is subordinate to any Bonds issued under, or Other System Indebtedness secured by, the Trust Agreement referred to below. On the date of delivery of the 2008 Guaranteed Bonds, the Authority intends to issue its \$1,338,649,456 Revenue Bonds, Series A and Series B (collectively, the

“2008 Senior Bonds”), for the purpose, among others, of financing a portion of the Authority’s CIP.

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 Guaranteed Bonds and the 2008 Senior 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.

	<u>October 31, 2007</u>	<u>As Adjusted</u>
	<u>(in thousands)</u>	
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
	<u>\$1,121,232</u>	<u>\$2,510,089</u>
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	<u>\$2,350,430</u>	<u>\$2,813,235</u>

Security for 2008 Guaranteed Bonds:

Revenue Pledge The 2008 Guaranteed Bonds are payable from and secured by a pledge of the Net Revenues of the Systems remaining after payment of Current Expenses, debt service (including maintenance of debt service reserves) on the Authority’s outstanding Indebtedness senior to the 2008 Guaranteed Bonds (including the 2008 Senior Bonds being issued concurrently with the 2008 Guaranteed Bonds and a \$250 million term loan) and amounts required to maintain the Authority’s operating and capital improvement reserves (all such senior Indebtedness and reserve requirements, “Senior Obligations”).

Commonwealth Guaranty..... Under Act No. 45 of the Legislature of Puerto Rico, approved July 28, 1994, as amended, the full faith, credit and taxing power of the Commonwealth are pledged to the payment of the 2008 Guaranteed Bonds, in the event the Net Revenues of the Authority after payment of all Senior Obligations are insufficient to pay debt service on the 2008 Guaranteed Bonds as the same becomes due. Additional information about the Commonwealth can be found in the Commonwealth Report dated as of January 1, 2008 and included in *Appendix IV*.

Debt Service Reserve	There is no debt service reserve account established for the 2008 Guaranteed 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, in the trust agreement that it is executing in connection with the issuance of the 2008 Senior Bonds (the “Trust Agreement”), to establish and collect rates, fees and charges so that in each Fiscal Year its Revenues will be sufficient to pay Current Expenses and Senior Obligations and annual debt service on the 2008 Guaranteed Bonds (and additional parity bonds issued under the Resolution), and certain Indebtedness subordinate to the 2008 Guaranteed Bonds and to set aside moneys for a rate stabilization fund.
Additional Guaranteed Bonds .	Additional Guaranteed Bonds, secured on a parity with the 2008 Guaranteed Bonds, may be issued for any lawful purpose of the Authority, subject to their being guaranteed by the Commonwealth on the same terms as its guaranty of the 2008 Guaranteed Bonds. The Authority is not restricted under the Resolution from issuing or incurring any Senior Obligations, but such Obligations may only be issued or incurred upon satisfaction of the various financial tests set forth in the Trust Agreement.

Authority Environmental Compliance Responsibilities:

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.

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. See *Environmental Matters*.

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 Guaranteed Bonds or any other outstanding Indebtedness of the Authority.

Risk Factors:

An investment in the 2008 Guaranteed Bonds involves a degree of risk. A purchaser of such Bonds is advised to read *Investment Considerations Relating to the Commonwealth Guaranty* herein for a discussion of certain risk factors, which should be considered in connection with an investment in the 2008 Guaranteed Bonds.

\$284,755,000

PUERTO RICO AQUEDUCT AND SEWER AUTHORITY

\$159,055,000 Revenue Refunding Bonds, 2008 Series A

\$125,700,000 Revenue Refunding Bonds, 2008 Series B

Guaranteed by the Commonwealth of Puerto Rico

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”) only to residents of the Commonwealth of Puerto Rico of \$159,055,000 principal amount of its Revenue Refunding Bonds, 2008 Series A, Guaranteed by the Commonwealth of Puerto Rico (the “2008 Series A Guaranteed Bonds”), and \$125,700,000 principal amount of its Revenue Refunding Bonds, 2008 Series B, Guaranteed by the Commonwealth of Puerto Rico (the “2008 Series B Guaranteed Bonds” and together with the 2008 Series A Guaranteed Bonds, the “2008 Guaranteed Bonds”). Terms used in this Official Statement and not defined shall have the meanings given them in “Definition Of Certain Terms” under *Summary of Certain Provisions of the Resolution* and in *Appendix III – Summary of the Trust Agreement*. Concurrently with the issuance of the 2008 Guaranteed Bonds, the Authority is issuing, only to residents of the Commonwealth of Puerto Rico, its \$1,316,204,456 Revenue Bonds, Series A (Senior Lien) (the “Series A Bonds”) and (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 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 *Investment Considerations Relating to the Commonwealth Guaranty*. In the event the Authority is unable to achieve such success and its Net Revenues are insufficient to enable it to pay debt service on the 2008 Guaranteed Bonds, the Commonwealth will make such payment under its guaranty of such Bonds. See *Commonwealth Guaranty*.

Purpose of and Security for the 2008 Guaranteed Bonds. The 2008 Guaranteed Bonds are being issued under and secured by Resolution No. 1583, adopted by the Authority on December 7, 1995 and amended and restated as of March 7, 2008 (the "Resolution"). The 2008 Guaranteed Bonds and any Additional Bonds issued on a parity therewith under the Resolution before July 1, 2010 and any Guaranteed RUS Bonds (hereinafter mentioned) issued prior to said date are collectively referred to in this Official Statement as the "Guaranteed Bonds". Banco Popular de Puerto Rico serves as successor fiscal agent under the Resolution. Under Act No. 45 of the Legislature of Puerto Rico, approved July 28, 1994, as amended (the "Guaranty Act"), the Commonwealth has unconditionally guaranteed the payment of the principal of and premium, if any, and interest on designated outstanding bonds of the Authority issued or to be issued before July 1, 2010, including the 2008 Guaranteed Bonds. See "*Security for the Guaranteed Bonds - Commonwealth Guaranty of the 2008 Guaranteed Bonds*". Appended to and made a part of this Official Statement in *Appendix IV* is the Commonwealth of Puerto Rico Financial Information and Operating Data Report, dated January 1, 2008 (the "Commonwealth Report"). Information supplemental thereto can be found in *Recent Developments Relating to the Commonwealth* herein.

Under the Resolution, the Authority is permitted to issue additional Guaranteed Bonds on a parity with the 2008 Guaranteed Bonds as long as they are also guaranteed by the Commonwealth of Puerto Rico. In this regard, the Authority has heretofore issued \$243,801,000 principal amount of Revenue Bonds, Guaranteed by the Commonwealth of Puerto Rico, to Rural Utilities Service of the United States Department of Agriculture (together with any additional bonds issued before July 1, 2010 under Resolution No. 1224 referred to below, the "Guaranteed RUS Bonds") under Resolution No. 1224, adopted by the Authority on August 12, 1986, as amended. In addition, certain loans that the Authority has taken from Infrastructure Financing Authority ("PRIFA") to finance certain capital projects under the federal clean and safe drinking water acts are also guaranteed by the Commonwealth. The Authority expects that any Guaranteed RUS Bonds issued and any loans from PRIFA incurred after June 30, 2010 will be Senior Obligations (hereinafter mentioned) with a claim on Authority Revenues ahead of the Guaranteed Bonds, including the 2008 Guaranteed Bonds. See *Debt*.

The 2008 Guaranteed Bonds are being issued to provide funds to refinance, with other available moneys, all of the Authority's outstanding Revenue Refunding Bonds, Series 1995 (the "Refunded Bonds") and are payable from the Net Revenues of the Systems remaining after payment of the Authority's Senior Obligations. The Authority is not restricted under the Resolution from issuing or incurring any obligation senior to the Guaranteed Bonds.

On the date of delivery of the 2008 Guaranteed Bonds, the Authority will also issue the 2008 Senior Bonds for the purpose, among others, of financing and refinancing certain costs associated with its CIP and establishing reserves therefor (collectively, with any indebtedness issued on a parity therewith as permitted under the Trust Agreement hereinafter mentioned, the "Senior Indebtedness") under a trust agreement, dated as of March 1, 2008, as supplemented (the "Trust Agreement"), by and between the Authority and Banco Popular de Puerto Rico, trustee (the "Senior Trustee"). Under the Trust Agreement, in addition to paying the Systems' Current Expenses from Revenues, the Authority is able, upon satisfaction of the financial tests therein set forth, to incur three types of indebtedness (defined as Senior Indebtedness, Senior Subordinate Indebtedness (the Term Loan is Senior Subordinate Indebtedness under the Trust Agreement) and Subordinate Indebtedness) and has secured its repayment obligation for such Indebtedness and its obligation to maintain certain reserves with a pledge of Revenues remaining after payment of such Current Expenses, which pledge is in all respects senior to the Net Revenue pledge securing the Guaranteed Bonds. A summary of the Trust Agreement is attached hereto as *Appendix III*. Collectively, the obligation of the Authority to pay Current Expenses and such Indebtedness and to maintain such reserves is defined as "Senior Obligations" under the Resolution.

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 document, which has been filed with each nationally recognized municipal securities information repository (“NRMSIR”) and is incorporated herein by reference: 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.

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 Guaranteed 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 information 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 information contained in any other subsequently filed document modifies or supersedes such information. Any information so modified or superseded shall be deemed to constitute a part of this Official Statement only as so modified or superseded.

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 Guaranteed 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 Guaranteed Bonds, the Resolution, the Trust Agreement and the Guaranty Act. Such descriptions do not purport to be complete and are qualified in their entirety by reference to such documents. All references to the 2008 Guaranteed Bonds are qualified in their entirety by reference to the definitive form thereof contained in the Resolution. 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 Government Development Bank for Puerto Rico (“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 Fiscal Agent, Popular Center Building, 209 Muñoz Rivera Avenue, Hato Rey, Puerto Rico 00918.

PLAN OF FINANCING

The Authority is issuing the 2008 Guaranteed Bonds to refund all of the Refunded Bonds.

In order to accomplish the refunding of the Refunded Bonds, the Authority will enter into an Escrow Agreement, dated the date of delivery of the 2008 Guaranteed Bonds (the “Escrow Agreement”), with The Bank of New York (the “Escrow Agent”). The Escrow Agreement will create an escrow fund (the “Escrow Fund”) held by the Escrow Agent. The Authority will deposit the net proceeds of the 2008 Guaranteed Bonds and other moneys made available from the defeasance of the Refunded Bonds, with the Escrow Agent, all or a portion of which net proceeds and other available moneys will be invested in Sufficient Government Obligations, the principal of and interest on which when due, together with any uninvested moneys, will provide moneys sufficient to pay the principal of and redemption premiums, if any, and interest on the Refunded Bonds to their respective dates of redemption or payment as set forth in the table below. The Escrow Agent has been given irrevocable instructions to pay or call for redemption the Refunded Bonds in accordance with the schedule of maturities and redemption dates set forth in the table that follows, and the Refunded Bonds will not be subject to redemption other than as provided in such schedule. Upon the issuance of the 2008 Guaranteed Bonds, the Refunded Bonds will, in the opinion of Bond Counsel, no longer be outstanding under the Resolution.

Schedule of Refunded Bonds					
Principal Amount	Maturity (July 1)	Redemption Date	Redemption Price	Redemption Premium	CUSIPs
\$15,915,000	2008	N/A	N/A	N/A	745160MK4
16,735,000	2009	N/A	N/A	N/A	745160ML2
36,200,000	2011*	N/A	N/A	N/A	745160MN8/ 745160MM0
19,915,000	2012	N/A	N/A	N/A	745160MP3
21,160,000	2013	N/A	N/A	N/A	745160MS7
46,085,000	2015	April 18, 2008	100¾%	\$345,637.50	745160MQ1
106,815,000	2019	April 18, 2008	100¾	801,112.50	745160MR9

* The Refunded Bonds maturing July 1, 2011 consist of floating rate/inverse floating rate bonds in the total principal amount of \$36,200,000 (allocated equally between the floating rate and the inverse floating rate) and bearing interest, when the floating rate and inverse floating rate are summed, at a fixed rate. On July 1, 2010, \$17,600,000 principal amount of the Refunded Bonds maturing July 1, 2011 (similarly allocated equally) will be redeemed at a redemption price of 100% in satisfaction of the amortization requirement for said maturity for the fiscal year ending June 30, 2010.

Application of Proceeds of 2008 Guaranteed Bonds

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

Deposit in Escrow Fund.....	\$ 279,522,228.35
Underwriting discount and estimated legal, printing and financing expenses	5,232,771.65
Total.....	\$ 284,755,000.00

SECURITY FOR THE GUARANTEED BONDS

Under the Resolution, the 2008 Guaranteed Bonds and any additional Guaranteed Bonds issued under the Resolution will be payable from the Revenues of the Systems, subject to the prior payment of Current Expenses and other Senior Obligations. Currently, the Trust Agreement and the agreement evidencing the Term Loan are the only instruments under which the Authority may issue, incur or secure Senior Obligations. Set forth below under “Flow of Funds” is the method of application of Revenues of the Authority under the Trust Agreement. The 2008 Guaranteed Bonds and any Additional Bonds issued under the Resolution, along with the Guaranteed RUS Bonds

are “Commonwealth Guaranteed Obligations” under the Trust Agreement. A summary of the Trust Agreement is attached hereto as *Appendix III*.

The Resolution does not contain any limitations on the amount or nature of any Current Expenses or other Senior Obligations that the Authority may issue or incur, but there are financial tests that the Authority must meet under the Trust Agreement before it is permitted to incur Senior Obligations in the form of indebtedness. See *Summary of Certain Provisions of the Resolution, Rate Covenant and Summary of the Trust Agreement in Appendix III*.

Flow of Funds

The principal of and premium, if any, and interest on the Guaranteed Bonds are payable from the Net Revenues of the Systems deposited to the credit of the Commonwealth Payments Fund under the Trust Agreement remaining after payment of the Authority’s Current Expenses and all other Senior Obligations (see paragraph *Fourth* in the next paragraph). The Trust Agreement contemplates the Authority incurring, upon satisfaction of the various financial tests in the Trust Agreement, debt to finance its capital expenditures secured with different liens on the Authority’s Net Revenues all senior to the Guaranteed Bonds.

Under the Trust Agreement, all Revenues are deposited into the Revenue Fund upon receipt. Moneys in the Revenue Fund are applied first 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 and transfer the amount so withdrawn to the Trustee for application as follows:

First, to the credit of the various accounts in the three Bond Funds (Senior, Senior Subordinate and Subordinate) and in the three Debt Service Reserve Funds (Senior, Senior Subordinate and Subordinate) in equal monthly amounts required to allow deposits in the Bond Funds to accrue to cover the next interest payment on the outstanding Senior Obligations and the next principal payment on such Senior Obligations payable from such Funds as well as to restore any balance deficiencies in the Debt Service Reserve Funds;

Second, to the credit of the Operating Reserve Fund in an amount necessary in order to cause the amount of repayments then on deposit in said Fund to equal the Operating Reserve Fund Requirement (including any amounts owing by the Authority under a contemplated five-year, \$150 million Development Bank line of credit or under any other Operating Reserve Facility held for the benefit of the Operating Reserve Fund);

Third, to the credit of the Capital Improvement Fund in 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;

Fourth, to the credit of the Commonwealth Payments Fund *first* in an amount equal to one-sixth of the interest due on all outstanding Commonwealth Guaranteed Indebtedness (including the Guaranteed Bonds) on the next interest payment date and one-twelfth of the principal (or sinking fund) installment due on all outstanding Commonwealth Guaranteed Indebtedness (including the Guaranteed Bonds) on the next principal payment (or mandatory sinking fund redemption) date and *second* in 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

Fifth, any remaining amount 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.

Moneys in the Commonwealth Payments Fund derived from such Net Revenues are subject under the Trust Agreement to being applied to cover any deposit deficiencies in the various Bond Funds referred to in paragraph *First* above before any moneys would be withdrawn for that purpose from the various Debt Service Reserve Funds.

Reserve Fund

There is no debt service reserve fund established under the Resolution.

Rate Covenant

The Authority covenants under the Trust Agreement that it will at all times fix, charge and collect rates, fees, rentals and other charges for the services and facilities furnished by the Systems and, as often as necessary, it will adjust such rates, fees, rentals and charges so that in each Fiscal Year, among other things, Net Revenues shall be sufficient to (A) pay Annual Debt Service on outstanding Senior Obligations in such Year, (B) restore each deficiency in any Debt Service Reserve Account corresponding to such Senior Obligations, (C) deposit the respective required amounts in the Operating Reserve and Capital Improvement Funds, (D) pay Annual Debt Service on Commonwealth Guaranteed Indebtedness (including the Guaranteed Bonds) and Commonwealth Supported Obligations and (E) deposit required amounts in the Rate Stabilization Account.

Holders of the Guaranteed Bonds are not authorized under the Resolution to bring suit to compel the Authority's compliance with its Rate Covenant. This right is given to the holders of Bonds and Other System Indebtedness on the terms set forth in the Trust Agreement. See *Summary of the Trust Agreement in Appendix III*.

Additional Guaranteed Bonds

The Authority may issue Guaranteed Bonds in addition to the 2008 Guaranteed Bonds under the Resolution for any lawful purpose, such as to finance Improvements to the Systems or to refinance other Authority indebtedness; provided, however, that the Legislature shall have extended the Guaranty Act (as defined below) to cover principal of and interest on such Bonds or shall have enacted other legislation to guarantee the payment of principal of and interest on such Bonds at least to the same extent as the 2008 Guaranteed Bonds are guaranteed under the Guaranty Act. Currently, the Guaranty Act extends the Commonwealth guaranty to obligations of the Authority that are expressly designated by it to be covered by said guaranty, such as the 2008 Guaranteed Bonds, and that are issued or incurred before July 1, 2010.

Commonwealth Guaranty of the 2008 Guaranteed Bonds

As provided in the Guaranty Act, the Commonwealth guarantees, among other things, the payment of the principal of and premium, if any, and interest on the 2008 Guaranteed Bonds. The provisions of the Guaranty Act relating to such guaranty are as follows:

“The Commonwealth of Puerto Rico hereby guarantees the payment of the principal of and premium, if any, of interest on the following bonds and obligations:

“a. The refinancing bonds of the Aqueduct and Sewer Authority, hereinafter the “Authority”, 1995 series; and the Revenue Bonds of the Authority, RD Issues before FmHA, series K to Z; series A, AA, BB and CC, “Special Obligations Bonds”, (U.S. Department of Agriculture, Rural Development) and all loans granted by State Revolving Funds, pursuant to the federal Clean Water Act of 1972, as amended, and the federal Drinking Water Act of 1996, as amended (the ‘bonds and obligations in effect’).

“b. All bonds or other obligations that may be issued by the Authority, the U.S. Department of Agriculture, Rural Development and the loans that may be granted by the State Revolving Funds to the Authority, under the above-cited federal laws in subsection (a) of this Section after the effective date of this Act until June 30, 2010 (the ‘future bonds and obligations’). The future bonds or obligations to be covered by this guarantee shall be those specified through a Resolution of the Authority and a statement of said guarantee shall appear on the face of said future bonds or obligations. The guarantee provided in this

Section shall remain in effect as to those bonds covered thereby only for so long as such bonds are considered outstanding under the trust agreements or other agreement pursuant to which such bonds have been or will be issued.

“If, at any time, the revenues, income or any other available funds of the Authority pledged for the payment of principal of and premium, if any, and interest on bonds guaranteed by the Commonwealth of Puerto Rico, under the provisions of this Act are not sufficient to pay such principal, premium, if any, and interest when due, or to maintain a reserve for such purpose, as provided in the trust or other agreement securing such bonds, the Secretary of the Treasury of Puerto Rico shall deposit or advance available funds from the Treasury of Puerto Rico, in the sums needed for the payment of such principal, premium, if any, and interest and to maintain such reserve and shall require that such sums be used for such purposes. In any such event, the Secretary of the Treasury shall notify the Director of the Budget and Management Office of the amounts so advanced, and the Director shall proceed to include them in the General Expenses Budget of the Government of Puerto Rico for the next fiscal year. The good faith and credit of the Commonwealth of Puerto Rico are hereby pledged for such payments.

“Notwithstanding the provisions included in this section, the Authority, or the official, board or body which succeeds in the functions of the Authority may, from time to time, notify, in writing, and with the written approval of the Secretary of the Treasury, that the guarantee authorized herein is transferred for the payment of the principal and premium, if any, and on the interest of any bonds issued or to be issued by any other public corporation to refinance any of the bonds mentioned in the first paragraph of this section; Provided however, that said guarantee shall be kept in effect for any outstanding bond issued to date by the Authority and for refinancing bonds issued by the Authority to refinance any of the outstanding bonds indicated. The other provisions of this section shall be applicable to the bonds issued by the Authority and by that other public corporation.”

The 2008 Guaranteed Bonds have been specified by the Authority to be guaranteed by the Commonwealth under the Guaranty Act. The Guaranty Act originally guaranteed payment of the Refunded Bonds which will be refunded from the proceeds of the 2008 Guaranteed Bonds and certain other available moneys.

Opinion of the Attorney General of the Commonwealth

On or prior to the date of delivery of the 2008 Guaranteed Bonds, the Attorney General of the Commonwealth will render his opinion to the Authority stating:

“I have reviewed Act No. 45 of the Legislature of Puerto Rico, approved on July 28, 1994, as amended (“Act No. 45”), providing for the guaranty by the Commonwealth of Puerto Rico of the payment of the principal of and interest on the outstanding principal amount of Puerto Rico Aqueduct and Sewer Authority Revenue Refunding Bonds, 2008 Series A and Puerto Rico Aqueduct and Sewer Authority Revenue Refunding Bonds, 2008 Series B (collectively, the “outstanding bonds”) and any bonds or other obligations issued by Puerto Rico Aqueduct and Sewer Authority (the “Authority”) prior to July 1, 2010 to which said Commonwealth guaranty is expressly specified by the Authority to apply (collectively, with the outstanding bonds, the “guaranteed bonds”), to the extent that the revenues and other moneys of the Authority pledged to the payment of such principal and interest are not sufficient for that purpose. I have also reviewed the Official Journals of the House of Representatives and the Senate of the Commonwealth of Puerto Rico covering the proceedings taken for the enactment of Act No. 45. Furthermore, I have also examined the Puerto Rico Constitution and such other laws of the Commonwealth of Puerto Rico as I consider necessary for the purpose of the following opinion.

From such examination I am of the opinion that:

“Act No. 45 was enacted in full compliance with the requirement of Article III of the Constitution of the Commonwealth of Puerto Rico and is valid.

“The Commonwealth of Puerto Rico will be obligated to pay the principal and the interest of the guaranteed bonds if and to the extent that the revenues and other moneys of the Authority pledged to the payment of such principal and interest are not sufficient to make such payments as the same become due.

“Any amounts required to be paid by the Commonwealth of Puerto Rico under said guaranty will constitute “public debt” within the meaning of Section 8 of Article VI of the Puerto Rico Constitution which Section provides:

“In case the available revenues including surplus for any fiscal year are insufficient to meet the appropriations made for that year, interest on the public debt and amortization thereof shall first be paid, and other disbursements shall thereafter be made in accordance with the order of priorities established by law.

“This debt will accordingly be entitled to the same priority of payment under said Section as the direct bonded indebtedness of the Commonwealth.

“Because of its sovereign immunity the Commonwealth of Puerto Rico cannot be sued without the consent of the Legislature of Puerto Rico. The Secretary of the Treasury can, however, be required in a court of justice under the provisions of Section 2 of Article VI of the Puerto Rico Constitution to apply the available revenues including surplus to the payment of interest on the public debt and the amortization thereof in any case provided for by Section 8 of Article VI, including any payments required to be made under said guaranty, in an action brought by any holder of guaranteed bonds issued by the Authority and guaranteed pursuant to Act No. 45, previously cited.”

No Events of Default or Acceleration under Resolution

Under the Resolution, there are no events of default, and payment of the principal of the Guaranteed Bonds may not be accelerated even if the Commonwealth does not make payment under the Guaranty Act. A holder of the Guaranteed Bonds (including the 2008 Guaranteed Bonds) is, however, authorized to bring suit against the Commonwealth to compel its payment under the Guaranty Act as described in “Opinion of the Attorney General of the Commonwealth” above.

INVESTMENT CONSIDERATIONS RELATING TO THE COMMONWEALTH GUARANTY

A PURCHASER OF THE 2008 GUARANTEED 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 GUARANTEED 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 AND MAY REQUIRE THE COMMONWEALTH TO HONOR ITS GUARANTY OF THE 2008 GUARANTEED BONDS UNDER THE GUARANTY ACT.

The following represents a summary of certain possibilities associated with the Authority’s operations that may have the effect of rendering the Authority unable to derive sufficient Net Revenues to enable it to pay the 2008 Guaranteed Bonds. In such events, the Commonwealth would then be obligated under the Guaranty Act to pay the 2008 Guaranteed Bonds. The following discussion is intended only as a summary and does not purport to identify all the factors that may adversely affect the Authority’s ability to pay debt service on the 2008 Guaranteed Bonds, thus necessitating the Commonwealth to honor its obligations under the Guaranty Act.

1. *The Authority’s ability to charge and collect rates sufficient to provide for debt service on the 2008 Guaranteed Bonds and other Indebtedness.* The imposition and collection by the Authority of rates, fees and charges for services of the Systems provide security for payment of the 2008 Guaranteed Bonds but are subject to being applied first to the payment of Senior Obligations whose incurrence by the Authority is limited only by the financial tests set forth in the Trust Agreement and is not limited in any way by the Resolution. The Revenues, however, 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 debt service payments on the 2008 Guaranteed 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 Guaranteed Bonds may be adversely affected.

2. *The Authority's ability to comply with environmental and public health standards and to maintain self-sufficiency operations in a highly regulated industry.* The environmental aspects of the Authority's operations are regulated primarily by (a) the United States Environmental Protection Agency (the "EPA"), (b) Puerto Rico Department of Health ("DOH") and (c) Puerto Rico Environmental Quality Board ("EQB") under federal and Commonwealth statutes and associated rules and regulations promulgated by them thereunder. 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 given 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 real 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 Guaranteed 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 Constitutions of Puerto Rico and the United States provide protection against enactment of post-bond issuance legislation that would have the effect of substantially impairing the Authority's obligations under the Resolution and the 2008 Guaranteed Bonds, no assurance can be given that such legislation 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 Guaranteed 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 Guaranteed 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 Guaranteed 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 Guaranteed Bonds from Net Revenues may be materially adversely affected. See "Forward-Looking Statements" under *Introductory Statement* in this Official Statement.

THE 2008 GUARANTEED BONDS

General

The 2008 Guaranteed Bonds will be dated, bear interest at such rates, be payable at such times and mature on the dates and in the principal amounts set forth on the cover and inside cover page of this Official Statement. They are subject to redemption at the times and in the manner set forth below under "Redemption".

Book-Entry Only System

The Depository Trust Company ("DTC"), New York, New York, will act as securities depository for the 2008 Guaranteed Bonds. The 2008 Guaranteed 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 2008 Guaranteed Bonds under the DTC system must be made by or through Direct Participants, which will receive a credit for their 2008 Guaranteed Bonds on DTC’s records. The ownership interest of each actual purchaser of each 2008 Guaranteed 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 2008 Guaranteed 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 2008 Guaranteed Bonds, except in the event that use of the book-entry system for such 2008 Guaranteed Bonds is discontinued, as discussed below.

To facilitate subsequent transfers, all 2008 Guaranteed 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 such 2008 Guaranteed 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 such 2008 Guaranteed Bonds; DTC’s records reflect only the identity of the Direct Participants to whose accounts such 2008 Guaranteed 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 2008 Guaranteed Bonds may wish to take certain steps to augment transmission to them of notices of significant events with respect to such 2008 Guaranteed 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 2008 Guaranteed 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 Fiscal Agent 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 2008 Guaranteed 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 2008 Guaranteed 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 2008 Guaranteed Bonds are credited on the record date (identified in a listing attached to the Omnibus Proxy).

Redemption proceeds, distributions, and other payments on the 2008 Guaranteed 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 Fiscal Agent 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 Fiscal Agent 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 Fiscal Agent, 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 2008 Guaranteed Bonds at any time by giving reasonable notice to the Authority or the Fiscal Agent. Under such circumstances, in the event that a successor securities depository is not obtained, definitive 2008 Guaranteed 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 2008 Guaranteed 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 2008 Guaranteed 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 2008 Guaranteed Bonds shall be payable in lawful money of the United States of America at the corporate trust office of the Fiscal Agent in New York, New York. Interest on the 2008 Guaranteed Bonds will be payable by check mailed to the respective addresses of the registered owners determined as of the 15th day of the month preceding the interest payment date as shown on the registration books of the Authority maintained by the Fiscal Agent as of the record date therefor. The 2008 Guaranteed Bonds will be issued only as registered bonds without coupons in denominations of \$5,000 or any multiple thereof. The transfer of the 2008 Guaranteed Bonds will be registrable and they may be exchanged at the corporate trust office of the Fiscal Agent in New York, New York 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 2008 Series A Guaranteed Bonds maturing after July 1, 2013 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 Fiscal Agent in respect of a Sinking Fund Requirement, on any date not earlier than July 1, 2013, at the following prices (expressed in percentages of the principal amount of the 2008 Series A Guaranteed Bonds to be redeemed) plus accrued interest to the redemption date:

<u>Period During Which Redeemed</u>	<u>Redemption Price</u>
July 1, 2013 through June 30, 2014	102%
July 1, 2014 through June 30, 2015	101¾
July 1, 2015 through June 30, 2016	101½
July 1, 2016 through June 30, 2017	101
July 1, 2017 through June 30, 2018	100½
July 1, 2018 and thereafter	100

The 2008 Series B Guaranteed Bonds maturing after July 1, 2015 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 Fiscal Agent in respect of a Sinking Fund Requirement, on any date not earlier than July 1, 2015, at the following prices (expressed in percentages of the principal amount of the 2008 Series B Guaranteed Bonds to be redeemed) plus accrued interest to the redemption date:

<u>Period During Which Redeemed</u>	<u>Redemption Price</u>
July 1, 2015 through June 30, 2016	101½%
July 1, 2016 through June 30, 2017	101
July 1, 2017 through June 30, 2018	100½
July 1, 2018 and thereafter	100

Amortization Requirements

The 2008 Series A Guaranteed Bonds maturing July 1, 2023, July 1, 2028 and July 1, 2034 shall be redeemed in part on July 1, 2021, July 1, 2024 and July 1, 2029, respectively, and each July 1 thereafter in the principal amounts equal to the respective Amortization Requirements (less the principal amount of any 2008 Series A Guaranteed Bonds retired by purchase) from moneys in the Sinking Fund at par plus accrued interest in the years and amounts set forth below:

<u>Year</u>	Annual Sinking Fund Requirements for 2008 Series A Guaranteed Bonds due July 1,		
	2023	2028	2034
	(dollars in thousands)		
2021	\$ 4,880		
2022	6,260		
2023	6,865*		
2024		\$ 9,275	
2025		9,885	
2026		10,485	
2027		11,110	
2028		11,795*	
2029			\$ 12,490
2030			13,455
2031			14,285
2032			15,140
2033			16,070
2034			17,060*
Total	\$ 18,005	\$ 52,550	\$ 88,500
Average life (years)	14.396	18.405	23.964

* Final maturity.

The 2008 Series B Guaranteed Bonds maturing July 1, 2023, July 1, 2028 and July 1, 2034 shall be redeemed in part on July 1, 2021, July 1, 2024 and July 1, 2029, respectively, and each July 1 thereafter in the principal amounts equal to the respective Amortization Requirements (less the principal amount of any 2008 Series B Guaranteed Bonds retired by purchase) from moneys in the Sinking Fund at par plus accrued interest in the years and amounts set forth below:

<u>Year</u>	Annual Sinking Fund Requirements for 2008 Series B Guaranteed Bonds due July 1,		
	2023	2028	2034
	(dollars in thousands)		
2021	\$ 3,850		
2022	4,955		
2023	5,425*		
2024		\$ 7,330	
2025		7,810	
2026		8,285	
2027		8,785	
2028		9,320*	
2029			\$ 9,865
2030			10,640
2031			11,290
2032			11,965
2033			12,695
2034			13,485*
Total	\$ 14,230	\$ 41,530	\$ 69,940
Average life (years)	14.397	18.405	23.964

* Final maturity.

Notice of Redemption

At least thirty (30) days prior to any redemption, notice thereof will be sent by first-class mail, postage prepaid, to the registered owners of the 2008 Guaranteed Bonds to be redeemed and to the national information services. If less than all of the 2008 Guaranteed Bonds of any one maturity are called for redemption, the particular 2008 Guaranteed Bonds or portions thereof to be redeemed will be selected by the Fiscal Agent 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 2008 Guaranteed 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 2008 Guaranteed Bonds (or portion thereof) being called for redemption, the redemption date and price and the address at which 2008 Guaranteed 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 the registered owner of, any 2008 Guaranteed Bond will not affect the validity of the proceedings for the redemption of any other 2008 Guaranteed 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 Resolution to be given with the condition that the effectiveness of such optional redemption is dependent upon the Fiscal Agent having in its possession on the date of redemption moneys sufficient to enable it to pay the applicable redemption price on the corresponding 2008 Guaranteed Bonds and in the absence of such possession by the Fiscal Agent, such redemption will not take place.

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:

<u>Members</u>	<u>Occupation</u>	<u>Term Ends</u>
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:

<u>Region</u>	<u>Consultant</u>
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.

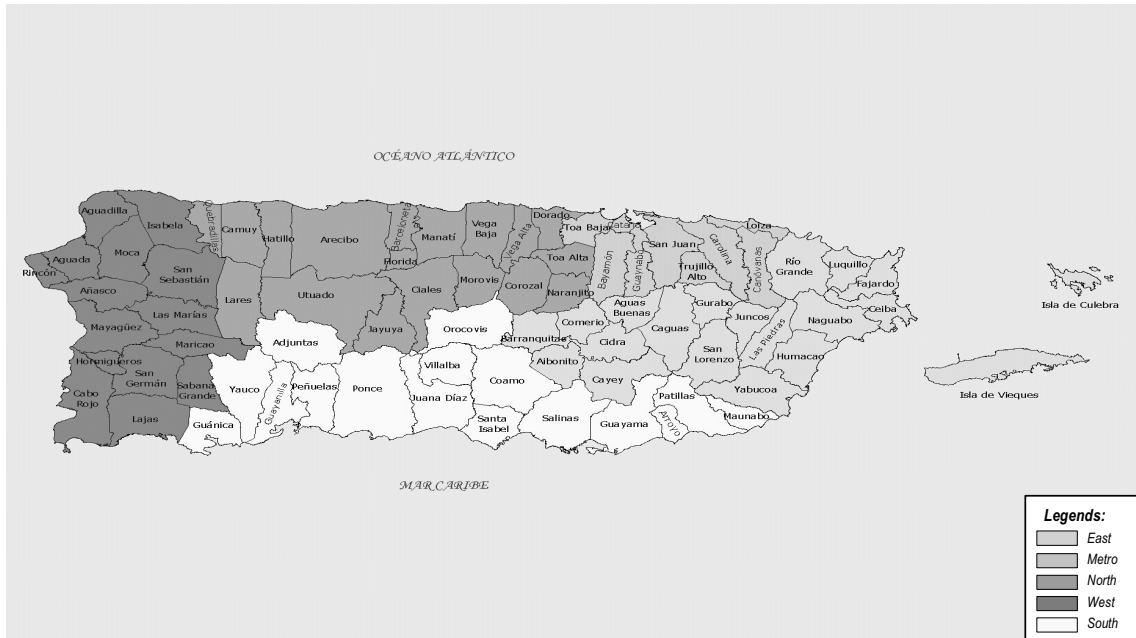
Number of Customers by Type of Service as of June 30, 2007

<u>Type</u>	<u>Water Only</u>	<u>Water and Sewer</u>	<u>TOTAL</u>
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

<u>Year</u>	<u>Residential</u>	<u>Commercial</u>	<u>Industrial</u>	<u>Government⁽¹⁾</u>	<u>Total⁽²⁾</u>
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

(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)**

<u>Year</u>	<u>Water Sales</u>					<u>Estimated Total Water Produced</u>	<u>Volume Unaccounted For</u>	<u>Volume Unaccounted For As Percentage of Total Water Production</u>
	<u>Residential</u>	<u>Commercial</u>	<u>Industrial</u>	<u>Government</u>	<u>Total</u>			
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

<u>Year</u>	<u>Residential</u>	<u>Commercial</u>	<u>Industrial</u>	<u>Governmental</u>	<u>Total</u>
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)**

<u>Year</u>	<u>Residential</u>	<u>Commercial</u>	<u>Industrial</u>	<u>Governmental</u>	<u>Total</u>
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.

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 Guaranteed Bonds*.

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 Guaranteed Bonds that would have the effect of substantially impairing the Authority's obligations under the Trust Agreement and the 2008 Guaranteed 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 Guaranteed Bonds. See *Investment Considerations Relating to the Commonwealth Guaranty*.

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 4½% 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 ¾-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 ¾-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

<u>Year</u>	<u>Residential</u>	<u>Commercial</u>	<u>Industrial</u>	<u>Governmental</u>	<u>Total</u>
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,					Total 2008-2012
		2008	2009	2010	2011	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 Planning	Water & Wastewater	\$ 31.2	\$ 37.8	\$ 27.0	\$ 10.6	\$ 0.6	\$ 107.2
	Water & Wastewater	4.8	0.6	0.0	0.0	0.0	5.4
Renovation & Replacement Meters	Water & Wastewater	42.5	85.9	65.2	63.2	63.6	320.3
	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,					Total 2008-2012
	2008	2009	2010	2011	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 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 Obligations 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 Guaranteed Bonds and the 2008 Senior Bonds, the refunding of the Refunded Bonds (shown in the table below as the amount outstanding as of October 31, 2007 on the line "2008 Guaranteed Bonds") and all obligations refinanced by the 2008 Senior 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.

	<u>October 31, 2007</u>	<u>As Adjusted</u>
	(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.....	<u>360,610</u>	<u>360,610</u>
	\$ 1,121,232	\$ 2,510,089
Notes		
Term Loan (Senior Subordinate lien)...	\$ 250,000	\$ 250,000
Bond Anticipation Notes	850,000	--
Lines of Credit.....	<u>129,198</u>	<u>53,146</u>
Operating Reserve Fund Line of Credit from Development Bank.....		--
Total Indebtedness payable	<u>\$ 2,350,430</u>	<u>\$ 2,813,235</u>

In the table above, all of the obligations are senior to the Guaranteed Obligations under the Resolution except for the Superaqueduct Obligations and the reference to the 2008 Guaranteed Bonds under Guaranteed Obligations outstanding as of October 31, 2007 refers to the Refunded Bonds.

Commonwealth Guaranteed Obligations

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.

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 Guaranteed Bonds. Most of the Authority's existing obligations to the Revolving Funds are guaranteed by the Commonwealth, and the Guaranty Act 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. The Guaranty Act 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.

Superaqueduct 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 contractually 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 a 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 2008 Guaranteed 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 Guaranteed 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.

PRINCIPAL AND INTEREST REQUIREMENTS

Principal and Interest Requirements for the 2008 Guaranteed Bonds in any Fiscal Year, as defined in the Resolution, comprise the sum of principal, including Amortization Requirement, and interest which is monthly, commencing on May 1, 2008. The following table shows the estimated Principal and Interest Requirements for the 2008 Guaranteed Bonds, as well as the Senior Obligations.

Fiscal Year Ending June 30	Senior Obligations	2008 Guaranteed Bonds			Revolving Fund Obligations, Guaranteed RUS	Grand Total
		Principal	Interest	Total	Bonds and PFC Bonds*	
2008†	51,340,369		\$ 4,928,639	\$ 4,928,639	\$ 97,070,821	\$ 153,339,829
2009	52,868,223		17,226,310	17,226,310	62,728,234	132,822,767
2010	84,751,075		17,226,310	17,226,310	62,142,174	164,119,559
2011	84,751,075		17,226,310	17,226,310	62,579,261	164,556,647
2012	106,594,544		17,226,310	17,226,310	47,117,996	170,938,850
2013	106,595,044		17,226,310	17,226,310	53,920,770	177,742,124
2014	106,594,794		17,226,310	17,226,310	54,673,696	178,494,800
2015	106,597,294		17,226,310	17,226,310	54,859,221	178,682,825
2016	106,595,794		17,226,310	17,226,310	54,481,135	178,303,239
2017	106,598,794		17,226,310	17,226,310	54,682,328	178,507,432
2018	106,597,781		17,226,310	17,226,310	52,836,813	176,660,904
2019	106,597,969		17,226,310	17,226,310	51,834,998	175,659,277
2020	106,595,681		17,226,310	17,226,310	51,312,589	175,134,581
2021	106,597,244	\$ 8,730,000	17,226,310	25,956,310	50,482,867	183,036,421
2022	106,598,369	11,215,000	16,719,970	27,934,970	49,142,171	183,675,510
2023	106,594,769	12,290,000	16,069,500	28,359,500	49,417,996	184,372,265
2024	106,597,156	16,605,000	15,356,680	31,961,680	49,678,319	188,237,155
2025	106,595,325	17,695,000	14,352,078	32,047,078	50,376,999	189,019,401
2026	106,598,325	18,770,000	13,281,530	32,051,530	50,394,876	189,044,732
2027	106,598,075	19,895,000	12,145,945	32,040,945	49,560,462	188,199,482
2028	106,596,575	21,115,000	10,942,298	32,057,298	50,438,712	189,092,585
2029	106,595,575	22,355,000	9,664,840	32,019,840	51,750,180	190,365,595
2030	106,594,775	24,095,000	8,301,185	32,396,185	52,765,860	191,756,821
2031	106,593,575	25,575,000	6,831,390	32,406,390	45,451,930	184,451,895
2032	106,595,375	27,105,000	5,271,315	32,376,315	19,802,421	158,774,111
2033	106,597,975	28,765,000	3,617,910	32,382,910	19,799,725	158,780,610
2034	106,593,875	30,545,000	1,863,245	32,408,245	19,773,384	158,775,504
2035	106,595,575				19,541,219	126,136,794
2036	106,594,375				18,541,369	125,135,744
2037	106,596,575				18,273,875	124,870,450
2038	90,607,755				9,944,946	100,552,701
2039	90,598,688				9,899,638	100,498,326
2040	90,600,188				8,394,359	98,994,546
2041	90,598,688				7,383,400	97,982,087
2042	90,602,488				6,565,578	97,168,065
2043	90,598,688				6,187,216	96,785,903
2044	90,599,388				4,348,197	94,947,585
2045	90,600,188				3,198,345	93,798,532
2046	90,598,456				2,020,725	92,619,181
2047	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 Senior Obligations 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 the 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.

	2005	Audited 2006	2007	Unaudited Four Months Ended October 31,	
				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
Loss before capital contributions	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 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 an amount equal to approximately \$75.3 million. 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 Obligations—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 Resolution or 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 Guaranteed Bonds, notwithstanding that PRIFA has taken or not taken any action which has an effect on the Authority.

PROVISIONS RELATING TO PUBLIC DEBT OF THE COMMONWEALTH

Payment of Public Debt

The Constitution of Puerto Rico provides that public debt of the Commonwealth will constitute a first claim on available Commonwealth resources. Public debt of the Commonwealth includes general obligation bonds and notes of the Commonwealth and, according to opinions heretofore rendered by the Attorney General of the Commonwealth, also any payments required to be made by the Commonwealth under its guarantees of bonds and notes issued by its public instrumentalities, such as the 2008 Guaranteed Bonds. Any such guaranty payments, including guaranty payments under the Guaranty Act, are equal in their claim on such available Commonwealth resources to claims for the payment of debt service on general obligation bonds and notes of the Commonwealth. The Commonwealth funds from property taxes a special fund for the Amortization and Redemption of General Obligations Evidenced by Bonds and Promissory Notes, for application to the payment of general obligation bonds and notes of the Commonwealth.

The Commonwealth has allocated certain motor vehicle fuel taxes and license fees to the Puerto Rico Highway and Transportation Authority. However, the taxes so allocated are subject to first being applied to payment of the principal of and interest on the Commonwealth public debt, but only if and to the extent that all other

available resources of the Commonwealth are insufficient for that purpose. The Commonwealth has never applied such taxes to the payment of its public debt.

Since fiscal 1989, the Commonwealth has pledged to Puerto Rico Infrastructure Financing Authority certain federal excise taxes imposed on alcoholic beverages and tobacco products produced in Puerto Rico and sold in the United States, which taxes are first returned to the Commonwealth before being so pledged. The amounts so pledged, however, are subject to first being applied to payment of the principal of and interest on the Commonwealth public debt, but only if and to the extent that all other available resources of the Commonwealth are insufficient for that purpose. The Commonwealth has never applied such amounts to the payment of its public debt.

In 2006, the Commonwealth allocated a portion of the sales tax to service the bonds issued by Sales Tax Financing Corporation to refinance a portion of the Commonwealth's outstanding extra constitutional debt (including the Sales Tax Bonds). The legislation making such allocation provides that the portion so set aside is not "available Commonwealth resources" for purposes of the above Constitutional provision. The legislation has not been challenged in any court, and the Supreme Court of Puerto Rico has not expressed itself as to (i) the constitutionality of the transfer of the pledged sales tax to the Sales Tax Financing Corporation, or (ii) whether the pledged sales tax constitutes available resources of the Commonwealth.

While the Commonwealth has sovereign immunity from suit, judgment and execution in respect of its public debt, the Constitution specifically empowers a holder of bonds and notes evidencing public debt to bring suit against the Secretary of the Treasury to require application of available resources, including surplus, to the payment of principal of and interest on public debt when due.

Payment Record

The Commonwealth has never defaulted on the payment of principal of or interest on any of its debt.

Debt Limitation

Section 2 of Article VI of the Constitution of Puerto Rico provides that direct obligations of the Commonwealth evidenced by full faith and credit bonds or notes shall not be issued if the amount of the principal of and interest on such bonds and notes and on all such bonds and notes theretofore issued which is payable in any fiscal year, together with any amount paid by the Commonwealth in the preceding fiscal year on account of bonds or notes guaranteed by the Commonwealth, exceeds 15% of the average annual revenues raised under the provisions of Commonwealth legislation and covered into the Treasury of Puerto Rico (hereinafter "internal revenues") in the two fiscal years preceding the then current fiscal year. Section 2 of Article VI does not limit the amount of debt that the Commonwealth may guarantee so long as the 15% limitation is not exceeded. Internal revenues consist principally of income taxes, property taxes and excise taxes. Certain revenues, such as federal excise taxes on offshore shipments of alcoholic beverages and tobacco products and customs duties, which are collected by the United States Government and returned to the Treasury of Puerto Rico and motor vehicle fuel taxes and license fees, which are allocated to the Highway Authority, are not included as internal revenues for the purpose of calculating the debt limit, although some or all of these revenues may be available for the payment of debt service. In addition, the portion of the sales tax allocated to the Sales Tax Financing Corporation is also not included as internal revenues consistent with the legislation creating the Sales Tax Financing Corporation, which legislation provides that such portion is not "available resources" under the Constitutional provisions relating to the Guaranteed Bonds.

All or a portion of the proceeds of certain refunding bonds issued by the Commonwealth were invested in guaranteed investment contracts or federal agency securities (in each case rated in the highest rating category by Moody's Investors Service, Inc. ("Moody's") and S&P), none of which is eligible to be used for legal defeasance under Puerto Rico law ("non-eligible investments"). Since bonds refunded with proceeds invested in non-eligible investments are not legally defeased, such bonds are treated as outstanding for purposes of the 15% debt limitation.

Joint Resolution No. 2104 of September 30, 2004 ("Joint Resolution No. 2104"), authorized the Commonwealth to enter into interest rate exchange agreements with respect to the Commonwealth's \$447,875,000 Public Improvement Refunding Bonds, Series 2004 B (the "Series 2004 B Bonds"), which were issued as variable

rate bonds. Joint Resolution No. 2104 allows the Commonwealth to calculate the constitutional debt limitation using (i) the fixed rate it is required to pay under any interest rate exchange agreement entered into by the Commonwealth in connection with the Series 2004 B Bonds, and (ii) the lesser of (A) the maximum interest rate allowed by law, and (B) the maximum interest rate set forth in the resolution approving the bonds, if any, in connection with the Commonwealth's \$279,240,000 Public Improvement Refunding Bonds, Series 2004 A (the "Series 2004 A Bonds") and any Series 2004 B Bonds for which no interest rate exchange agreement is executed. In November 2004, the Commonwealth entered into two interest rate exchange agreements with respect to the Series 2004 B Bonds.

Act No. 39 of 2005 authorizes the Commonwealth to enter into interest rate exchange agreements with respect to its general obligation bonds, subject to certain conditions, including that the agreements are entered into to reduce certain financial risks associated with issuing variable rate obligations. In August 2006, the Commonwealth issued its \$500,000,000 Public Improvement Bonds of 2006, Series A, a portion of which bonds bear interest at a rate that will change periodically based on changes in the United States consumer price index, and in connection with such consumer price index floating rate bonds (said portion, the "2006 CPI Bonds") entered into an interest rate exchange agreement, the effect of which will economically enable the Commonwealth to pay a fixed rate of interest in respect thereof. Act No. 39 of 2005 allows the Commonwealth to calculate the constitutional debt limit in a manner identical to that utilized in Joint Resolution No. 2104. In addition, the Commonwealth has also executed under the authority granted in Act No. 39 of 2005, interest rate exchange agreements in which the Commonwealth is making payments (1) on \$1,698,370,000 notional amount of public improvement bonds based on a short-term interest rate index published by Securities Industry and Financial Markets Association ("SIFMA") and is receiving from its counterparties payments on the same notional amount based on the published three-month London Interbank Offered Rate index (the "basis swap") and (2) on \$850,000,000 notional amount of public improvement bonds based on the published short-term SIFMA municipal swap rate and is receiving from its counterparties payments on the same notional amount based on a published index of municipal bonds having a maturity of 10 years (the "constant maturity swap"). Finally, in connection with the issuance by the Commonwealth of certain variable rate general obligation bonds in October, 2007 (the "2007 Variable Rate Bonds"), the Commonwealth entered into an interest rate exchange agreement the effect of which will economically enable the Commonwealth to pay a fixed rate of interest in respect thereof.

Future maximum annual debt service for the Commonwealth's outstanding general obligation debt is \$859,632,840 in the fiscal year ending June 30, 2020 (based on the assumption that (i) the bonds refunded with non-eligible investments are treated as being outstanding, (ii) the Series 2004 A Bonds bear interest at their actual rate per annum through July 1, 2012 and thereafter at 12% per annum, (iii) the Series 2004 B Bonds, the 2006 CPI Bonds and the 2007 Variable Rate Bonds bear interest at 12% per annum and (iv) the public improvement bonds to which the basis swap and the constant maturity swap relate bear interest at their stated interest rates rather than the rates set forth in said swaps). This amount (\$859,632,840) is equal to 10.30% of \$8,344,210,500, which is the average of the adjusted internal revenues for the fiscal year ended June 30, 2006 and the currently estimated adjusted internal revenues for the fiscal year ended June 30, 2007. If the bonds refunded with non-eligible investments were treated as not being outstanding, and the interest on the Series 2004 B Bonds, the 2006 CPI Bonds and the Variable Rate Bonds is calculated using the fixed rate paid by the Commonwealth under the interest rate exchange agreements executed in connection with such bonds, the percentage referred to in the preceding sentence would be 8.63%.

Debt service for the Refunded Bonds of approximately \$30 million was paid by the Authority during the last two fiscal years and, thus, is not included in the calculation of the 15% debt limitation. In the event the Authority is unable to make any portion of the future debt service payments on the Guaranteed Bonds, including the 2008 Guaranteed Bonds, the Commonwealth would be required to make such payments under the Guaranty Act, and such debt service would to the extent to be paid by the Commonwealth be included in the calculation of the 15% debt limitation.

RECENT DEVELOPMENTS RELATING TO THE COMMONWEALTH

Fiscal Year 2008 Projected Revenues and Expenditures

As discussed in greater detail in the Commonwealth Report, the General Fund budget for fiscal year 2008 is \$9.227 billion. General Fund revenues for the six-month period ended on January 31, 2008 totaled \$4.555 billion, which is \$277.8 million less than the Treasury Department's estimate for that period. This amount includes (i) \$2.989 billion in revenues from individual and corporate income taxes, \$562.4 million from non-resident withholding taxes and \$496.7 million from excise taxes and (ii) \$486.5 million of sales tax revenues. The Commonwealth currently anticipates that for the full fiscal year 2008, total expenditures will roughly equal the budgeted amounts. However, expenditures relating to the Health Insurance Program could exceed the budgeted amounts. The Commonwealth's economic team is working together to enforce the spending control measures that have been established to attempt to minimize this budget risk.

Sales Tax Adjustment Proposal

On February 6, 2008, the Governor, in his State of the Commonwealth address, proposed reducing the rate on the current sales and use tax from 7% to 2.5% and re-instituting a revamped excise tax on goods imported into Puerto Rico to help stimulate the Commonwealth's economy in the face of a lingering recession. The proposed changes are intended to be revenue neutral. The proposal will require passage of legislation to become law, and includes provisions that will continue the earmarking of sales tax revenues equal to 1% of the total sales tax rate to the Dedicated Sales Tax Fund and other mechanisms currently in place to ensure the security for the outstanding Sales Tax Financing Corporation bonds. See, "Tax Reform" under *Puerto Rico Taxes, Other Revenues and Expenditures*, "Government Development Bank for Puerto Rico – Sales Tax Financing Corporation" under *Public Corporations* and "Public Sector Debt" under *Debt* in the Commonwealth Report in *Appendix IV*. On February 7, 2008, the Governor stated that any proposal from his administration would not impair the rights of bondholders and that he will veto any counter-proposal from the Legislature or Puerto Rico that would constitute a possible impairment to the rights of bondholders. No assurance can be given that the above proposal will be enacted, or that if it is enacted, it will be in the form recommended by the Governor. Also on February 7, 2008, S&P placed the bonds of the Sales Tax Financing Corporation on CreditWatch Negative and Fitch Ratings Ltd. ("Fitch") placed the same bonds on Rating Watch Negative in the aftermath of the Governor's proposal.

Employees Retirement Systems Funding Improvement

On January 31, 2008, the Employees Retirement System issued \$1,588,810,799.60 principal amount of its Senior Pension Funding Bonds, Series A. The net proceeds of the bonds have been deposited into the trustee assets of the System reducing the unfunded accrued actuarial liability of the System. See, *Retirement Systems* in the Commonwealth Report in *Appendix IV*. The bonds are secured by a pledge of contributions to be made into the System by all of the participating government employers, including the Commonwealth, its municipalities and certain public corporations. The System anticipates issuing additional Senior Pension Funding Bonds during 2008 for the same purpose and having the same security.

Planning Board Revised Economic Growth Estimates

On February 21, 2008, the Planning Board, as part of its final review of fiscal year 2007 economic statistics indicated that it expected to reduce the 2007 economic growth rate to -1.8% from -1.4% and that the forecast for fiscal years 2008 and 2009 will be lowered on account of the projected length of the current recession. The factors that influenced the Board's fiscal year 2007 indication included reductions in retail sales, private investment (especially in the construction sector) and government investment. Price increases in certain key areas such as energy and raw materials contributed to the Board's numbers as well.

SUMMARY OF CERTAIN PROVISIONS OF THE RESOLUTION

The following is a summary of certain provisions of the Resolution. The statements contained herein do not purport to be complete and this summary is qualified in its entirety by reference to the Resolution. For purposes

of this summary, the term “Guaranteed Bonds” refers to the 2008 Guaranteed Bonds together with any Additional Bonds issued under the Resolution and at the time outstanding. See “Additional Guaranteed Bonds” under *Security for the Guaranteed Bonds*. Terms not otherwise defined below are used with their meanings given elsewhere in this Official Statement.

Definition of Certain Terms

“Amortization Requirement” for any Fiscal Year shall mean, with respect to the term Guaranteed Bonds issued under the provisions of the Resolution, the respective amounts which are required in each Fiscal Year to provide for retirement by purchase or redemption from time to time under the provisions of the Resolution of all of such Guaranteed Bonds by their stated maturity as fixed in the resolution providing for the issuance of such Guaranteed Bonds.

“Capital Expenditures” shall mean all expenditures made on account of the Cost of Improvements.

“Cost of Improvements” shall mean the cost of construction of Improvements, the cost of all labor, materials, machinery and equipment, the cost of all lands, property, rights, rights-of-way, roads, easements, including franchises and interests acquired or used for or in connection with the Authority, 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, interest on Bonds 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 Guaranteed Bonds during such period as may be specified in the resolution authorizing the issuance of such Guaranteed 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.

“Current Expenses” shall mean the Authority’s reasonable and necessary current expenses incurred in the Authority’s 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 doubtful accounts and other non-cash reserves or expenses.

“FmHA Acts” shall mean Act No. 76 of the Legislature of Puerto Rico, approved May 30, 1976, Act No. 8 of the Legislature of Puerto Rico, approved April 3, 1986, and Act No. 88 of the Legislature of Puerto Rico, approved November 6, 1992, as each may be amended from time to time, and any successor acts thereto.

“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 mentioned in clauses (i) and (ii) above held by a bank (including the Fiscal Agent) 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.

“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.

“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 Resolution (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 and (v) any special assessments, including assessments in the nature of impact fees. In no event shall Revenues include (i) income from the investment of moneys on deposit to the credit of the Construction Fund under the Trust Agreement, 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 under the Trust Agreement), (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 established under the Trust Agreement), (iii) any amounts received from the Commonwealth on account of Commonwealth Guaranteed Indebtedness (which is required to be deposited directly in the Commonwealth Payments Fund under the Trust Agreement) or Commonwealth Supported Obligations (which is required to be deposited in the Commonwealth Payments Fund) and (iv) the proceeds of Guaranteed Bonds or Senior Obligations.

Flow of Funds; Operation of Guaranty

The Resolution creates the Puerto Rico Aqueduct and Sewer Authority Guaranteed Bonds Interest and Sinking Fund (the “Sinking Fund”) into which deposits shall be made as described below. In addition, the Resolution creates the Puerto Rico Aqueduct and Sewer Authority Revenue Fund (the “Revenue Fund”).

All Revenues and moneys received under the FmHA Acts will be deposited in the Revenue Fund to be used by the Authority for any lawful purpose, including payment of Current Expenses and the FmHA bonds.

The Resolution does not in any way limit the ability of the Authority to appropriate and pay moneys in the Revenue Fund for, or pledge such moneys to the payment of, Current Expenses, Capital Expenditures, Cost of Improvements, and bonds or notes issued or to be issued or other obligations incurred or to be incurred with respect to, and any costs and expenses related to the construction, replacement, renewal or improvement of, the Systems, and establish reserves therefor (all such obligations and other items so payable being herein collectively referred to as “Senior Obligations”), and the obligations of the Authority to make the deposits to the Sinking Fund as described below are in all respects subordinate and inferior to Senior Obligations, including Current Expenses. (Sec. 501 and *Security for the Guaranteed Bonds* above)

For so long as the Trust Agreement remains in full force and effect, the Fiscal Agent shall deposit amounts transferred to it by the Senior Trustee from the Commonwealth Payments Fund under the Trust Agreement to the credit of the following Accounts in the following order:

(a) to the Bond Service Account, the amount required, if any, to make the amount then to the credit of such Account equal to the sum of (i) an amount equal to the interest becoming due on the Guaranteed Bonds on the next Interest Payment Date, and (ii) an amount equal to the principal of serial Guaranteed Bonds that will mature and become due on the next annual maturity date; and

(b) to the Redemption Account, such amount, if any, of the balance remaining after making the deposit under clause (a) above as may be required to make the amount then credited to such Account equal to the Amortization Requirements, if any, for the term Guaranteed Bonds, if any, of each Series then Outstanding, for such Fiscal Year.

If the amount in (i) the Commonwealth Guaranteed Indebtedness Account, (ii) the Bond Service Account or (iii) the Redemption Account on the 90th day in advance of the next Interest Payment Date is less than the sum

required to pay (a) the interest on all Guaranteed Bonds and the principal on all serial Guaranteed Bonds and (b) the principal of all term Guaranteed Bonds scheduled to mature or become due by mandatory redemption, respectively, the Fiscal Agent shall notify the Executive Director, the President of Government Development Bank for Puerto Rico and the Secretary of the Treasury of the amount of the deficiency.

On the 10th day before any such Interest Payment Date, the Fiscal Agent shall similarly give notice of the amount of the actual deficiency in the amount credited to such Accounts to pay interest and principal on all Guaranteed Bonds becoming due on such Date, and the Fiscal Agent shall file a demand with the Secretary of the Treasury for payment to the Fiscal Agent, no later than one business day prior to such Payment Date in accordance with the provisions of the Guaranty Act, of the amount of such deficiency. (Sec. 502)

For so long as any Series of Guaranteed Bonds shall be Outstanding, the Executive Director shall not later than 150 days before the start of each fiscal year, commencing with the fiscal year beginning July 1, 1996, direct the Director of the Office of the Management and Budget to include the entire amount of the principal and interest scheduled to become due on the Guaranteed Bonds in the next succeeding Fiscal Year in the General Expense Budget of the Government of Puerto Rico for such Fiscal Year. (Sec. 507)

Moneys in the Bond Service Account shall be used to pay interest upon such Bonds as such interest becomes due and principal of Guaranteed Bonds as such principal becomes due. (Sec. 503)

Moneys in the Redemption Account shall be applied to the retirement of Guaranteed Bonds of each Series then outstanding in the following order:

first, the term Guaranteed Bonds of each such Series to the extent of the Amortization Requirement, if any, for such Fiscal Year for the term Guaranteed Bonds of each such Series then Outstanding, and if the amount available in such Fiscal Year shall not be equal thereto then in proportion to the Amortization Requirement, if any, for such Fiscal Year for the term Guaranteed Bonds of each such Series then Outstanding;

second, any balance then remaining shall be applied to the purchase of any term Guaranteed Bonds then Outstanding whether or not such Guaranteed Bonds shall then be subject to redemption in accordance with paragraph (a) above;

third, any balance then remaining shall be applied, as directed by the Authority, to the redemption of term Guaranteed Bonds; and

fourth, after the retirement of all term Guaranteed Bonds, any balance still remaining shall be applied to the retirement of the serial Guaranteed Bonds of each Series in proportion to the aggregate principal amount of the serial Guaranteed Bonds of each such Series originally issued under the provisions of the Resolution. (Sec. 504)

No Events of Default or Acceleration

The Resolution contains no events of default and does not permit the Guaranteed Bonds to be accelerated.

Defeasance

Any outstanding Guaranteed Bond shall be deemed to have been paid within the meaning and with the effect expressed in the Resolution when the whole amount of the principal of and interest on such Bond shall have been paid or when (a) in the event such Bond has been selected for redemption, such Bond shall have been duly called for redemption or irrevocable instructions to call such Bond for redemption shall have been given to the Fiscal Agent by the Authority, (b) there shall have been deposited with the Fiscal Agent or another fiduciary institution acting as escrow agent for the benefit of the Holder of such Bond either moneys in an amount that shall be sufficient, or Sufficient Government Obligations, to pay when due the principal of and premium, if any, and interest due and to become due on such Bond on or prior to the redemption date or maturity date thereof, as the case

may be, and (c) in the event such Bond does not mature and is not to be redeemed within the next succeeding sixty (60) days, the Authority shall have given the Fiscal Agent irrevocable instructions to give, as soon as practicable, a notice to the Holder of such Bond by first-class mail, postage prepaid, stating that the deposit of moneys or Sufficient Government Obligations mentioned in clause (b) of this paragraph has been made with the Fiscal Agent or another fiduciary institution acting as escrow agent for the benefit of the holder of such Bond and that such Bond is deemed to have been paid in accordance with the preceding paragraph and stating such 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.

Modifications of the Resolution

The Authority may, without the consent or approval of or notice to any Holders, from time to time and at any time, adopt such resolution or resolutions supplemental to the Resolution 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 Resolution or in any supplemental resolution; provided, however, that nothing in the Resolution contained shall permit, or be construed as permitting, without the consent of the Holders of each Guaranteed Bond outstanding affected thereby (a) an extension of the maturity of any Guaranteed Bond issued hereunder, or (b) a reduction in the principal amount of any Guaranteed Bond or the redemption premium or the rate of interest thereon, or (c) a preference or priority of any Guaranteed Bond or Guaranteed Bonds over any other Guaranteed Bond or Guaranteed Bonds, or (d) any impairment of benefits provided by the Guaranty Act with respect to such Bond.

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 Guaranteed Bonds or in any way contesting or affecting the validity of the 2008 Guaranteed 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

The following is a summary of the opinion of Special Counsel regarding certain Puerto Rico tax and United States federal tax consequences of the ownership of the 2008 Guaranteed Bonds. This section does not purport to cover all of the Puerto Rico tax and United States federal income tax consequences arising from the purchase and ownership of the 2008 Guaranteed Bonds. The following is based upon laws and regulations now in effect and is subject to change.

In the opinion of Cancio Covas & Santiago, LLP, based on the laws of Puerto Rico now in force:

1. Interest on the 2008 Guaranteed Bonds is exempt from Puerto Rico income and withholdings taxes, including the alternative minimum tax imposed by Section 1017 of the Puerto Rico Internal Revenue Code of 1994, as amended (the “P.R. Code”);

2. The 2008 Guaranteed Bonds are exempt from property taxes imposed by the Municipal Property Tax Act of 1991, as amended, and interest thereon is exempt from the municipal license tax imposed by the Municipal License Tax Act of 1974, as amended;

3. The transfer of 2008 Guaranteed Bonds by (i) gift will not be subject to gift tax under the P.R. Code in the case of donors who are residents of the Commonwealth at the time the gift is made, and (ii) death will not be subject to estate tax under the P.R. Code in the case of a decedent who at the time of death was (x) a resident of Puerto Rico and (y) a United States citizen who acquired such citizenship solely by reason of birth or residence in Puerto Rico;

4. Gain recognized from the sale or exchange of a 2008 Guaranteed Bond will be subject to income tax under the P.R. Code to taxpayers subject to Puerto Rico income tax on such gains, including individuals residing in Puerto Rico and corporations and partnerships organized under the laws of the Commonwealth;

5. The 2008 Guaranteed Bonds will be considered an obligation of an instrumentality of Puerto Rico for purposes of (i) the non-recognition of gain rules of Section 1112(f)(2)(A) of the P.R. Code applicable to certain involuntary conversions and (ii) the exemption from the surtax imposed by Section 1102 of the P.R. Code available to corporations and partnerships that have a certain percentage of their net income invested in obligations of instrumentalities of Puerto Rico and certain other investments; and

6. Interest on the 2008 Guaranteed Bonds constitutes “industrial development income” under Section 2(j) of the Puerto Rico Industrial Incentives Act of 1963, the Puerto Rico Industrial Incentives Act of 1978, the Puerto Rico Tax Incentives Act of 1987, and the Puerto Rico Tax Incentives Act of 1998, all as amended (collectively, the “Acts”), when received by a holder of a grant of tax exemption issued under any of the Acts that acquired the 2008 Guaranteed Bonds with “eligible funds,” as such term is defined in the Acts.

Prospective owners of 2008 Guaranteed Bonds, including, but not limited to, financial institutions, should be aware that ownership of the 2008 Guaranteed Bonds may result in having a portion of their interest and other expenses attributable to interest on the 2008 Guaranteed Bonds disallowed as deductions for purposes of computing the regular tax and the alternative minimum tax for Puerto Rico income tax purposes.

In the opinion of Cancio Covas & Santiago, LLP, based on the provisions of the Code now in force:

1. Interest on the 2008 Guaranteed Bonds received by a corporation (i) organized under the laws of Puerto Rico, or (ii) otherwise constituting a foreign corporation under the Code, is not subject to income taxation under the Code provided such interest is not effectively connected, or treated as effectively connected, with or attributable to the conduct of a trade or business within the United States by such corporation, such corporation is not a foreign personal holding company, a controlled foreign corporation or a passive foreign investment company under the Code, and such corporation is not treated as a domestic corporation for the purposes of the Code;

2. Interest on the 2008 Guaranteed Bonds received by an individual who is a *bona fide* resident of Puerto Rico within the meaning of Section 937 of the Code during the entire taxable year in which such interest is received will constitute gross income from sources within Puerto Rico and, therefore, is excludable from gross income for purposes of the Code pursuant to section 933(1) thereof;

3. Interest on the 2008 Guaranteed Bonds is not excludable from the gross income of the recipient thereof for federal income tax purposes under Section 103(a) of the Code; and

4. A person that is subject to income tax under the Code on its worldwide income will generally be subject to federal income tax on any gain realized upon the sale or exchange of the 2008 Guaranteed Bonds. However, pursuant to Notice 89-40 issued by the United States Internal Revenue Service on March 27, 1989, gain on the sale or exchange of the 2008 Guaranteed Bonds by an individual who is a *bona fide* resident of Puerto Rico during the entire taxable year will constitute Puerto Rico source income and, therefore, qualify for the exclusion provided in Section 933(1) of the Code, provided such Bonds do not constitute inventory in the hands of such individual.

The opinion of Cancio Covas & Santiago, LLP regarding the tax consequences under Puerto Rico law and the Code arising from ownership of, receipt of interest on, or disposition of the 2008 Guaranteed Bonds is limited to the above.

CONTINUING DISCLOSURE

In accordance with the requirements of Rule 15c2-12, as amended (the “Rule”), promulgated by the SEC, the Authority and the Commonwealth have each covenanted in a Continuing Disclosure Agreement for the benefit of the Beneficial Owners (generally, the tax owners of the 2008 Guaranteed Bonds):

(a) (1) to file, in the case of the Authority, 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 (2) to file, in the case of the Commonwealth, within 305 days after the end of each fiscal year with each NRMSIR and with any Commonwealth SID, core financial information and operating data for the prior fiscal year, including (i) the Commonwealth’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 Commonwealth (including such data concerning the Authority and any other entity to the extent it has a material impact on the Commonwealth) and revenues, expenditures, financial operations and indebtedness generally found in the Commonwealth of Puerto Rico Financial Information and Operating Data Report incorporated by reference in this Official Statement; 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 or the Commonwealth, as the case may be, to comply with clause (a) above and to file, in the case of the Authority, notice of any of the following events with respect to the 2008 Guaranteed 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 2008 Guaranteed Bonds;
- (vii) modifications to rights of security holders (including Beneficial Owners) of the 2008 Guaranteed Bonds;
- (viii) 2008 Guaranteed Bond calls;
- (ix) defeasances;
- (x) release, substitution, or sale of property securing repayment of the 2008 Guaranteed 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 Guaranteed Bonds, unless the Authority applies for or participates in obtaining the enhancement.

Event (vi). For information on the tax status of the 2008 Guaranteed Bonds, see *Tax Matters*.

The Commonwealth expects to provide the information described in clause (a)(1) above by delivering its first bond official statement that includes its financial statements for the preceding fiscal year or, if no such official statement is issued by the 305-day deadline, by delivering its Basic Financial Statements by such deadline.

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 Guaranteed Bonds, but the Authority does not undertake to provide notice of the occurrences of any material event except those events listed above.

The Commonwealth has made similar continuing disclosure covenants in connection with prior bond issuances, and has complied with all such covenants, except as hereinafter noted. The Commonwealth's audited financial statements for the fiscal year ended June 30, 2002 were filed after the Commonwealth's filing deadline of May 1, 2003, because of delays in finalizing such financial statements resulting from the implementation of Governmental Accounting Standards Board Statement No. 34 ("GASB 34"). The Commonwealth's audited financial statements for the fiscal year ended June 30, 2003 were also filed after the Commonwealth's filing deadline of April 30, 2004, because of delays in finalizing the financial statements of certain of the Commonwealth's reporting units due to the implementation of GASB 34. The Commonwealth's audited financial statements for the fiscal year ended June 30, 2004 and June 30, 2006 were also filed after the Commonwealth's filing deadline of May 1, 2005 and May 1, 2007, respectively, because various governmental agencies did not submit their audited financial statements to the central government's external auditors on time, thereby delaying the submission of the Commonwealth's audited financial statements.

The Authority and the Commonwealth acknowledge that their respective undertakings pursuant to the Rule described above are intended for the benefit of the Beneficial Owners of the 2008 Guaranteed Bonds, and shall be enforceable by any such Beneficial Owners; provided that the right to enforce the provisions of the particular undertaking shall be limited to a right to obtain specific enforcement of the Authority's or of the Commonwealth's respective 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 Guaranteed 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. See "Remedies of Bondholders" under *Summary of Certain Provisions of the Resolution*. Moreover, Proceedings filed by beneficial owners against the Commonwealth may be subject to the sovereign immunity provisions of Section 2 of Act No. 104, approved June 29, 1955, as amended (32 L.P.R.A. § 3077 and § 3077a), which governs the scope of legal actions against the Commonwealth, substantially limits the amount of monetary damages that may be awarded against the Commonwealth and provides certain notice provisions, the failure to comply with which may further limit any recovery.

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 the

respective awards of the 2008 Guaranteed 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 and the Commonwealth have 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 GUARANTEED BONDS

The 2008 Guaranteed 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 2008 Guaranteed Bonds from the Authority at a discount of \$4,351,207.13 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 2008 Guaranteed Bonds if any are taken. The obligation of the Underwriters to purchase such 2008 Guaranteed Bonds is subject to certain conditions. Such 2008 Guaranteed 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.

COMMONWEALTH COVENANT

The Commonwealth has pledged to all holders of the Guaranteed 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 Guaranteed 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 Guaranteed 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 2008 Guaranteed 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 V*. 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. The form of opinion of Special Counsel is set forth in *Appendix VI*.

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 Senior 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 Guaranteed Bonds have been assigned a rating of Baa3 by Moody's, BBB- by S&P and BBB- by Fitch. 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 Guaranteed Bonds.

VERIFICATION OF MATHEMATICAL COMPUTATIONS

Grant Thornton LLP will verify from the information provided to them the mathematical accuracy as of the date of the closing on the 2008 Guaranteed Bonds of the computations contained in the provided schedules to determine that the anticipated receipts from the securities and cash deposits listed in such schedules, to be held in escrow, will be sufficient to pay, when due, the principal, interest and call premium payment requirements, if any, of the Refunded Bonds. Grant Thornton LLP will express no opinion on the assumptions provided, nor as to the exemption from taxation of the interest on the 2008 Guaranteed 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 Resolution, the Trust Agreement and the Guaranty Act, 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 Resolution and the Trust Agreement 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, or at the principal corporate trust office of the Fiscal Agent.

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 Commonwealth Report; in *Appendix V*, the proposed form of opinion of Nixon Peabody LLP, Bond Counsel, and in *Appendix VI*, the proposed form of opinion of Cancio Covas & Santiago, LLP, Special Counsel for the Authority.

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)

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KPMG LLP
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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

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

Management's Discussion and Analysis

June 30, 2007 and 2006

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).

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(A Component Unit of the Commonwealth of Puerto Rico)

Management's Discussion and Analysis

June 30, 2007 and 2006

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		Change
	2007	2006	
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)

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Management's Discussion and Analysis

June 30, 2007 and 2006

	June 30		Change
	2006	2005	
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.

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(A Component Unit of the Commonwealth of Puerto Rico)

Management's Discussion and Analysis

June 30, 2007 and 2006

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,		Change
	2007	2006	
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	<u>\$ 5,247,768</u>	<u>4,929,813</u>	<u>317,955</u>

PUERTO RICO AQUEDUCT AND SEWER AUTHORITY
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Management's Discussion and Analysis

June 30, 2007 and 2006

	June 30,		Change
	2006	2005	
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.

PUERTO RICO AQUEDUCT AND SEWER AUTHORITY
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Management's Discussion and Analysis

June 30, 2007 and 2006

Debt Administration

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

	June 30,		Change
	2007	2006	
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 bonds	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	<u>1,517,821</u>	<u>1,544,315</u>	<u>(26,494)</u>
Bond anticipation notes:			
Series 2007 B	<u>850,000</u>	<u>—</u>	<u>850,000</u>
Notes payable:			
Water Pollution Control and Drinking Water			
Treatment Revolving Funds Loans	229,173	188,055	41,118
Notes with commercial banks	<u>250,000</u>	<u>—</u>	<u>250,000</u>
Total notes	<u>479,173</u>	<u>188,055</u>	<u>291,118</u>
Lines of credit	<u>139,524</u>	<u>725,152</u>	<u>(585,628)</u>
Long-term debt outstanding	<u>2,986,518</u>	<u>2,457,522</u>	<u>528,996</u>
Other long-term liabilities:			
Accrued compensated absences	56,876	52,304	4,572
Early retirement obligation	9,675	9,675	—
Customers' deposits	<u>69,024</u>	<u>70,703</u>	<u>(1,679)</u>
Total other liabilities	<u>135,575</u>	<u>132,682</u>	<u>2,893</u>
Total long-term obligations	3,122,093	2,590,204	\$ 531,889
Current portion	<u>138,807</u>	<u>73,984</u>	
Long-term obligations, less current portion	<u>\$ 2,983,286</u>	<u>2,516,220</u>	

PUERTO RICO AQUEDUCT AND SEWER AUTHORITY
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June 30, 2007 and 2006

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.

PUERTO RICO AQUEDUCT AND SEWER AUTHORITY
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Management's Discussion and Analysis

June 30, 2007 and 2006

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,		Change
	2007	2006	
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)

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

Management's Discussion and Analysis

June 30, 2007 and 2006

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,		Change
	2006	2005	
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.

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

Management's Discussion and Analysis

June 30, 2007 and 2006

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	<u>(53,583)</u>
Net change	<u>\$ 195,448</u>

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.

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June 30, 2007 and 2006

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		<u>(100,799)</u>
Net change	\$	<u><u>(99,219)</u></u>

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.

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June 30, 2007 and 2006

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

PUERTO RICO AQUEDUCT AND SEWER AUTHORITY
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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)

	<u>2007</u>	<u>2006</u>
Operating revenue:		
Water	\$ 492,342	330,443
Sewer	263,196	172,760
Total net operating revenue	<u>755,538</u>	<u>503,203</u>
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)	<u>589,019</u>	<u>569,886</u>
Depreciation and amortization	135,293	153,764
Total operating expenses	<u>724,312</u>	<u>723,650</u>
Operating income (loss)	<u>31,226</u>	<u>(220,447)</u>
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
Loss before capital contributions	<u>(85,206)</u>	<u>(82,564)</u>
Loss before capital contributions	<u>(53,980)</u>	<u>(303,011)</u>
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	<u>24,363</u>	<u>77,946</u>
Change in net assets	<u>(29,617)</u>	<u>(225,065)</u>
Net assets at beginning of year	<u>2,267,601</u>	<u>2,492,666</u>
Net assets at end of year	\$ <u>2,237,984</u>	<u>2,267,601</u>

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

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)

	<u>2007</u>	<u>2006</u>
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	<u>72,898</u>	<u>145,483</u>
Net cash provided by (used in) operating activities	<u>\$ 104,124</u>	<u>(74,964)</u>
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	<u>\$ 47,323</u>	<u>38,245</u>

See accompanying notes to basic financial statements.

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

Notes to Basic Financial Statements

June 30, 2007 and 2006

(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.

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

Notes to Basic Financial Statements

June 30, 2007 and 2006

(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.

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

Notes to Basic Financial Statements

June 30, 2007 and 2006

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

<u>Description</u>	<u>Useful life</u>
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

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

Notes to Basic Financial Statements

June 30, 2007 and 2006

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.

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

Notes to Basic Financial Statements

June 30, 2007 and 2006

(o) Future Adoption of Accounting Standards

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

<u>GASB Statement No.</u>		<u>Adoption required in fiscal year</u>
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.

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

Notes to Basic Financial Statements

June 30, 2007 and 2006

(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.

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

Notes to Basic Financial Statements

June 30, 2007 and 2006

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

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

Notes to Basic Financial Statements

June 30, 2007 and 2006

(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.

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

Notes to Basic Financial Statements

June 30, 2007 and 2006

(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			Ending balance
	Beginning balance	Increases	Decreases	
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	<u>658,917</u>	<u>465,481</u>	<u>(84,491)</u>	<u>1,039,907</u>
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	<u>6,349,502</u>	<u>72,258</u>	<u>—</u>	<u>6,421,760</u>
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	<u>(2,078,606)</u>	<u>(135,293)</u>	<u>—</u>	<u>(2,213,899)</u>
Total capital assets being depreciated, net	<u>4,270,896</u>	<u>(63,035)</u>	<u>—</u>	<u>4,207,861</u>
	<u>\$ 4,929,813</u>	<u>402,446</u>	<u>(84,491)</u>	<u>5,247,768</u>

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

Notes to Basic Financial Statements

June 30, 2007 and 2006

	June 30, 2006				Ending balance
	Beginning balance	Increases	Decreases	Adjustments	
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.

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

Notes to Basic Financial Statements

June 30, 2007 and 2006

(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

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June 30, 2007 and 2006

	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

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	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	<u>1,572,533</u>	<u>—</u>	<u>(28,218)</u>	<u>1,544,315</u>	<u>26,491</u>	<u>1,517,824</u>
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	<u>127,636</u>	<u>37,780</u>	<u>(32,734)</u>	<u>132,682</u>	<u>18,823</u>	<u>113,859</u>
Total – long-term obligations	<u>\$ 2,159,532</u>	<u>501,414</u>	<u>(70,742)</u>	<u>2,590,204</u>	<u>73,984</u>	<u>2,516,220</u>

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(10) Bonds Payable

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

	June 30,	
	2007	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	<u>1,557,139</u>	<u>1,586,119</u>
Bond premium	41,441	43,149
Deferred amount on refundings	<u>(80,759)</u>	<u>(84,953)</u>
Total	<u>\$ 1,517,821</u>	<u>1,544,315</u>

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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 supraaqueduct 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

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\$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

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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):

	<u>Principal</u>	<u>Interest</u>	<u>Total</u>
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	<u>1,557,139</u>	<u>1,123,137</u>	<u>2,680,276</u>
Plus unamortized premium	41,441		
Less deferred loss on debt refunding	<u>(80,759)</u>		
Bonds payable, net	<u>\$ 1,517,821</u>		

(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):

<u>Fiscal year</u>	<u>Principal</u>	<u>Interest</u>	<u>Total</u>
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
	<u>379,772</u>	<u>89,112</u>	<u>468,884</u>
Interim construction loans:			
Puerto Rico Water Pollution Control Revolving Fund	60,293		
Puerto Rico Safe Drinking Water Treatment Revolving Loan Fund	39,108		
Total	<u>\$ 479,173</u>		

(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 these 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

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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.

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(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:

<u>Coverage</u>	<u>Deductible</u>	<u>Policy Limit</u>
Real and personal property		
Windstorm	\$10 million plus a 2% additional deductible up to a maximum of \$7.5 million per location	\$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.

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June 30, 2007 and 2006

(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

PUERTO RICO AQUEDUCT AND SEWER AUTHORITY
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Notes to Basic Financial Statements

June 30, 2007 and 2006

(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.

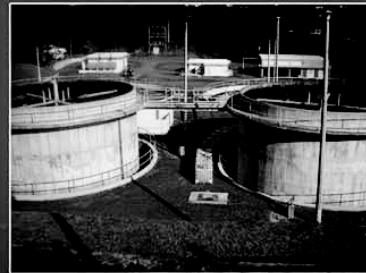
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Puerto Rico Aqueduct and Sewer Authority

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**

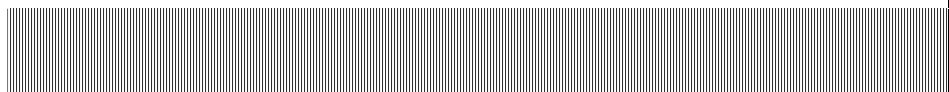


Puerto Rico Aqueduct and Sewer Authority

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.**



**MALCOLM
PIRNIE**

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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 decentralized 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 annually¹. 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
Water and Sewer System
Forecast of Financial Results of Operations (in Thousands)

EXHIBIT 1
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	MANAGEMENT'S BASE CASE										
	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
	Unaudited	Forecasted	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	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 OPERATING EXPENSES											
16 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
17 Electric Power	110,830	114,709	117,003	119,343	121,730	124,165	126,648	129,181	131,765	134,400	137,088
18 Chemicals	28,691	28,977	29,267	30,292	31,352	32,449	33,585	34,760	35,977	37,236	38,539
19 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
20 Insurance	12,676	14,050	14,331	14,618	14,910	15,208	15,512	15,823	16,139	16,461	16,791
21 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
22 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)
23 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
24 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
25 DEBT SERVICE											
26 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
27 2) Senior Bond DSRF Replenishment	-	-	-	-	-	-	-	-	-	-	-
28 3) Total Senior Subordinate Bond Debt Service (Local Banks)	13,269	15,903	17,892	17,912	17,934	-	-	-	-	-	-
29 4) Senior Subordinate DSRF Replenishment	-	-	-	-	-	-	-	-	-	-	-
30 5) Total Subordinate Bond Debt Service (New RD & SRF)	-	-	-	-	3,897	7,372	10,407	13,234	16,079	18,924	21,769
31 6) LOC Fees for Operating Reserve Funds	-	-	-	-	-	1,325	1,365	1,407	1,450	1,450	1,531
32 7) Capital Improvement Fund	-	-	-	-	-	-	-	-	-	-	-
33 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
34 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
35 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
36 DEBT SERVICE COVERAGE:											
37 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
38 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
39 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
40 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
41 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
42 ADDITIONAL BOND TESTS:											
43 Net Revenue Estimate / Levels 1-2	n/a	135%	135%	131%	145%	133%	137%	133%	128%	125%	126%
44 Net Revenue Estimate / Levels 1-4	n/a	115%	119%	118%	133%	133%	137%	133%	128%	125%	126%
45 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
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MANAGEMENT'S BASE CASE

	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
	Unaudited	Forecasted	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	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
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	MANAGEMENT'S ALTERNATE CASE											
	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	
	Unaudited	Forecasted	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	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	\$ 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	89,630
4 Rate Increases	-	-	-	86,964	86,964	86,964	140,266	140,266	152,079	157,059	206,893	206,893
5 Rate Adjustments (1)	-	-	-	-	35,932	73,840	73,840	114,183	156,712	201,529	204,743	204,743
6 Operational Initiatives	-	3,875	7,750	11,625	15,500	19,375	23,250	27,125	31,000	34,875	38,750	38,750
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)	(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)	(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	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	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	14,735
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	\$ 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	\$ 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	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	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	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	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	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)	(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	\$ 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	\$ 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	\$ 318,617
30 2) Senior Bond DSRF Replenishment	-	-	-	-	-	-	-	-	-	-	-	-
31 3.) Senior Subordinate Debt Service	-	-	2,564	2,748	2,944	-	-	-	-	-	-	-
32 <i>Term Loan (Local PR Bank Syndicate) - Principal</i>	-	-	-	-	-	-	-	-	-	-	-	-
33 <i>Term Loan (Local PR Bank Syndicate) - Interest</i>	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	21,769
34 6) LOC Fees for Operating Reserve Funds	-	-	-	-	-	-	1,395	1,449	1,506	1,565	1,626	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	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	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	\$ 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	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	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	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	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	1.02
51												
52 ADDITIONAL BOND TESTS:												
53												
54 Net Revenue Estimate / Levels 1-2	n/a	135%	133%	160%	154%	137%	144%	135%	132%	127%	128%	128%
55 Net Revenue Estimate / Levels 1-4	n/a	115%	117%	144%	141%	137%	144%	135%	132%	127%	128%	128%
Net Revenue Estimate / Levels 1-5	n/a	115%	117%	144%	137%	131%	137%	128%	124%	120%	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	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
	Unaudited	Forecasted	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	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 annually². 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.

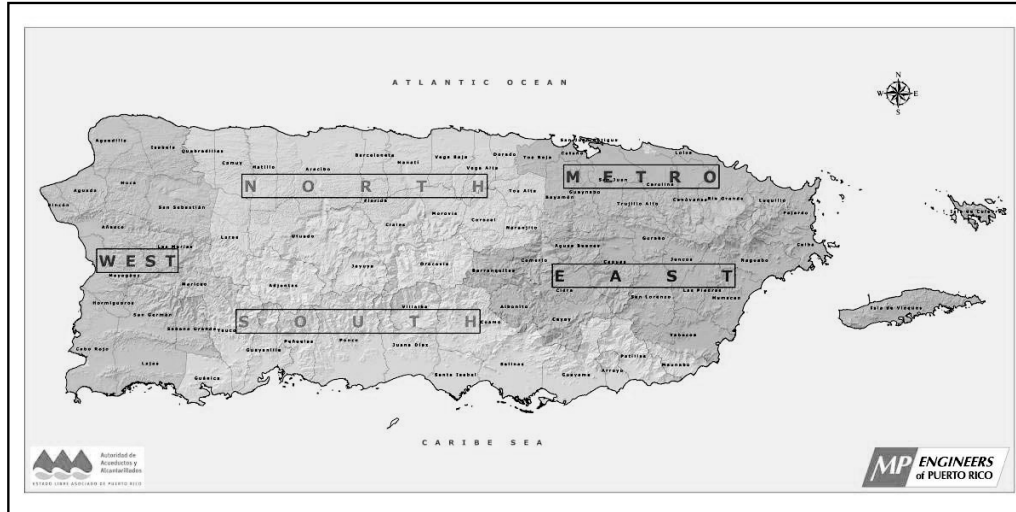
The Metro Region, which includes San Juan, has fewer and larger treatment plants than the rest of the island and therefore resembles large utilities in the U.S. more closely. The other Regions are composed of numerous, smaller treatment plants that serve small communities that are not interconnected. 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.

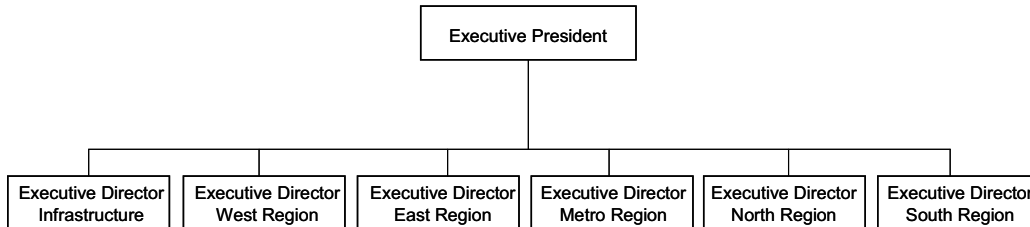
The five Regions included the four regions that previously existed (North, South, East, and Metro) and a newly created West Region. The West Region was developed by taking the far western parts of the North and South Regions.

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 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 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

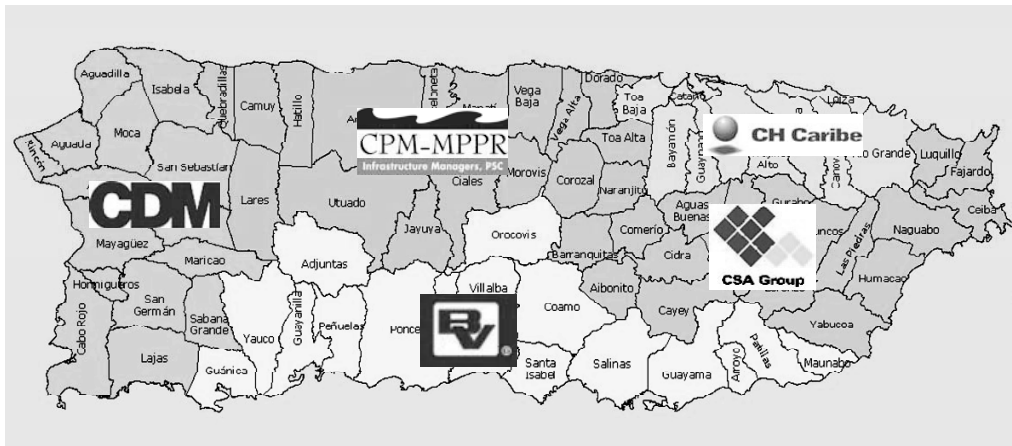
PRASA has historically faced many compliance issues with the regulatory agencies and has been subject to system-wide administrative and court orders for the past 30 years. PRASA has entered into broad agreements (Consent Decrees) with regulatory agencies,

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 overstuffed 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.

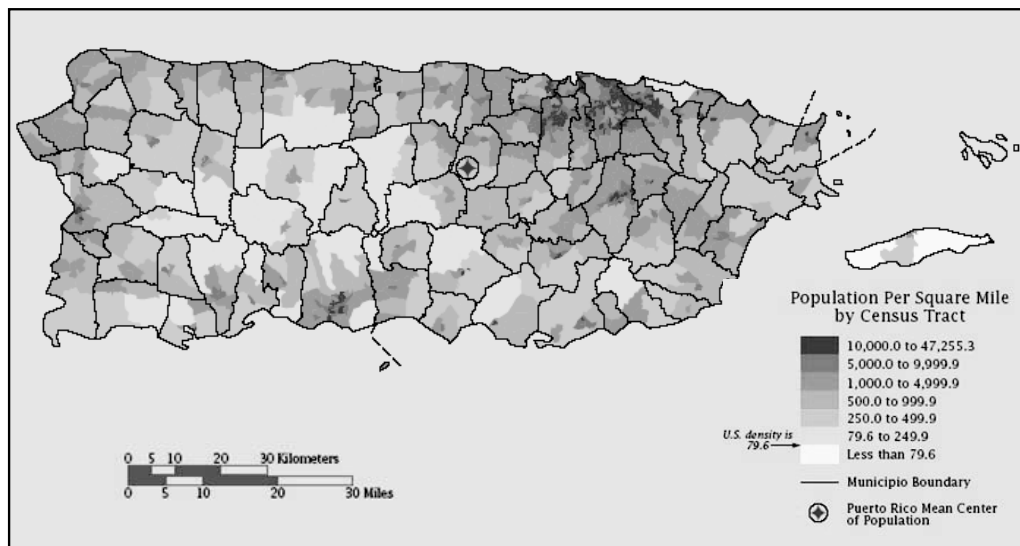
3. System Description

3.1. Introduction

PRASA serves a population of approximately 4.0 million residents plus approximately 5 million visitors annually⁴. 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 Density⁵



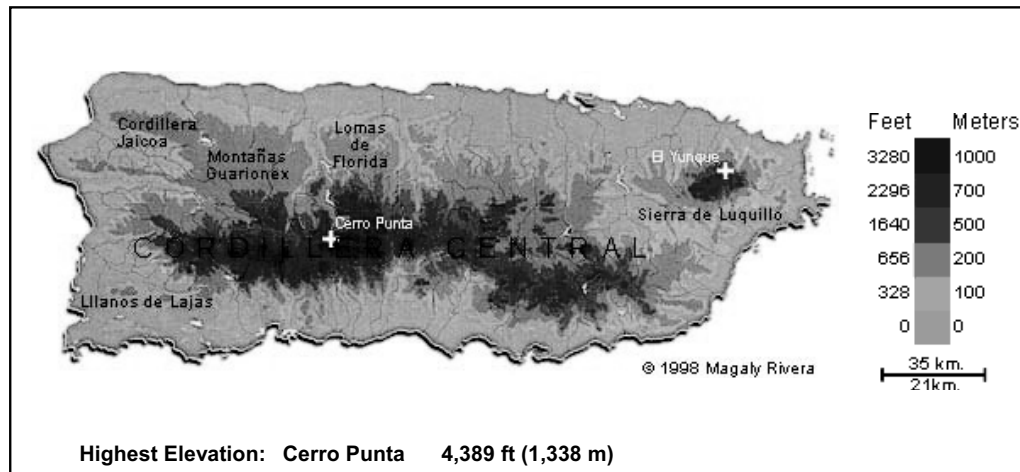
Puerto Rico’s irregular topography, shown in Figure 3-2, has historically represented a major challenge to the planning and construction of large regional systems. Topography varies from coastal flatlands to mountainous central highlands. For example, the

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 Map⁶



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

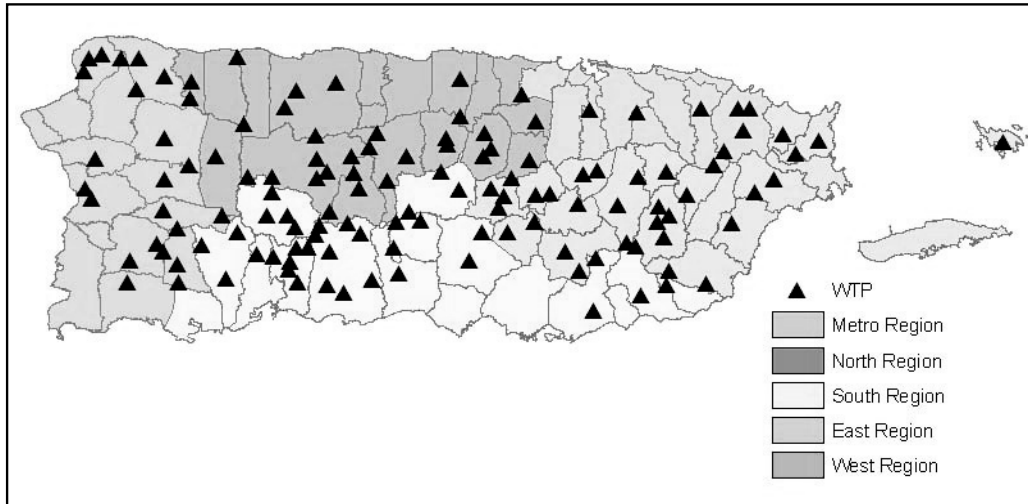
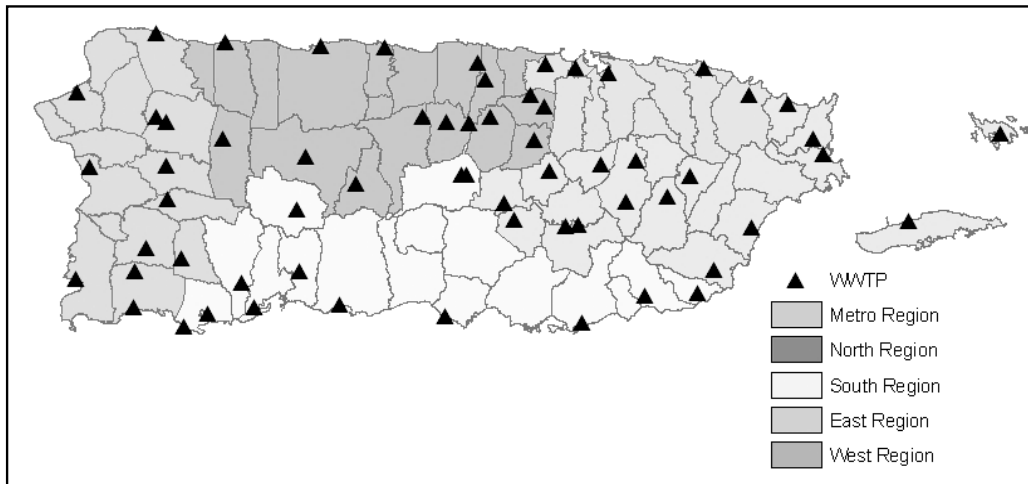


Figure 3-4: Existing Wastewater Treatment Plants

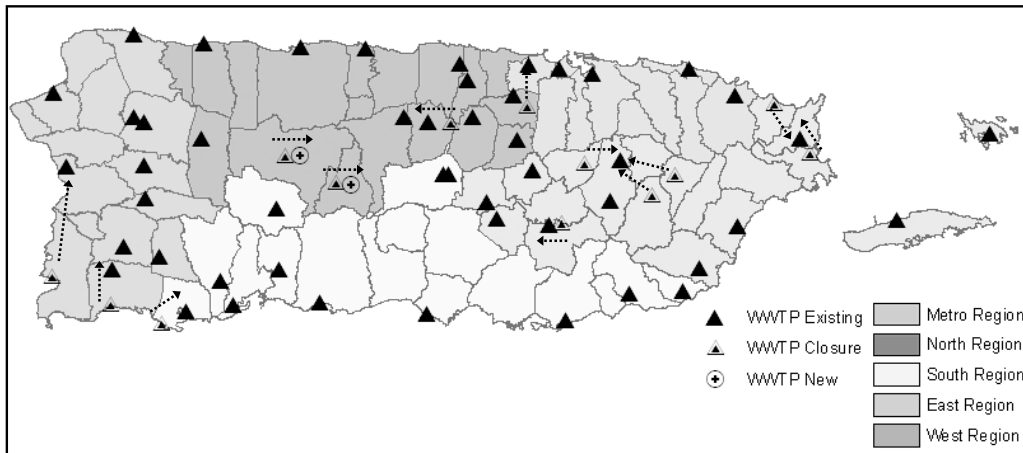


Due to the fact that PRASA serves numerous separate localities throughout the island, PRASA has many more treatment facilities than most utilities serving a similar number of customers. The Metro Region, which includes San Juan, has fewer and larger treatment plants than the rest of the island and resembles 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 Type⁷

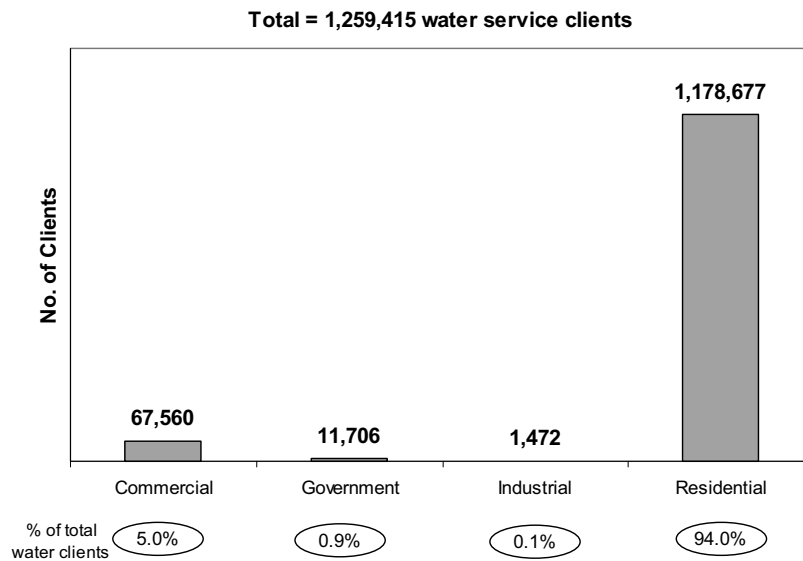
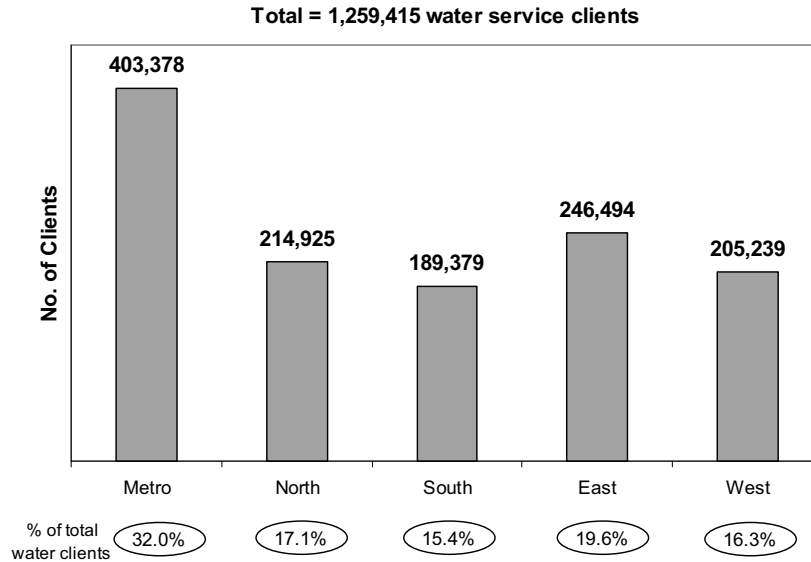


Figure 3-7: Quantity of Water Service Clients by Region



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 MGD⁸**

	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.

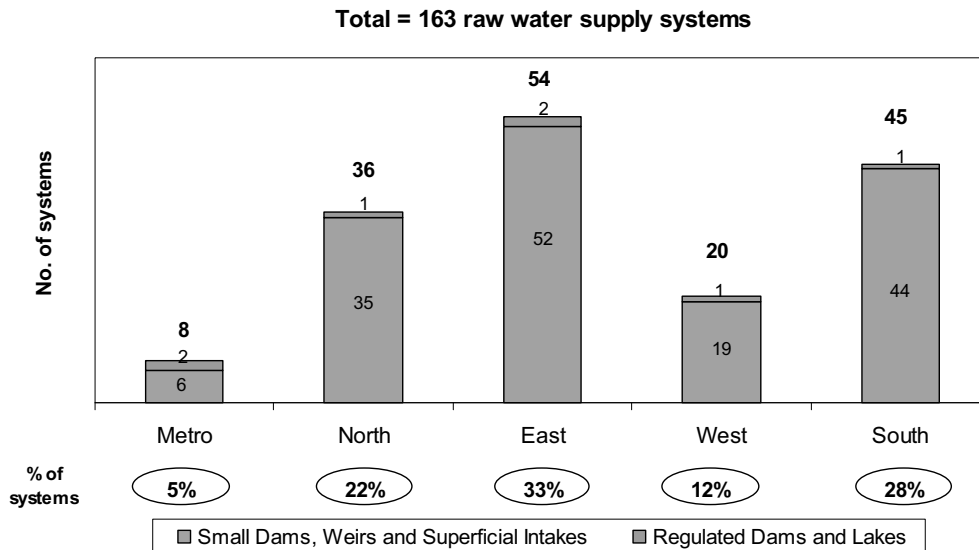
PRASA reports that it has maximum day demand supply deficits in some water service areas, which aggregate to approximately 82 million gallons per day (MGD) island-wide. This shortage of supply capacity has resulted in numerous WTPs operating above their design capacity. Many of the planned capital programs 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 Region¹⁰



Historically, droughts¹¹ 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.

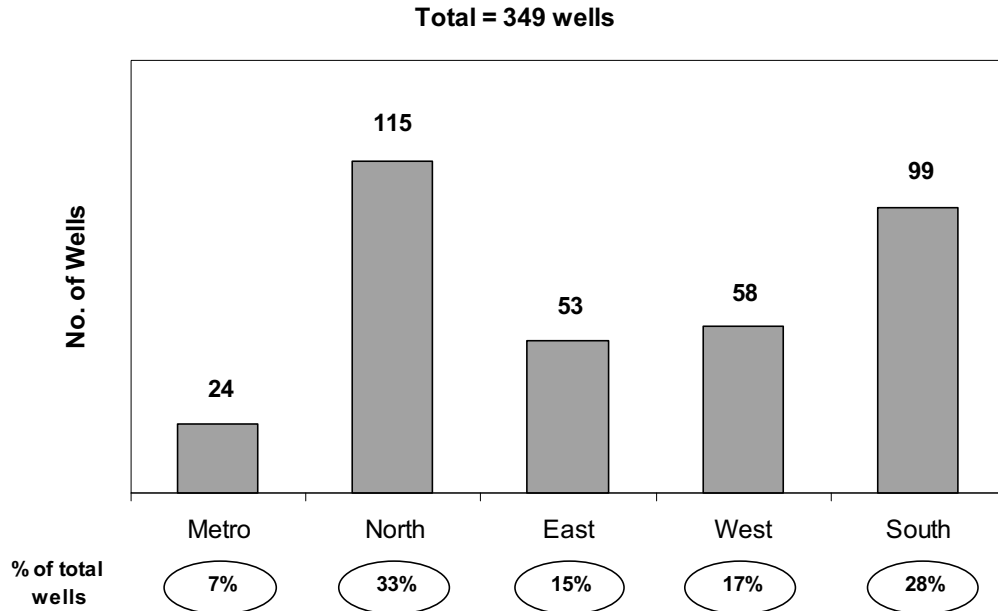
PRASA has also embarked on an island-wide initiative for educating the general population on the importance of water conservation. Through its Water Conservation Education Program, PRASA provides guidelines for managing water consumption in households through the use of water efficient equipment and 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:

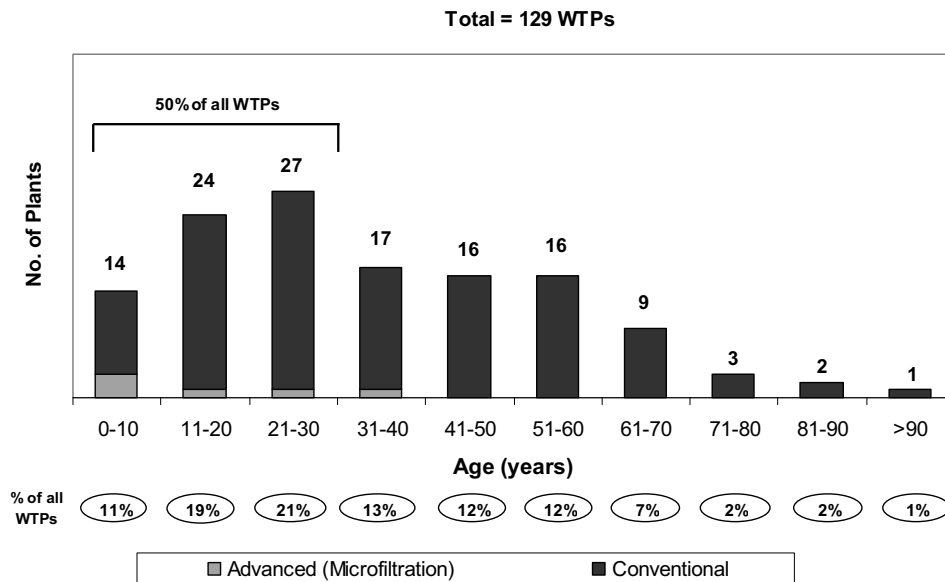
- **Technology** – 123 WTPs use conventional water treatment technology. Five use advanced water treatment technology (microfiltration) and 1 uses desalination (Figure 3-10).
- **Age** – Approximately half of the WTPs have been constructed in the last 30 years (Figure 3-10).
- **Average Capacity** – 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 Type¹³



¹³ The "Advanced (Microfiltration)" category includes one desalination water treatment plant.

Figure 3-11: Quantity of WTPs by Design Capacity

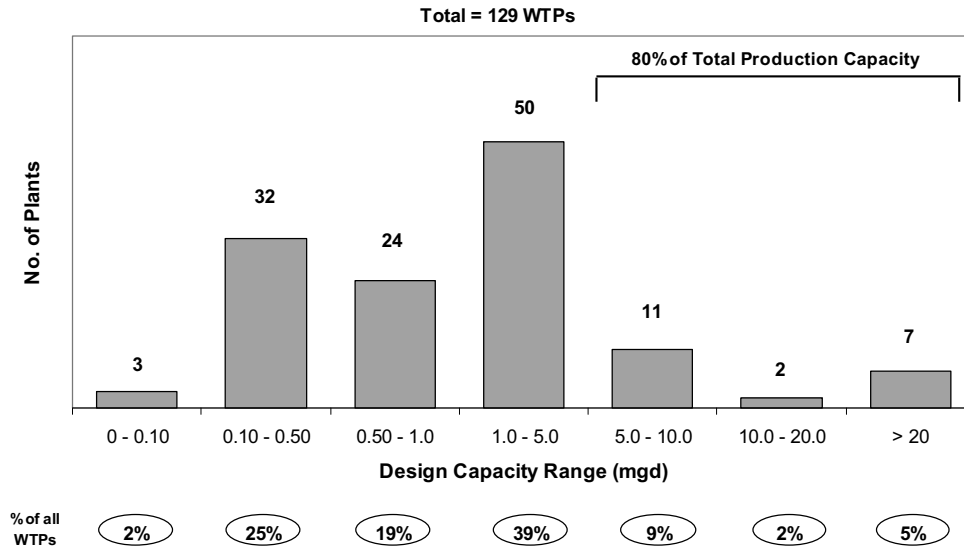


Figure 3-12: Quantity and Average Capacity of WTPs by Region

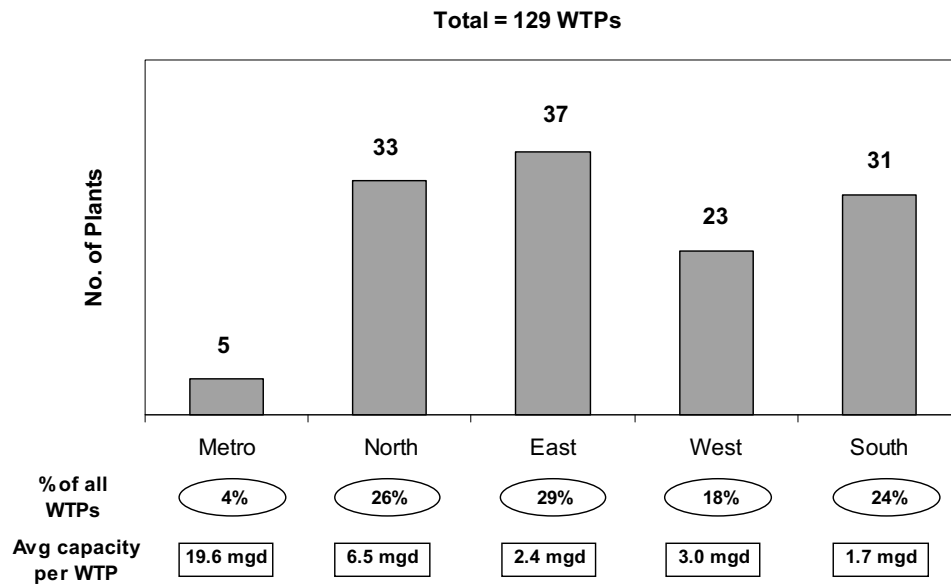
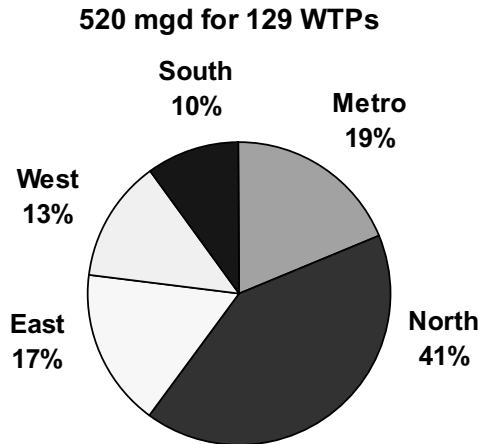


Figure 3-13: Design Capacity of WTPs by Region¹⁴



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:

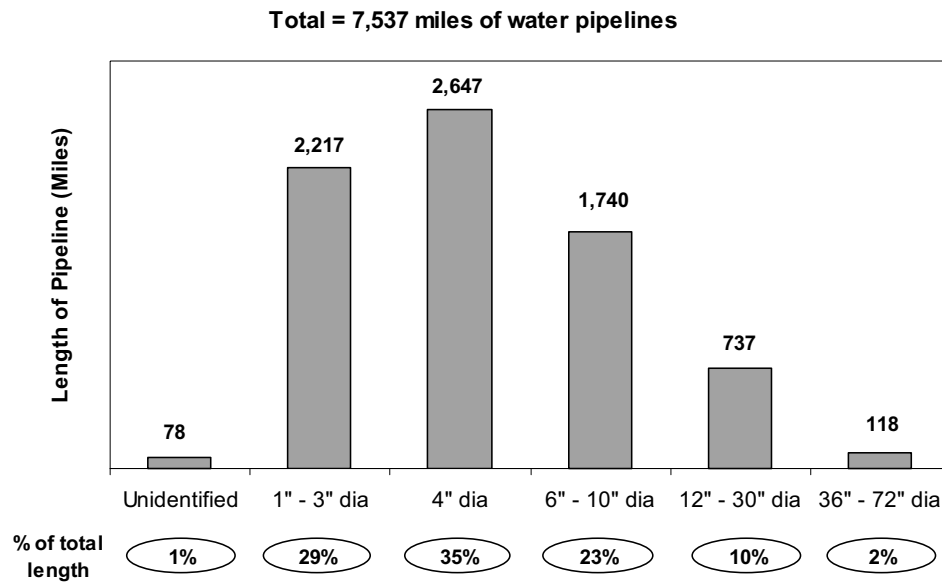
- No differentiation is made between transmission and distribution water pipes.
- Incomplete data set due to buried infrastructure and lack of field verification.
- Inability to determine the material of the water pipes.

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

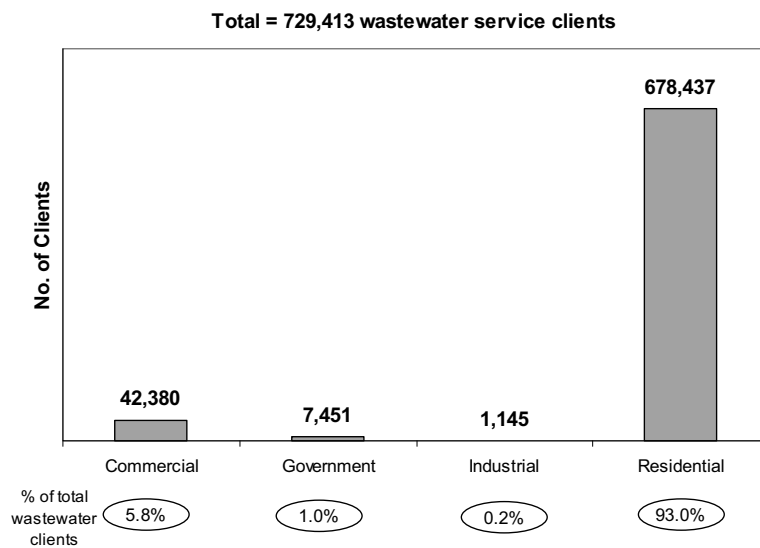
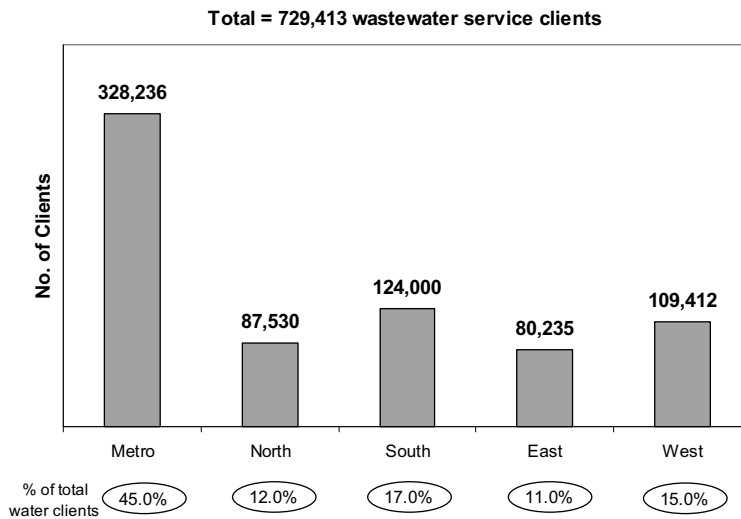


Figure 3-16: Quantity of Wastewater Service Clients by Region¹⁵



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

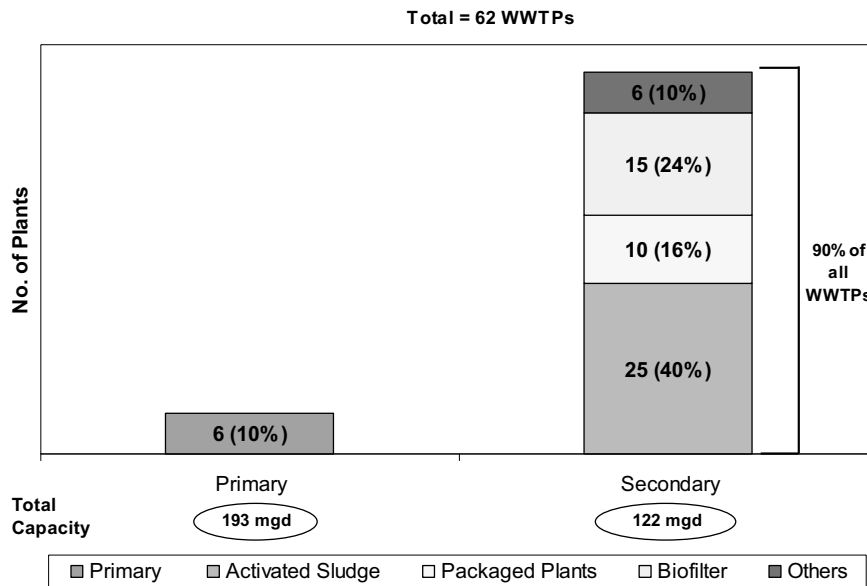
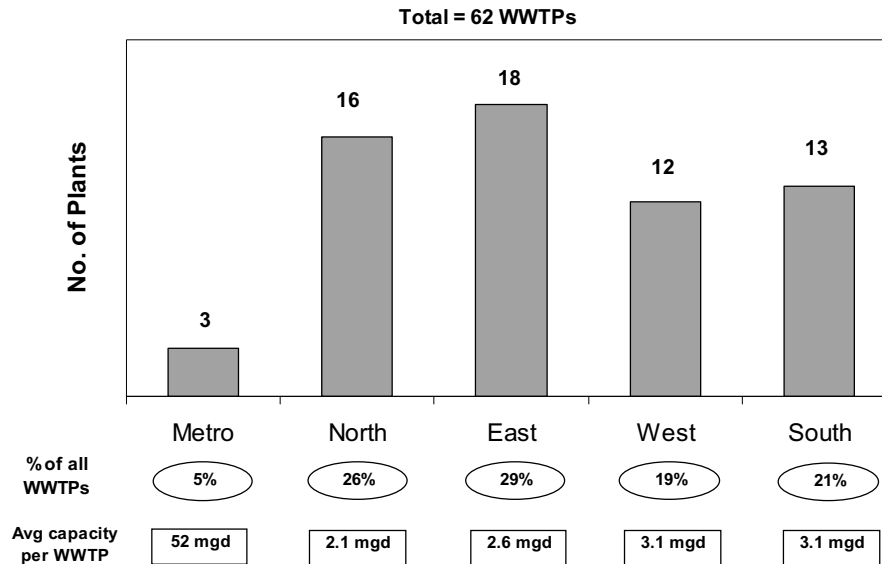


Figure 3-18: Quantity and Average Capacity of WWTPs by Region



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.

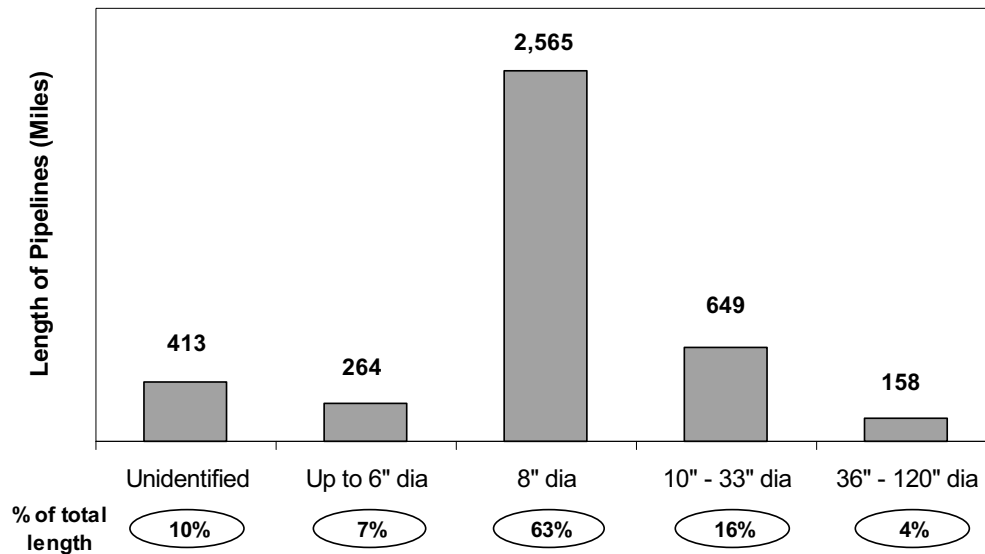
Key observations:

- 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

Total = 4,048 miles wastewater pipelines



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:

<u>Rating</u>	<u>Range</u>
■ 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:

$$\text{Unaccounted for Water} = \frac{(\text{volume produced} - \text{volume billed} - \text{volume unbilled but authorized})}{\text{volume produced}}$$

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

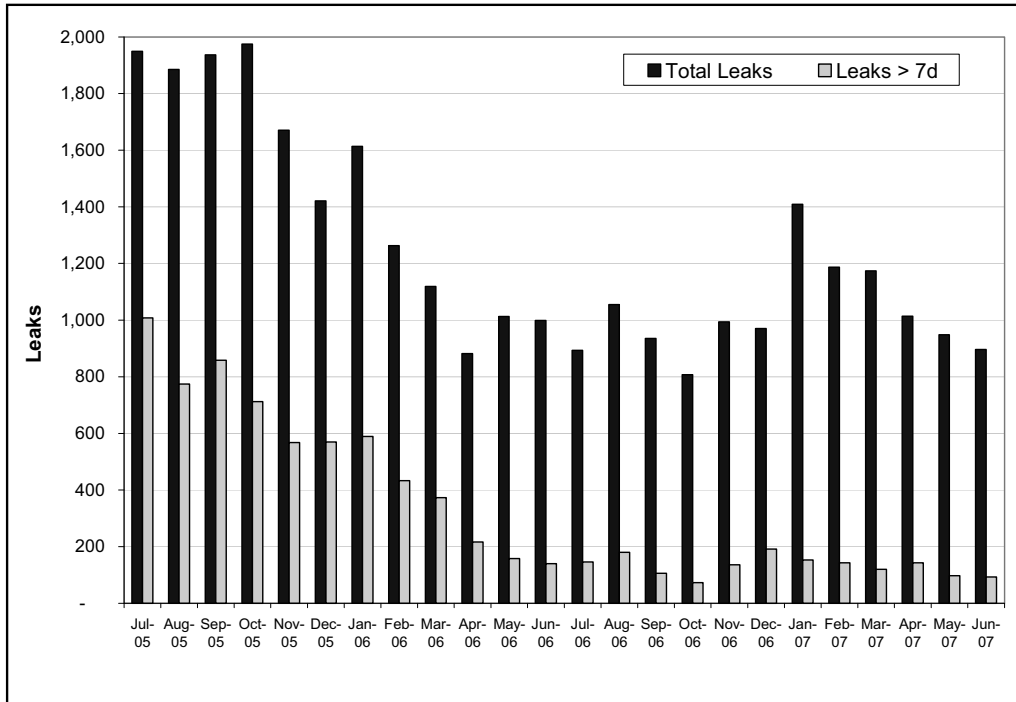


Table 4-12.
Water Distribution System Integrity Utility Benchmarks
(Annual leaks and breaks per 100 miles)

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

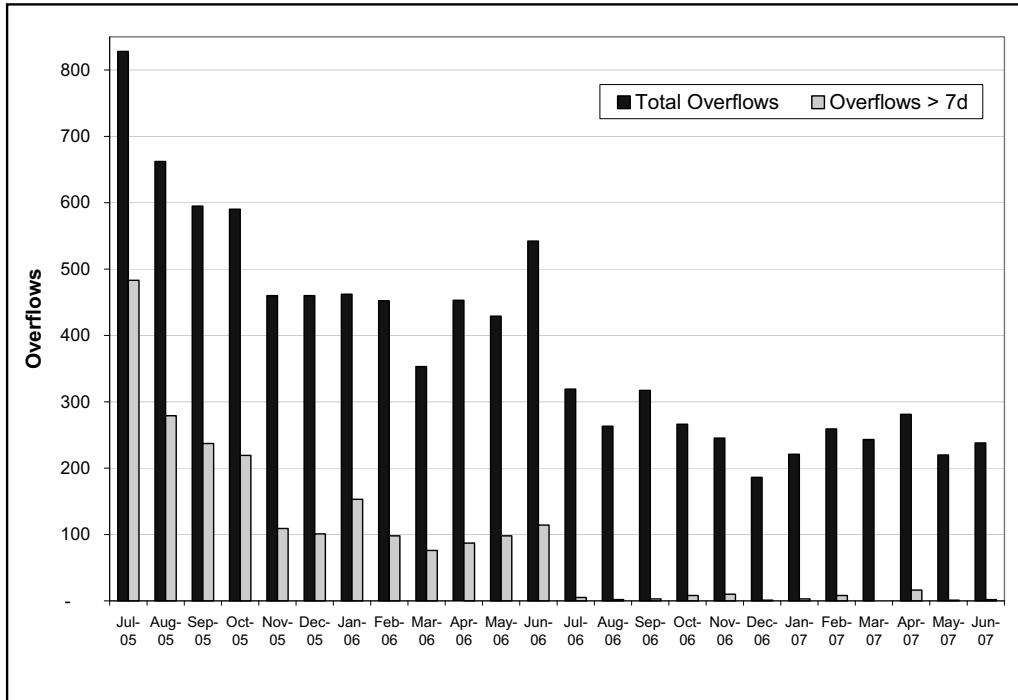


Table 4-13.
Sewer Overflow Rate Utility Benchmarks
(Annual overflows per 100 miles)

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

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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) Spanish writing Conversational English	1,120
	Management Development	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

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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:

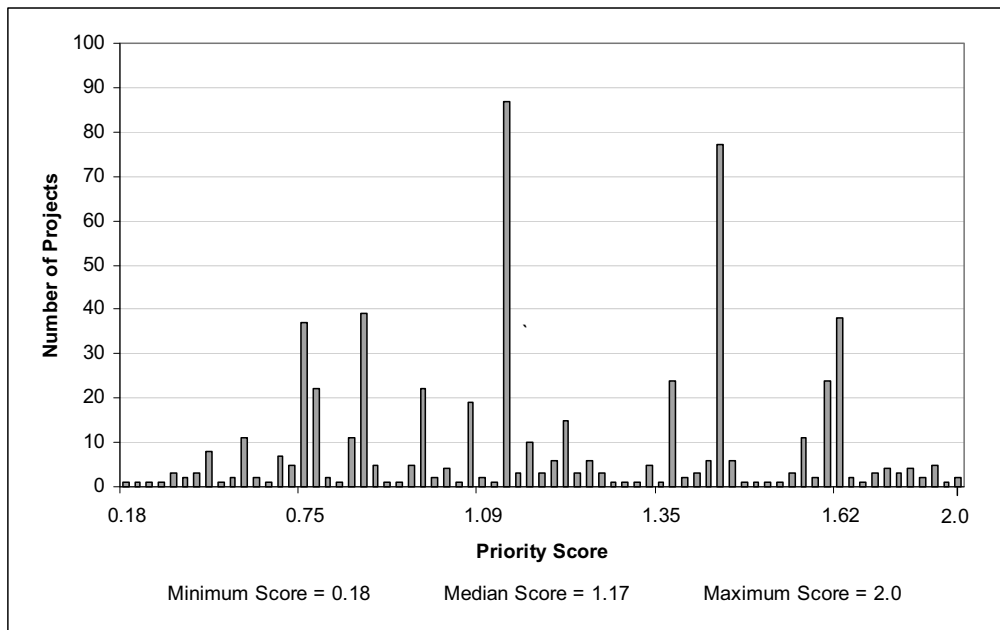
- Environmental Compliance (35% weight) – Satisfying local and federal environmental regulations, discharge limits, watershed protection, and sludge treatment and handling.
- Quality of Service (22% weight) – Service quality improvements, improvements to existing service areas, service continuity, WTP capacity expansion to meet demand, and treated water storage.

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- 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

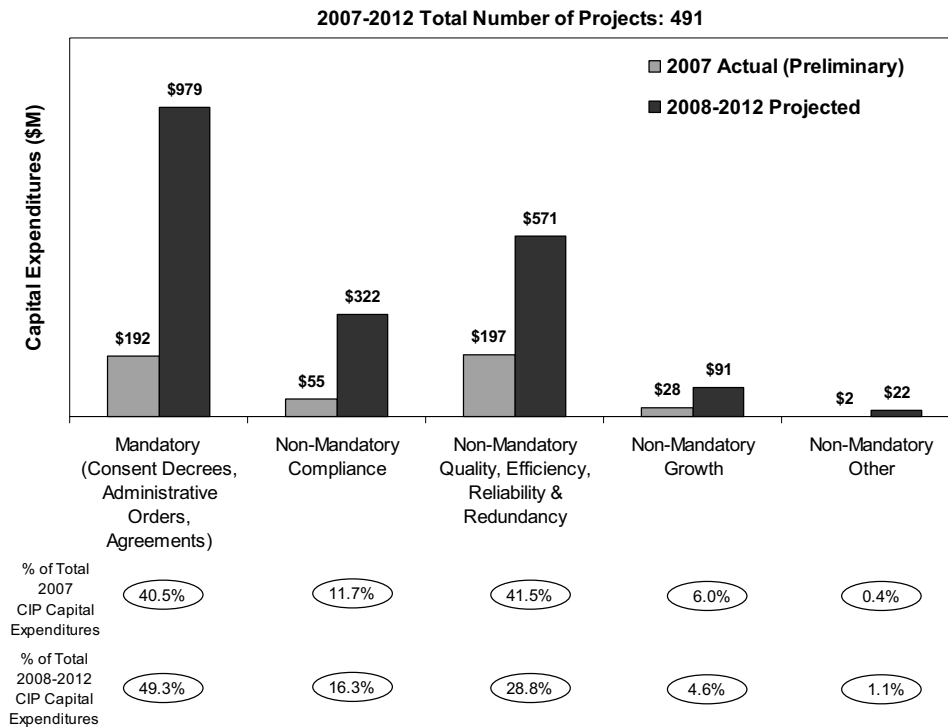
PRASA incurred \$475M of capital expenditures in FY2007, which included \$192M for projects in the mandatory classification. During FY2007, PRASA managed 319 capital projects that commenced during or prior to FY2007.

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



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Capital Improvements Program (CIP) and Regulatory Compliance Status

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

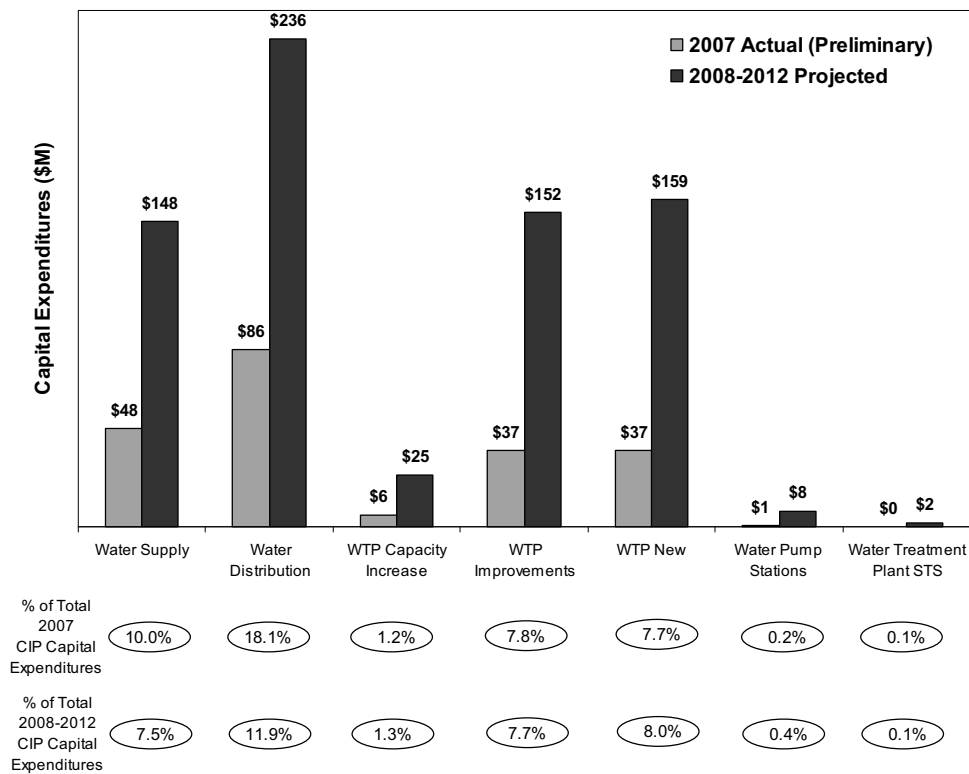
⁽¹⁾ Numbers may not add due to rounding.

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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

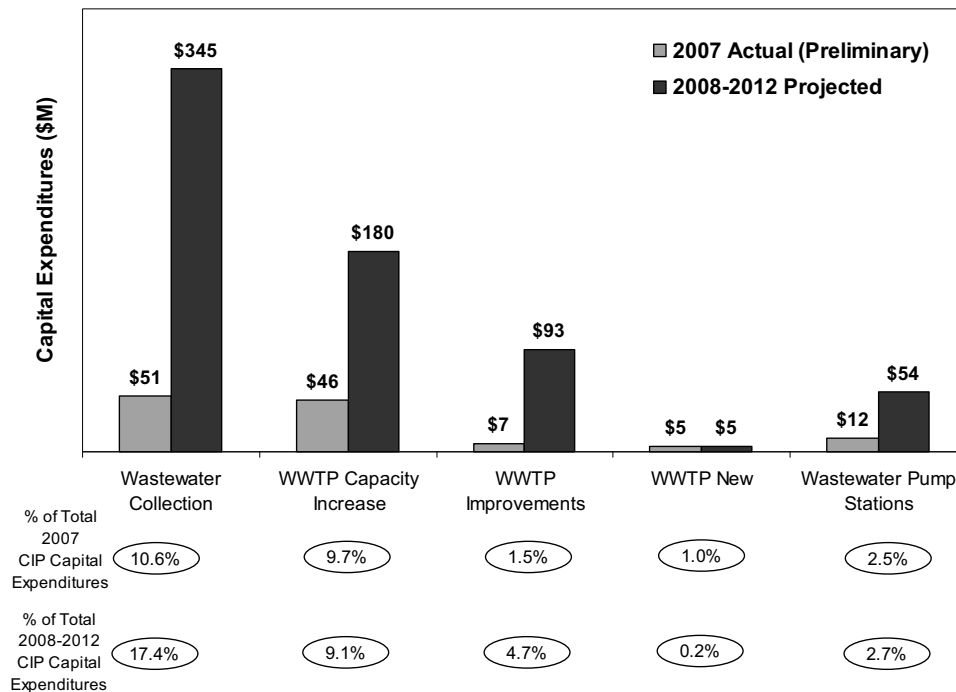


6.2.3.2. Wastewater System Projects

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.

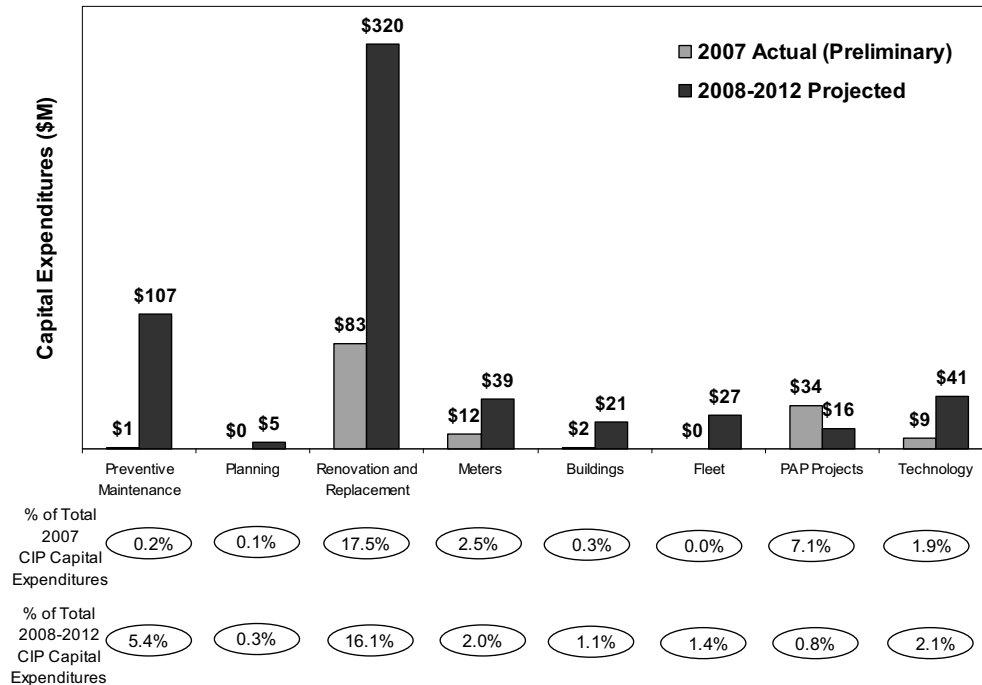
Figure 6-4: Wastewater System Capital Expenditures by Project Type



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 Compañía 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.

Capital Improvements Program (CIP) and Regulatory Compliance Status

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. 23 rd 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, Rio 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)

Capital Improvements Program (CIP) and Regulatory Compliance Status

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.

Capital Improvements Program (CIP) and Regulatory Compliance Status

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.

Capital Improvements Program (CIP) and Regulatory Compliance Status

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 contaminants 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 contaminants 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

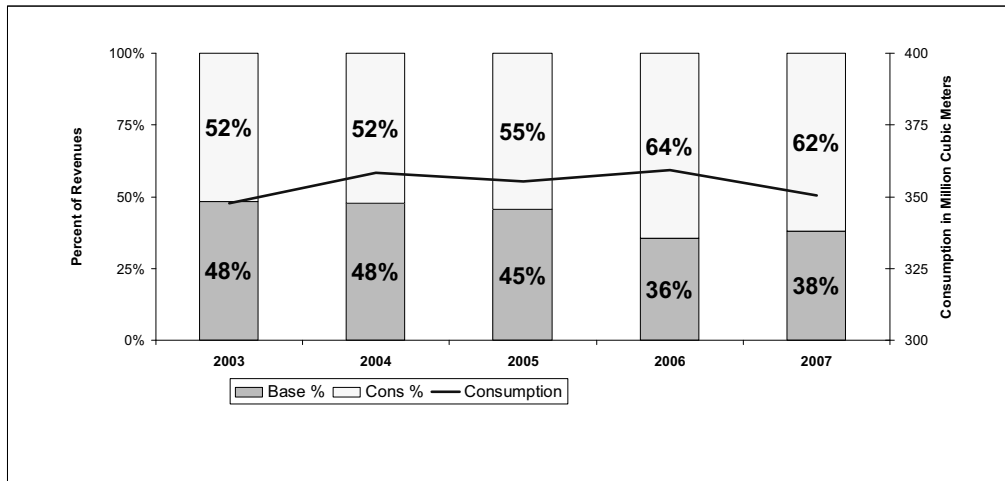
Operating Revenues ⁽¹⁾	FY2004 ⁽²⁾ Audited	FY2005 ⁽³⁾ Audited	FY2006 ⁽³⁾ Audited	FY2007 ⁽⁴⁾ Unaudited
Water	\$220,659	\$217,148	\$352,495	\$515,407
Sewer	114,301	111,570	186,287	277,518
Total Operating Revenues	\$334,960	\$328,718	\$538,782	\$792,925
% Change	(0.6%)	(1.9%)	63.9%	47.2%

- (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 report¹⁸ 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 2007¹⁹ 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 prices²⁰. 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.

FINAL
Section 7
Financial Analysis

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

EXHIBIT 1
Page 1

	MANAGEMENT'S BASE CASE											
	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	
	Unaudited	Forecasted	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	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	\$ 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	\$ 1,219,876	
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	158,786	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)	(47,834)	(48,747)	(49,645)	(50,528)	(51,395)	
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 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	
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	
40 DEBT SERVICE COVERAGE:												
41 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	
42 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	
43 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	
44 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	
45 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	
47 ADDITIONAL BOND TESTS:												
48 Net Revenue Estimate / Levels 1-2	n/a	135%	135%	131%	145%	133%	137%	133%	128%	125%	126%	
49 Net Revenue Estimate / Levels 1-4	n/a	115%	119%	118%	133%	133%	137%	133%	128%	125%	126%	
50 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.

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



FINAL
Section 7
Financial Analysis

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	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
		Unaudited	Forecasted	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	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

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



FINAL
Section 7
Financial Analysis

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	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
	Unaudited	Forecasted	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	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 OPERATING EXPENSES											
16 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
17 Electric Power	110,830	116,150	121,957	128,055	134,458	141,191	148,240	155,652	163,435	171,606	180,187
18 Chemicals	28,691	28,977	29,267	30,731	32,267	33,880	35,575	37,353	39,221	41,182	43,241
19 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
20 Insurance	12,676	14,050	14,331	14,618	14,910	15,208	15,512	15,823	16,139	16,462	16,791
21 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
22 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)
23 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
24 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
25 DEBT SERVICE (Seniority level indicated by number)											
26 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
27 2) Senior Bond DSRF Replenishment	-	-	-	-	-	-	-	-	-	-	-
28 3) Senior Subordinate Debt Service	-	-	-	-	-	-	-	-	-	-	-
29 Term Loan (Local PR Bank Syndicate) - Principal	-	-	2,564	2,748	2,944	-	-	-	-	-	-
30 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)	27,293	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 DEBT SERVICE COVERAGE:											
40 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
41 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
42 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
43 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
44 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
45 ADDITIONAL BOND TESTS:											
46 Net Revenue Estimate / Levels 1-2	n/a	135%	133%	160%	154%	137%	144%	135%	132%	127%	128%
47 Net Revenue Estimate / Levels 1-4	n/a	115%	117%	144%	141%	137%	144%	135%	132%	127%	128%
48 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.											

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Consulting Engineer's Report in Connection with PRASA's 2008 Bond Issue



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	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
	Unaudited	Forecasted	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	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 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

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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 Administration
FY	Fiscal Year
GIS	Geographical Information System
gpm	Gallons per minute
GWR	Ground Water rule
HAA	Haloacetic Acid
HIEPAAA	Hermanidad 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

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Appendix A
List of Acronyms

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
PCCP	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



FINAL
Appendix A
List of Acronyms

WTP	Water treatment plant
WWTP	Wastewater treatment plant



MP ENGINEERS
of PUERTO RICO and its subcontractor

**MALCOLM
PIRNIE**

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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;

(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 the 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 Trustee, (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 depository, 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 Depository” 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 depository 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 and (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.

Disposition of Authority Revenues.

(a) The Authority shall deposit, or cause to be deposited, all Revenues in the Authority Revenue Fund. Unless and until an Event of Default specified in paragraphs (a), (b), (c), (d) or (e) of the section entitled "Events of Default" below shall have occurred, the Authority shall apply the amounts on deposit in the Authority Revenue Fund to the payment of Current Expenses. Upon the occurrence of an Event of Default specified in paragraphs (a), (b), (c), (d) or (e) of the section entitled "Events of Default" below, amounts on deposit in the Authority Revenue Fund shall be applied in accordance with the section entitled "Application of Moneys" below.

(b) No later than the Business Day prior to each Deposit Date, the Authority shall transfer, or cause to be transferred, the balance on deposit in the Authority Revenue Fund to the Deposit Fund.

(c) On each Deposit Date, the Trustee shall transfer the amount on deposit in the Deposit Fund, in the following order of priority, but if the amounts so transferred shall be insufficient (after taking into account all prior deposits) to make any deposit as set forth below in this subsection, the Trustee shall only be required to deposit the amount then remaining after such prior deposits:

(i) To the Senior Bond Fund, the amount required to be deposited therein pursuant to paragraph (a) of the section entitled “Senior Bond Fund” below;

(ii) To the Senior Debt Service Reserve Fund, the amount required to be deposited therein pursuant to paragraph (a) of the section entitled “Senior Debt Service Reserve Fund” below;

(iii) To the Senior Subordinate Bond Fund, the amount required to be deposited therein pursuant to paragraph (a) of the section entitled “Senior Subordinate Bond Fund” below;

(iv) To the Senior Subordinate Debt Service Reserve Fund, the amount required to be deposited therein pursuant to paragraph (a) of the section entitled “Senior Subordinate Debt Service Reserve Fund” below;

(v) To the Subordinate Bond Fund, the amount required to be deposited therein pursuant to paragraph (a) of the section entitled “Subordinate Bond Fund” below;

(vi) To the Subordinate Debt Service Reserve Fund, the amount required to be deposited therein pursuant to paragraph (a) of the section entitled “Subordinate Debt Service Reserve Fund” below;

(vii) To the Operating Reserve Fund, the amount required to restore the balance on deposit therein to the Operating Reserve Requirement and to pay interest on and reimbursement obligations due with respect to an Operating Reserve Facility in accordance with paragraph (a) of the section entitled “Operating Reserve Fund” below;

(viii) To the Capital Improvement Fund, the amount required to be deposited therein pursuant to paragraph (a) of the section entitled “Capital Improvement Fund” below;

(ix) To the Commonwealth Payments Fund, the amount required to be deposited therein pursuant to paragraphs (a) and (b) of the section entitled “Commonwealth Payments Fund” below; and

(x) To the Surplus Fund, any remaining balance.

(d) The Trustee shall provide the Authority with a monthly certificate setting forth that, to the extent that amounts on deposit in the Deposit Fund were sufficient therefor, the transfers required by clauses (i) through (x) of paragraph (c) above have been made and the respective balances of such Funds and Accounts. If the amounts so deposited on any Deposit Date to the credit of the foregoing Funds, Accounts and subaccounts shall be less than the respective required amounts for such month, said requirements therefor shall nevertheless be cumulative and the amount of any deficiency on any Deposit Date shall be added to the amount otherwise required to be deposited in each month thereafter until such time as such deficiency shall have been eliminated. In accordance with the provisions of the Trust Agreement, in the event that on any Deposit Date there are insufficient moneys to make in full the deposit to the Commonwealth Payments Fund as required by paragraphs (a) and (b) of the section entitled “Commonwealth Payments Fund” below, the Trustee shall provide notice of such insufficiency to the Consulting Engineer, other Consultants, if any, and to Government Development Bank for Puerto Rico. In no event will failure to make the transfers required by subsection (c) of this section be an Event of Default hereunder if such failure is due to insufficient moneys therefor.

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 Depository 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.

Rate Covenant.

(a) The Authority shall fix, charge and collect such rates, fees, rentals and other charges for the use of and the services furnished by the Systems and shall, from time to time and as often as shall appear 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 (6) months after the end of each Fiscal Year based upon the Authority's most recent audited financial statements):

(i) 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;

(ii) 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; and

(iii) Net Revenues, shall be sufficient in each Fiscal Year to pay (A) Annual Debt Service on Indebtedness, (B) 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 amount on deposit therein to the amount of the applicable Debt Service Reserve Requirement (provided that such Accounts will be deemed to be funded at the applicable Debt Service Reserve Requirement for so long as the deposits required by paragraphs (c)(ii), (iv) and (vi) of the section entitled "Disposition of Authority Revenues" above 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 Fund 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.

(b) 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 deposits required by the section entitled "Disposition of Authority Revenues" above to the Senior Bond Fund, the Senior Subordinate Bond Fund and the Subordinate Bond Fund, (iii) there is a deficiency in a Senior Debt Service Reserve Account, a Senior Subordinate Debt Service Reserve Account or a Subordinate 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 paragraphs (c)(ii), (iv) and (vi) of the section entitled "Disposition of Authority Revenues" above 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. 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.

(c) 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. Upon the adoption of any revision of rates, fees and charges, the Authority shall cause a certified copy thereof to be filed with the Trustee.

In the event that the Authority shall fail to diligently pursue an adjustment of the schedule of rates, fees and charges in accordance with the provisions of this section, the Trustee, without regard to whether an Event of Default shall have occurred, shall, upon the request of the Holders of not less than ten per centum (10%) in principal amount of all Senior Bonds then Outstanding and upon being indemnified to its satisfaction, institute and prosecute in a court of competent jurisdiction an appropriate suit, action or proceeding to compel the Authority to adjust such schedule in accordance with the requirements of this section, and the Authority covenants 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.

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 Depository.

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 arrearages 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 become 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.

APPENDIX IV

COMMONWEALTH OF PUERTO RICO Financial Information and Operating Data Report January 1, 2008

COMMONWEALTH OF PUERTO RICO
Financial Information and Operating Data Report
January 1, 2008

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COMMONWEALTH OF PUERTO RICO
Financial Information and Operating Data Report
July 1, 2007

INTRODUCTION

Geographic Location and Demography

Puerto Rico, the fourth largest of the Caribbean islands, is located approximately 1,600 miles southeast of New York City. It is approximately 100 miles long and 35 miles wide.

According to the United States Census Bureau, the population of Puerto Rico was 3,808,610 in 2000 (3,927,776 as of July 1, 2006 according to a Census Bureau estimate), compared to 3,522,000 in 1990. As of 2000, the population of San Juan, the island's capital and largest city, was 434,375.

Relationship with the United States

Puerto Rico was discovered by Columbus in 1493 and shortly thereafter the island was conquered and settled by the Spaniards. It remained a Spanish possession for four centuries.

Puerto Rico came under United States sovereignty pursuant to the Treaty of Paris, signed on December 10, 1898, which ended the Spanish-American War. Puerto Ricans have been citizens of the United States since 1917. In 1950, after a long evolution toward greater self-government for Puerto Rico, the Congress of the United States enacted Public Law 600, which is "in the nature of a compact" and which became effective upon its acceptance by the electorate of Puerto Rico. It provides that those sections of existing law which defined the political, economic, and fiscal relationship between Puerto Rico and the United States would remain in full force. It also authorized the people of Puerto Rico to draft and adopt their own Constitution. The Constitution was drafted by a popularly elected constitutional convention, overwhelmingly approved in a special referendum by the people of Puerto Rico and approved by the United States Congress and the President of the United States, becoming effective upon proclamation of the Governor of Puerto Rico on July 25, 1952. Puerto Rico's relationship with the United States is referred to herein as commonwealth status.

The United States and the Commonwealth of Puerto Rico (the "Commonwealth") share a common defense, market, and currency. The Commonwealth exercises virtually the same control over its internal affairs as do the 50 states. It differs from the states, however, in its relationship with the federal government. The people of Puerto Rico are citizens of the United States but do not vote in national elections. They are represented in Congress by a Resident Commissioner who has a voice in the House of Representatives but no vote. Most federal taxes, except those such as Social Security taxes which are imposed by mutual consent, are not levied in Puerto Rico. No federal income tax is collected from Puerto Rico residents on income earned in Puerto Rico, except for certain federal employees who are subject to taxes on their salaries.

The official languages of Puerto Rico are Spanish and English.

Governmental Structure

The Constitution of the Commonwealth provides for the separation of powers of the executive, legislative, and judicial branches of government. The Governor is elected every four years. The Legislative Assembly consists of a Senate and a House of Representatives, the members of which are elected for four-year terms. The highest court within the local jurisdiction is the Supreme Court of Puerto

Rico. Puerto Rico constitutes a District in the federal judiciary and has its own United States District Court. Decisions of this court may be appealed to the United States Court of Appeals for the First Circuit and from there to the Supreme Court of the United States.

Governmental responsibilities assumed by the central government of the Commonwealth are similar in nature to those of the various state governments. In addition, the central government assumes responsibility for local police and fire protection, education, public health and welfare programs, and economic development.

Principal Officials Responsible for Fiscal Matters

Aníbal Acevedo Vilá was sworn in as Governor of Puerto Rico on January 2, 2005. He is a graduate of the University of Puerto Rico, where he obtained a Bachelor's degree in Political Science and a Juris Doctor degree. He obtained an LL.M. from Harvard Law School and served as law clerk for Puerto Rico Supreme Court Judge Federico Hernández Denton and for U.S. First Circuit Court of Appeals Judge Levin Campbell. He also served in the public sector as legislative adviser to the Governor of Puerto Rico. From 1993 to 2001, he served as an elected member of the Puerto Rico House of Representatives. From 2001 until assuming his position as Governor, he served as the elected Resident Commissioner of the Commonwealth in the U.S. House of Representatives.

Juan C. Méndez Torres, Secretary of the Department of the Treasury (the "Treasury"), took office in January 2005. He is a certified public accountant and a graduate of the University of Puerto Rico, where he obtained a Bachelor's degree in Accounting and a Juris Doctor degree. He obtained an LL.M. in tax law from Georgetown University Law Center. From 2002 to mid-2004, he worked as a technical advisor to the Secretary of the Treasury. Prior to 2002, he worked as a tax attorney at a large law firm in Puerto Rico.

CPA José Guillermo Dávila Matos was appointed Executive Director of the Commonwealth of Puerto Rico Office and Management and Budget in August 2006. Before that, he served for two years as Executive Vice President for Administration, Controllership and Operations at GDB. Prior to entering public service, Dávila-Matos worked in the private sector for close to 20 years in various upper management positions. He is a Certified Public Accountant and earned a Bachelor's degree in Business Administration with a major in accounting from the University of Puerto Rico, Río Piedras. He is also a member of the American Institute of Certified Public Accountants.

Jorge Irizarry Herrans was appointed President of Government Development Bank ("GDB") on December 4, 2007. Mr. Irizarry served as Executive Vice President and Director of Financing of GDB from 2005 until his appointment as Acting President, and has over 30 years of experience in banking, investments and consulting, which he acquired while working at Chase Manhattan, Booz Allen Hamilton, Inc., Banco Mercantil, Banco de Ponce, PaineWebber, Inc., and Sandoval Associates. Mr. Irizarry has a Bachelor's degree in finance from New York University and holds a Masters Degree in Business Administration from Harvard Business School.

Political Trends

For many years there have been two major views in Puerto Rico with respect to Puerto Rico's relationship with the United States: one favoring commonwealth status, represented by the Popular Democratic Party, and the other favoring statehood, represented by the New Progressive Party. The following table shows the percentages of the total votes received by the gubernatorial candidates of the various parties in the last five elections. While the electoral choices of Puerto Rico's voters are not based solely on party preferences regarding Puerto Rico's relationship with the United States, candidates who

support a continuing relationship between Puerto Rico and the United States have prevailed in elections for many years.

	<u>1988</u>	<u>1992</u>	<u>1996</u>	<u>2000</u>	<u>2004</u>
Popular Democratic Party	48.7%	45.9%	44.5%	48.6%	48.4%
New Progressive Party	45.8%	49.9%	51.1%	45.7%	48.2%
Puerto Rico Independence Party	5.4%	4.2%	3.8%	5.2%	2.7%
Others	0.1%	-	0.6%	0.5%	0.6%

With the results of the 2004 election, control of the executive branch continued under the Popular Democratic Party while the legislative branch is now controlled by the New Progressive Party. The composition of the Senate and House of Representatives by political party is as follows:

	<u>Senate</u>	<u>House</u>
Popular Democratic Party	9	18
New Progressive Party	17	32
Puerto Rico Independence Party	1	1
Total	<u>27</u>	<u>51</u>

The next general election (gubernatorial, municipal, and legislative) in Puerto Rico will be held in November 2008. Voter participation in Puerto Rico is substantially higher than in the United States, averaging 82% since 1972.

THE ECONOMY

General

The Commonwealth has established policies and programs directed principally at developing the manufacturing and services sectors of the economy and expanding and modernizing the Commonwealth's infrastructure. Domestic and foreign investments have been stimulated by selective tax exemptions, development loans, and other financial and tax incentives. Infrastructure expansion and modernization have been to a large extent financed by bonds and notes issued by the Commonwealth, its public corporations, and municipalities. Economic progress has been aided by significant increases in the levels of education and occupational skills of the population.

Puerto Rico has enjoyed more than two decades of almost continuous economic expansion. Virtually every sector of the economy has participated in this expansion, and record levels of employment have been achieved. Factors contributing to this expansion include government-sponsored economic development programs, increases in the level of federal transfer payments, and the relatively low cost of borrowing. In some years, these factors were aided by a significant rise in construction investment driven by infrastructure projects, private investment, primarily in housing, and relatively low oil prices. In the three fiscal years after the previous recession, during fiscal year 2002, the economy expanded at a moderate annual rate of 2.2%. During fiscal year 2006, real gross national product increased only 0.7% and more recently, several key economic figures have begun to indicate a contraction of economic activity. For fiscal year 2007, the Planning Board's March 2007 projection forecasts a real gross national product decline of 1.4% followed by slight real growth of 0.8% for fiscal year 2008.

Personal income, both aggregate and per capita, has increased consistently each fiscal year from 1985 to 2006. In fiscal year 2006, aggregate personal income was \$50.9 billion (\$44.0 billion in 2000

prices) and personal income per capita was \$12,997 (\$11,218 in 2000 prices).¹ Personal income includes transfer payments to individuals in Puerto Rico under various social programs. Total federal payments to Puerto Rico, which amount to around \$15 billion annually and include transfers to local government entities and expenditures of federal agencies in Puerto Rico, in addition to federal transfer payments to individuals, are lower on a per capita basis in Puerto Rico than in any state of the United States. Contrary to the popular perception that a significant amount of federal transfers to individuals constitutes grants, 80% of the transfer payments to individuals in fiscal year 2006 (\$8.0 billion), represented entitlements for previously performed services or resulting from contributions to programs such as Social Security, Veterans' Benefits, Medicare, and U.S. Civil Service retirement pensions. Grants represent the remainder of the federal transfers to individuals, mostly concentrated in the Nutritional Assistance Program (Food Stamps) and Pell Grant (higher education) Scholarships.

Total average annual employment (as measured by the Department of Labor and Human Resources Household Employment Survey (the "Household Survey")) has also increased. From fiscal year 2003 to fiscal year 2007, annual employment increased 6.3% to 1,262,900.

The dominant sectors of the Puerto Rico economy in terms of production and income are manufacturing and services. The manufacturing sector has undergone fundamental changes over the years as a result of increased emphasis on higher wage, high technology industries, such as pharmaceuticals, biotechnology, computers, microprocessors, professional and scientific instruments, and certain high technology machinery and equipment. The services sector, including finance, insurance, real estate, wholesale and retail trade, and tourism, also plays a major role in the economy. It ranks second to manufacturing in contribution to the gross domestic product and leads all sectors in providing employment.

The following table shows the gross national product for the five fiscal years ended June 30, 2006.

	Commonwealth of Puerto Rico				
	Gross National Product				
	Fiscal Years Ended June 30,				
	2002	2003	2004	2005	2006⁽¹⁾
Gross national product – \$ millions ⁽²⁾	\$45,071	\$47,479	\$50,709	\$53,601	\$56,688
Real gross national product – \$ millions (2000 prices)	41,900	42,795	43,967	44,814	45,111
Annual percentage increase in real gross national product (2000 prices)	(0.3%)	2.1%	2.7%	1.9%	0.7%
U.S. annual percentage increase in real gross national product (2000 prices)	0.6%	1.9%	4.0%	3.0%	3.4%

(1) Preliminary.

(2) In current dollars.

Sources: Puerto Rico Planning Board and Global Insight Inc.

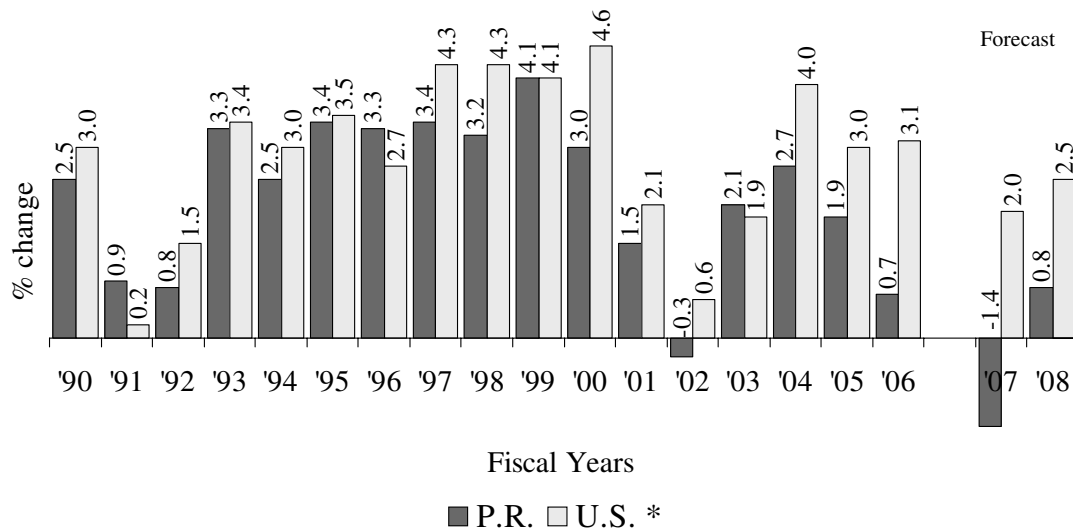
The economy of Puerto Rico is closely linked to the United States economy, as most of the external factors that affect the Puerto Rico economy (other than the price of oil) are determined by the policies and performance of the economy of the United States. These external factors include exports, direct investment, the amount of federal transfer payments, the level of interest rates, the rate of inflation, and tourist expenditures. During fiscal year 2006 (from July 1, 2005 to June 30, 2006) approximately 83% of Puerto Rico's exports went to the United States mainland, which was also the source of

¹ Different price deflators are used for gross national product and personal income statistics. The year 2000 is used as a basis for comparison because that is the year used by the U.S. Department of Commerce.

approximately 51% of Puerto Rico’s imports. Consequently, the recession in the United States in 2001 and the subsequent recovery were also reflected in the Puerto Rico economy, although to a lesser degree.

The following graph compares the growth rate of real gross national product for the Puerto Rico and United States economies since fiscal year 1990, and the forecast of the growth rate for fiscal years 2007 and 2008.

Real GNP Growth Rate



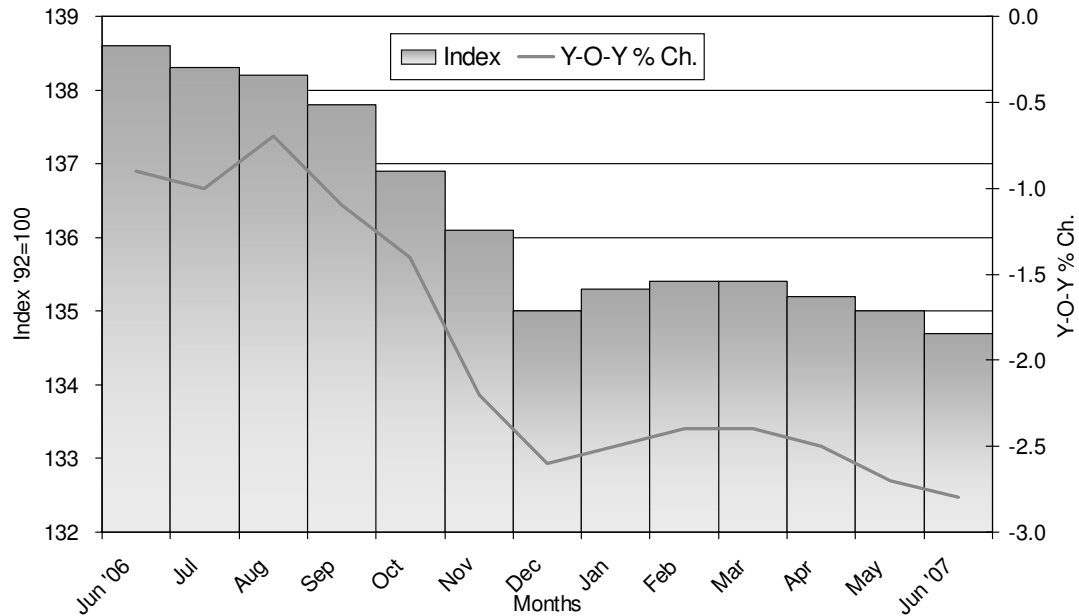
* Global Insight 11/07.

The Federal Open Market Committee has revised down its projections for GNP growth at the end of 2007 and 2008. The central tendency for growth in 2007 was reduced by about 40 basis points less than the July forecast for fiscal year 2007 and around 25 points for fiscal years 2008. Thus, Global Insight August forecast will reflect the downward scenario.

Since the 1950s, the Puerto Rico Planning Board (the “Planning Board”) has prepared a complete set of macroeconomic measures like those prepared for the United States by the Bureau of Economic Analysis (“BEA”) of the Department of Commerce, as part of the National Income and Product Accounts (“NIPA”). In contrast with BEA, which computes the economic accounts on a quarterly basis, the Planning Board computes Puerto Rico’s NIPA on an annual basis. Like BEA, the Planning Board revises its statistics on a regular basis. The Planning Board classifies its statistics as preliminary until they are revised and made final in conjunction with the release of new data each year. Thus, all macroeconomic accounts for fiscal year 2006 shown in this report are preliminary until the revised figures are released and the forecasts for fiscal years 2007 and 2008 revised. Certain information regarding current economic activity is, however, available in the form of the economic activity index of Puerto Rico, a coincident indicator of ongoing economic activity. This index, which is shown in the table below, is composed of several variables (total employment, retail sales, electric power generation, motor vehicle registrations, and indices for manufacturing, construction, tourism, and external trade), which gauge virtually all sectors of the economy.

As the following graph shows, annual economic growth has been declining since August 2006.

Coincident Economic Activity Index



Forecast for Fiscal Year 2007

The Planning Board's current real gross national product forecast for fiscal year 2007, which was released in March 2007, projected a decline of 1.4%, or 2.0% in current dollars. Personal income is expected to decline by 1.2%, or 3.1% in current dollars (see footnote 1 on page I-4). The Planning Board expects real growth to return in fiscal year 2008, albeit at only 0.8%, or 5.1% in current dollars. The major factors affecting the economy at this point are, among others, the still relatively high oil prices, the slowdown of the U.S. economic activity and the continuing economic uncertainty generated by the Commonwealth's fiscal crisis, among others, and the effects on economic activity of the implementation of the new sales tax. Consumers will take a while to adjust their behavior to this new system.

According to the Household Survey, total employment for fiscal year 2007 averaged 1,262,900, an increase of 0.8% compared to 1,253,400 for fiscal year 2006. The unemployment rate for fiscal year 2007 was 10.4%, a decrease from 11.7% for fiscal year 2006.

Fiscal Year 2006

The Planning Board's preliminary reports on the performance of the Puerto Rico economy for fiscal year 2006 indicate that real gross national product increased 0.7% (5.8% in current dollars) over fiscal year 2005. Nominal gross national product was \$56.7 billion in fiscal year 2006 (\$45.1 billion in 2000 prices), compared to \$53.6 billion in fiscal year 2005 (\$44.8 billion in 2000 prices). Aggregate personal income increased from \$48.3 billion in fiscal year 2005 (\$43.6 billion in 2000 prices) to \$50.9 billion in fiscal year 2006 (\$44.0 billion in 2000 prices), and personal income per capita increased from \$12,365 in fiscal year 2005 (\$11,179 in 2000 prices), to \$12,997 in fiscal year 2006 (\$11,218 in 2000 prices).

According to the Household Survey, total employment for fiscal year 2006 averaged 1,253,400, an increase of 1.3% compared to 1,237,600 for fiscal year 2005. The driving force behind total employment is self-employment. The unemployment rate for fiscal year 2006 was 11.7%, an increase from 10.6% for fiscal year 2005, due to the partial government shutdown in May 2006 that resulted in the two week furlough of many government employees. As in the past, the economy of Puerto Rico followed the general performance and trends of the United States economy, although at a lower rate of growth.

Among the variables contributing to the Planning Board's downward revision in the forecast were the current effect of persistent high levels of oil prices, the upward trend in short-term interest rates, the depreciation of the dollar (which affects the value of imports from foreign countries, accounting for approximately 50% of total imports to Puerto Rico), and the deceleration of public investment due to the Commonwealth's budget deficit (which served, together with other factors, to reduce activity in construction and other sectors). The persistent high level of the price of oil and its derivatives (such as gasoline) has served to reduce the income available for other purchases and, thereby, negatively affected domestic demand. Due to the Commonwealth's dependence on oil for power generation and gasoline in spite of its recent improvements in power production diversification, the high level of oil prices is expected to account for an increased outflow of approximately \$2 billion in fiscal year 2006. The upward trend in short-term interest rates has also directly affected construction activity, which has been a major contributor to economic growth in recent years, and accentuated the fiscal difficulties of the Commonwealth's government with respect to the fiscal year 2006 budget deficit. The implementation of the tax reform legislation discussed below, however, is expected to alleviate the Commonwealth's fiscal difficulties by raising additional revenues from the imposition of a sales tax but this, too, may reduce net disposable income even after giving effect to certain income tax reductions provided in the tax reform legislation. For a discussion of the Commonwealth's fiscal difficulties and the recently enacted tax reform, see "Tax Reform" under *Puerto Rico Taxes, Other Revenues, and Expenditures*.

As can be observed from the above economic activity index charts, the EAI grew by 0.6% during fiscal year 2006 but was trending significantly downward during the second half of the fiscal year.

Fiscal Year 2005

The Planning Board's reports of the performance of the Puerto Rico economy during fiscal year 2005 indicate that the economy (as registered by real gross national product) grew by 1.9%. Nominal gross national product was \$53.6 billion (\$44.8 billion in 2000 prices), compared to \$50.7 billion in fiscal year 2004 (\$44.0 billion in 2000 prices). This represents an increase in nominal gross national product of 5.7%. Aggregate personal income increased from \$45.6 billion (\$42.5 billion in 2000 prices) to \$48.3 billion in fiscal year 2005 (\$43.6 billion in 2000 prices), and personal income per capita increased from \$11,724 in fiscal year 2004 (\$10,936 in 2000 prices), to \$12,365 in fiscal year 2005 (\$11,179 in 2000 prices).

According to the Household Survey, total employment for fiscal year 2005 averaged 1,237,600, an increase of 2.7% compared to 1,205,600 for fiscal year 2004. The unemployment rate for fiscal year 2005 was 10.6%, a decrease from 11.4% for fiscal year 2004. As in the past, the economy of Puerto Rico followed the performance and general trends of the United States economy but did not reach the level of U.S. real economic growth.

Economic Development Program

The Commonwealth's economic development program is now focused on initiatives aimed at producing more diversified and sustainable economic development. The six principal elements of these initiatives, as expressed in the Governor's Economic Development and Government Transformation Plan

for Puerto Rico, are the following: (i) developing world-class infrastructure, while encouraging private investment with innovative financial models and agile, effective evaluation processes; (ii) accelerating Puerto Rico's entry into the knowledge economy by creating a center of excellence in biotechnology, engineering and computing; (iii) promoting local enterprise and supporting local businesses (in Spanish, Apoyo al de Aquí) by providing innovative financing alternatives and access to domestic and foreign markets; (iv) transforming the tourist industry into a vehicle for Puerto Rico's economic development; (v) diversifying energy-generating sources to reduce dependence on petroleum by half; and (vi) transforming Puerto Rico's government, without the need for layoffs or privatization, through effective agency consolidation and decentralization functions to offer first-class services to all citizens in a sensible, effective and agile manner and to contribute to Puerto Rico's socio-economic development.

The Commonwealth has formulated a strategic plan to increase its competitiveness in knowledge-based economic sectors, such as research and development of science and technology products. Four major components of this strategic plan are: (i) building on the strong presence in Puerto Rico of multinational companies in the science and technology sectors; (ii) building on Puerto Rico's skilled workforce to promote the expansion of research and development facilities by companies currently operating in Puerto Rico; (iii) attracting new companies in such sectors; and (iv) providing incentives for companies and entrepreneurs to engage in the process of innovation and commercialization of new products and to establish research and development facilities in Puerto Rico. The last initiative includes the creation of the Puerto Rico Science & Technology Trust, a government-sponsored trust (currently capitalized at \$4.9 million and expected to grow to \$25 million in three years), that will provide grants and financing to companies, entrepreneurs, and universities that engage in these activities. As part of this plan, construction has begun on a biotechnology plant in Mayagüez and a molecular sciences building on the main campus of the University of Puerto Rico in Río Piedras. Additionally, the Department of Transportation has transferred land to the University of Puerto Rico for the construction of a cancer center.

As part of this strategic plan, the Commonwealth is actively pursuing local participation in the aerospace industry, including engineering design services and the outsourcing of business activities. Also, recently Industrial Development Company ("PRIDCO") began a program to improve local entrepreneurial capacity by evaluating local businesses with worldwide best practices, and the Economic Development Bank started a new venture capital program offering financing to entrepreneurs that present projects with great potential for commercialization.

The Commonwealth is also providing incentives to promote the establishment of distribution and call centers, the acquisition and development of patents, and the development of a local entrepreneurial class. Distribution and call centers located in the Commonwealth will benefit from a preferential tax rate of 4% for call centers located in Puerto Rico if they offer services to Latin America and 2% if they offer hemisphere or worldwide services. The Commonwealth has decided to focus on this type of industry because it is labor intensive, presents no environmental concerns, and is generally able to start operations quickly. Over two dozen call centers have recently been established with employment of over 2,500 persons.

With respect to the acquisition and development of patents, under newly enacted legislation, the Secretary of the Treasury may (i) negotiate the payment of taxes on patent royalties; and (ii) reduce the tax rate on patent royalties to a rate as low as 2%. These incentives are in addition to those already enacted for research and development carried out in the Commonwealth. To further develop a local entrepreneurial class, the Commonwealth has enacted legislation providing local entrepreneurs with the following benefits: (i) tax incentives to retailers that use their distribution channels to sell products made in Puerto Rico in other jurisdictions; (ii) requiring at least 15% of products and services purchased by government agencies to be locally manufactured or provided; and (iii) the use of government-sponsored

financing, marketing and/or training to promote the production of economically feasible products or services for Puerto Rico markets.

Puerto Rico Tax Incentives

One of the benefits enjoyed by the Commonwealth is that corporations operating in Puerto Rico (other than corporations organized in the United States with a local branch) and individuals residing in Puerto Rico generally are not subject to federal income taxes on income derived in Puerto Rico. This enables the Commonwealth to utilize local tax legislation as a tool for stimulating economic development, and it has done so for many years. See “Tax Incentives” below.

In this regard, the Commonwealth enacted legislation extending certain benefits of its most recent tax incentives law, Act No. 135 of December 2, 1997, as amended (the “1998 Tax Incentives Act”), to all eligible businesses operating under previous tax incentives laws. These benefits include a 200% deduction for research and development expenses and worker training expenses, the ability to deduct, as a current expense, investments in machinery and equipment, and the ability to claim a tax credit equal to 25% of the purchase price of a product manufactured in the Commonwealth (in excess of a base amount) or 35% of the purchase price of a locally-manufactured, recycled product.

The 1998 Tax Incentives Act was also amended to allow a credit against their Puerto Rico income tax liability for investors that acquire the majority of the stock, partnership interests or operational assets of an exempted business that is in the process of closing operations in Puerto Rico. A credit against Puerto Rico income tax liability is also provided to investors that contribute cash to such exempted business for the construction or improvement of its physical plant and the purchase of machinery and equipment. The amount of the credit is equal to 50% of the cash invested for such purposes, not to exceed \$5,000,000 per exempted business. The credits are subject to approval by the Secretary of the Treasury, and the maximum amount of such credits for any fiscal year is \$15,000,000.

In addition, legislation was enacted (i) amending the 1998 Tax Incentives Act to permit income tax rates lower than 2% for companies that establish operations in Puerto Rico in “core pioneer industries” which utilize innovative technology in their operations not used in Puerto Rico prior to January 1, 2000; (ii) granting tax credits with respect to eligible investments made in the construction or substantial rehabilitation of housing units to be rented to low income families; (iii) granting income tax exemption to financial institutions for the fees and interest income received in connection with loans or guarantees of loans made to finance tourism development projects; (iv) granting an exemption to qualified associations administering timesharing rights or vacation clubs and to owners’ associations in areas designated as tourism enhancement districts; (v) granting tax exemption for investments in infrastructure made by housing developers; (vi) granting tax credits to Puerto Rico businesses that acquire products manufactured in Puerto Rico for exportation; and (vii) granting tax credits for rehabilitating urban centers through the development of housing projects, community areas, commercial areas, parks and recreational spaces, construction and renovation of structures, and the development of undeveloped or under-developed sites.

In December 2006, two laws were approved that provide additional tax incentives to foster economic development in Puerto Rico. Act No. 289 of December 26, 2006 amended the 1994 Puerto Rico tax code in order to facilitate the creation of local Real Estate Investment Trusts (REITs). A REIT is a corporation, usually publicly traded, that manages a portfolio of real estate to earn profits for shareholders. Under Act No. 289, a special tax rate of 10% applies to the income from this type of investment. The creation of REITs is expected to encourage investment in residential, commercial and industrial properties and hotels, and will contribute to the development of a local capital market.

Act No. 287 of December 26, 2006 created a new financing conduit for PRIDCO-sponsored economic development activity, to be known as the Puerto Rico Investment Development Initiative. The interest paid on debt securities issued by companies operating under the Puerto Rico Industrial Incentives Act of 1998 is exempt from Puerto Rico income taxes for *bona fide* residents of Puerto Rico and local corporations. The proceeds of such debt can be used for general business purposes, such as raw materials and machinery acquisition, construction, general business expenses, intellectual property and research and development, among others, but 80% of the proceeds must be used within Puerto Rico by the benefited company.

The tax incentives under the 1998 Tax Incentives Act will be available until December 31, 2007 (although tax incentive concessions granted thereunder will continue to be in effect until their respective dates of expiration). Currently, the Puerto Rico Legislature is considering whether to amend, replace, or extend the effectiveness of the 1998 Tax Incentives Act.

Reduction of the Costs of Doing Business

The Commonwealth believes that to make Puerto Rico more competitive and foster investment it needs to reduce the cost of doing business in Puerto Rico. In order to accomplish this, the Commonwealth proposes to (i) promote the creation of more cogeneration power plants to diversify energy fuel sources and reduce oil imports for electric power generation; (ii) streamline the permitting process to accelerate and reduce the cost of investment in Puerto Rico; and (iii) create a multi-agency task force to expedite critical projects. The Commonwealth has also implemented additional initiatives to restructure certain government agencies in order to improve the services offered by these agencies and provide such services in a more efficient manner. Both PRIDCO and Tourism Company have completed restructurings resulting in their being able to respond more quickly to the needs of their constituents while shedding over 500 employment positions.

The Commonwealth is in the process of diversifying its energy fuel sources. Two cogeneration power plants, one of which is fueled by coal and the other by liquefied natural gas, have reduced Puerto Rico's dependence on oil imports for the generation of electricity by approximately 25%, from 99% to 74%. Currently, as part of the Electric Power Authority's capital improvement plan, the Authority is considering building an additional cogeneration power plant fueled by liquefied natural gas in the municipality of Mayagüez.

The Department of Economic Development and Commerce initiated a reengineering of the Commonwealth's investment project evaluation process in which all branches of the Commonwealth government participated. The first phase, completed in December 2006, evaluated and developed the model. Currently, the project is in second phase, which should be completed by the end of fiscal year 2007, and which consists of evaluating all laws, bylaws and management styles. The third phase – the implementation and measurement of the reengineering – is scheduled to start during the first semester of fiscal year 2008 and is expected to be completed the following fiscal year.

Federal Tax Incentives

In connection with the phase-out of Sections 30A and 936 of the U.S. Internal Revenue Code of 1986, as amended (the "U.S. Code") (see "Tax Incentives – Incentives under the U.S. Code" below), the United States Senate requested the Joint Commission on Taxation ("JCT") and the United States Government Accountability Office ("GAO") to study the economic impact of this phase-out and present recommendations on alternative tax incentives for U.S.-based companies operating in Puerto Rico. In anticipation of the final phase-out of Sections 30A and 936 of the U.S. Code, most U.S.-based companies

operating under Sections 30A and 936 converted from United States corporations to Controlled Foreign Corporations (“CFCs”), thus lessening the impact of the phase-out of those sections on their operations.

In May 2006, the GAO published its study titled “Fiscal Relations with the Federal Government and Economic Trends during the phase-out of the Possessions Tax Credit.” The GAO study found that Puerto Rico’s per capita gross domestic product and gross national product were significantly lower compared to United States averages, and the absolute gap between the per capita gross national product of Puerto Rico residents and that of United States residents has increased. The GAO study further found that, although the value-added by United States companies claiming the possessions tax credit decreased by about two-thirds during the period 1993-2003, much of the decline was offset by growth in other corporations, such as pharmaceuticals. Finally, the GAO study determined that although residents of Puerto Rico pay considerably less total tax per capita than residents of the United States, they pay approximately the same percentage of their personal income in taxes. The GAO study, which is informative in nature, is intended to help the United States Congress decide which economic development initiatives will best suit Puerto Rico’s current situation.

In June 2006, the JCT published its pamphlet titled “An Overview of the Special Tax Rules related to Puerto Rico and an Analysis of the Tax and Economic Policy Implications of Recent Legislative Options” (the “JCT Report”). The JCT Report provides an overview of the tax and non-tax rules applicable to United States possessions, the special tax rules applicable to Puerto Rico and an economic analysis of such special tax rules. The JCT Report also presents certain legislative options and specific proposals that have been advocated by various parties in order to stimulate economic growth in Puerto Rico. Although these legislative options and specific proposals are not recommendations, the JCT Report does state that federal and Commonwealth tax policy must be coordinated in order to design and implement new tax proposals aimed at enhancing development in Puerto Rico by targeting problems unique to Puerto Rico, instead of problems common to the United States and Puerto Rico, which proposals are likely to induce business to relocate from the United State to Puerto Rico.

Recently, the United States Congress approved legislation to extend to production activities that take place in Puerto Rico the benefit of section 199 of the U.S. Code, which provides a nine percent reduction in the federal income tax rate, phased-in over five years (from 35% to 31.85% after 2009). This extension applies to activities occurring on the island of branches of U.S. corporations that are not controlled foreign corporations (“CFCs”). The Commonwealth is also seeking the extension of additional sections of the U.S. Code that provide a dividends received deduction for a percentage of profits generated in Puerto Rico by CFCs, as well as deductions that would encourage investments in research and development activities.

Employment and Unemployment

The number of persons employed in Puerto Rico during fiscal year 2007 averaged 1,262,900, a 0.8% increase from 1,253,400 in fiscal year 2006. Unemployment, although at relatively low historical levels, is about twice the United States average. The average unemployment rate decreased from 11.7% in fiscal year 2006 to 10.4% in fiscal year 2007.

The following table presents annual statistics of employment and unemployment for fiscal year 2003 through fiscal year 2007 and monthly statistics, seasonally adjusted, for the first three months of fiscal year 2008. These employment figures are based on the Household Survey, which includes self-employed individuals, instead of the non-farm, payroll employment survey (the “Payroll Survey”), which does not. The number of self-employed individuals represents around 17% of civilian employment in Puerto Rico, more than double the level in the United States.

**Commonwealth of Puerto Rico
Employment and Unemployment⁽¹⁾
(persons age 16 and over)
(in thousands)**

<u>Fiscal Years Ended June 30,</u>	<u>Labor Force</u>	<u>Employed</u>	<u>Unemployed</u>	<u>Unemployment Rate⁽²⁾</u>
		(Annual Average)		
2003	1,352	1,188	164	12.1%
2004	1,360	1,206	155	11.4
2005	1,385	1,238	147	10.6
2006	1,420	1,253	167	11.7
2007	1,409	1,263	147	10.4
		(Seasonally Adjusted)		
<u>Fiscal Year 2008</u>				
July	1,389	1,226	163	11.8%
August	1,412	1,279	133	9.4
September	1,364	1,213	151	11.1

(1) Totals may not add due to rounding.

(2) Unemployed as percentage of labor force.

Source: Department of Labor and Human Resources – Household Survey

Economic Performance by Sector

From fiscal year 2002 to fiscal year 2006, the manufacturing and services sectors generated the largest portion of gross domestic product. The three sectors of the economy that provide the most employment are manufacturing, services and government.

The following table presents annual statistics of gross domestic product by sector and gross national product for the five fiscal years ended June 30, 2002 through 2006.

Commonwealth of Puerto Rico Gross Domestic Product by Sector and Gross National Product (in millions at current prices)

	Fiscal Years Ended June 30,				
	2002	2003	2004	2005	2006 ⁽¹⁾
Manufacturing	\$31,243	\$31,532	\$33,267	\$34,363	36,556
Services ⁽²⁾	26,913	28,919	30,476	32,299	33,613
Government ⁽³⁾	6,303	6,948	7,389	8,151	8,424
Transportation, communication and public utilities	4,948	5,178	5,343	5,353	5,508
Agriculture, forestry and fisheries	277	333	414	360	333
Construction ⁽⁴⁾	1,648	1,772	1,905	1,874	1,821
Statistical discrepancy	292	146	415	251	209
Total gross domestic product ⁽⁵⁾	\$71,624	\$74,827	\$79,209	\$82,650	\$86,464
Less: net payment abroad	(26,552)	(27,348)	(28,501)	(29,049)	(29,776)
Total gross national product ⁽⁵⁾	\$45,071	\$47,479	\$50,709	\$53,601	\$56,689

(1) Preliminary.

(2) Includes wholesale and retail trade, finance, insurance and real estate, tourism, and other services.

(3) Includes the Commonwealth, its municipalities and certain public corporations, and the federal government. Excludes certain other public corporations, like the Electric Power Authority and the Aqueduct and Sewer Authority whose activities are included under Services in the table.

(4) Includes mining.

(5) Totals may not add due to rounding.

Source: Planning Board

The data for employment by sector or industries presented here, like in the United States, are based on the Payroll Survey, which is designed to measure employment by sector. The Payroll Survey excludes agricultural employment and self-employed persons.

The following table presents annual statistics of average employment based on the North American Industry Classification System (NAICS) for fiscal years 2002 to 2007.

Commonwealth of Puerto Rico
Non-Farm, Payroll Employment by Economic Sector⁽¹⁾
(persons age 16 and over)

	Fiscal Years Ended June 30,					
	2002	2003	2004	2005	2006	2007 ⁽²⁾
Natural Resources and Construction	72,142	68,525	69,300	68,233	67,442	67,392
Manufacturing						
Durable Goods	50,500	48,567	48,808	48,067	46,492	44,850
Non-Durable Goods	74,300	70,192	69,633	69,250	66,367	60,958
Sub Total	124,800	118,759	118,441	117,317	112,859	105,808
Trade, Transportation, Warehouse & Utilities						
Wholesale Trade	32,200	32,183	33,300	33,717	33,992	33,158
Retail Trade	130,675	130,183	132,008	136,192	137,800	135,058
Transportation, Warehouse & Utilities	18,017	17,358	17,042	17,617	17,433	16,700
Sub Total	180,892	179,724	182,350	187,526	189,225	184,916
Information	22,483	21,617	21,917	22,608	22,600	21,733
Finance	44,975	44,667	46,850	48,633	49,767	49,975
Professional & Business	97,408	98,500	101,900	103,767	106,400	104,767
Educational & Health	86,400	92,408	98,108	99,967	103,583	105,842
Leisure & Hospitality	65,783	67,917	70,317	72,592	74,767	73,433
Other Services	16,992	18,858	20,671	21,257	21,267	22,283
Government	288,675	297,717	303,408	307,825	302,025	297,450
Total Non-Farm	1,000,550	1,008,692	1,033,262	1,049,725	1,049,935	1,033,599

(1) The figures presented in this table are based on the Payroll Survey prepared by the Bureau of Labor Statistics of the Department of Labor and Human Resources. There are numerous conceptual and methodological differences between the Household Survey and the Payroll Survey. The Payroll Survey reflects information collected from payroll records of a sample of business establishments, while the Household Survey is based on responses to a series of questions by persons in a sample of households. The Payroll Survey excludes the self-employed and agricultural employment. Totals may not add due to rounding.

(2) Preliminary.

Source: Department of Labor and Human Resources, Current Employment Statistics Survey (Establishment Survey – NAICS Codes)

Manufacturing

Manufacturing is the largest sector of the Puerto Rico economy in terms of gross domestic product. The Planning Board figures show that in fiscal year 2006 manufacturing generated \$36.6 billion, or 42.3%, of gross domestic product. During fiscal year 2007, payroll employment for the manufacturing sector was 105,808, a decrease of 6.2% compared with fiscal year 2006, with most of the job losses occurring in labor-intensive industries. Most of the island's manufacturing output is shipped to the United States mainland, which is also the principal source of semi-finished manufactured articles on which further manufacturing operations are performed in Puerto Rico. The United States minimum wage laws are applicable in Puerto Rico. As of September 2007, the average hourly manufacturing wage rate in Puerto Rico was 68.6% of the average mainland United States rate.

Manufacturing in Puerto Rico is now more diversified than during the earlier phases of its industrial development and includes several industries less prone to business cycles. In the last three

decades, industrial development has tended to be more capital intensive and more dependent on skilled labor. This gradual shift in emphasis is best exemplified by large investments over the last decade in the pharmaceutical, scientific instruments, computers and electrical products industries in Puerto Rico. One of the factors encouraging the development of the manufacturing sector has been the tax incentives offered by the federal and Puerto Rico governments. Federal legislation enacted in 1996, however, which amended Section 936 of the U.S. Code, phased out these federal tax incentives during a ten-year period that recently ended. See “Tax Incentives – Incentives under the U.S. Code” under *The Economy*.

The following table sets forth gross domestic product by manufacturing sector for the five fiscal years ended June 30, 2002 through June 30, 2006.

Commonwealth of Puerto Rico
Gross Domestic Product by Manufacturing Sector
(in millions at current prices)

	Fiscal Years Ended June 30,				
	2002	2003	2004	2005	2006⁽¹⁾
Pharmaceuticals	\$18,681	\$18,998	\$19,814	\$20,253	\$20,820
Machinery and metal products:					
Machinery, except electrical	3,845	3,507	3,372	3,397	3,378
Electrical machinery	1,757	1,771	1,818	1,926	2,237
Professional and scientific instruments	2,191	2,981	3,540	3,802	4,494
Other machinery and metal products	312	288	274	284	291
Food products	2,092	1,903	2,202	2,290	2,489
Other chemical and allied products	578	502	591	644	679
Apparel	530	353	344	364	337
Other ⁽²⁾	1,258	1,231	1,312	1,403	1,831
Total gross domestic product of manufacturing sector ⁽³⁾	<u>\$31,243</u>	<u>\$31,532</u>	<u>\$33,267</u>	<u>\$34,363</u>	<u>\$36,556</u>

(1) Preliminary.

(2) Includes petroleum products; petrochemicals; tobacco products; stone, clay and glass products; textiles and others.

(3) Totals may not add due to rounding.

Source: Planning Board

The following table presents annual statistics of average manufacturing employment by industry based on the North American Industry Classification System (NAICS) for fiscal years 2003 to 2007.

Commonwealth of Puerto Rico
Non-Farm Payroll Manufacturing Employment by Industry Group*
 (persons age 16 years and over)

Industry Group	Fiscal Years Ended June 30,				
	2003	2004	2005	2006	2007⁽¹⁾
<u>Durable Goods</u>					
Nonmetallic Mineral Products Manufacturing	4,444	4,706	4,471	4,108	3,792
Cement and Concrete Products Manufacturing	3,543	3,867	3,750	3,542	3,208
Fabricated Metal Products	6,198	6,490	6,427	5,808	5,817
Computer and Electronic	11,623	10,581	10,673	10,808	10,133
Electrical Equipment	7,415	7,744	7,645	6,858	6,567
Electrical Equipment Manufacturing	4,399	4,935	4,971	4,708	4,525
Miscellaneous Manufacturing	12,308	12,070	11,157	11,225	11,200
Medical Equipment and Supplies Manufacturing	11,336	11,059	10,473	10,492	10,467
Other Durable Goods Manufacturing	7,646	8,185	7,693	7,685	7,341
Total – Durable Goods	49,634	49,776	48,066	46,492	44,850
<u>Non-Durable Goods</u>					
Food Manufacturing	13,628	13,244	13,050	12,667	12,433
Beverage and Tobacco Products Manufacturing	3,159	3,038	3,175	3,425	3,267
Apparel Manufacturing	8,988	8,522	8,873	8,400	7,250
Cut and Sew Apparel Manufacturing	8,969	8,518	8,846	8,183	6,933
Chemical Manufacturing	31,183	31,385	32,885	32,335	30,067
Pharmaceutical and Medicine Manufacturing	26,645	27,187	28,572	28,017	25,742
Plastics and Rubber Products	3,340	3,210	2,744	2,350	2,217
Plastics Product Manufacturing	3,030	2,917	2,266	2,158	2,083
Other Non-Durable Goods Manufacturing	8,823	9,261	8,529	7,200	5,724
Total – Non-Durable Goods	69,121	68,660	69,256	66,367	60,958
Total Manufacturing Employment	118,755	118,436	117,322	112,869	105,808

* Totals may not add due to rounding.

(1) Preliminary.

Source: Department of Labor and Human Resources, Current Employment Statistic Survey (Establishment Survey – NAICS Codes)

Total employment in the manufacturing sector decreased by 12,947 from fiscal year 2003 to fiscal year 2007. Manufacturing employment had been declining during the past decade, but the decline accelerated during fiscal years 2002 and 2003, falling -10.6% and -4.8%, respectively. After that, manufacturing employment seemed to stabilize around 118,000 jobs, but the deceleration reappeared in fiscal year 2006 with the sector experiencing another significant drop of -3.8%. For fiscal year 2007 the employment decline accelerated further to -6.2%. During the last year the economy has lost around 7,050 jobs in the manufacturing sector. There are several reasons which explain this sector's job shrinkage: the end of the phase-out of Section 936, the net loss of patents on certain pharmaceutical products, the escalation of manufacturing production costs (particularly labor and electricity), and the increased use of job outsourcing. Puerto Rico's manufacturing sector is facing increased international competition, and new ideas and initiatives are necessary to improve this sector.

Services

Puerto Rico has experienced significant growth in the services sector, which includes finance, insurance, real estate, wholesale and retail trade, tourism and other services, in terms of both income and employment over the past decade, showing a favorable trend as compared with certain other industrialized economies. During the period between fiscal years 2002 and 2006, the gross domestic product in this sector, in nominal terms, increased at an average annual rate of 4.5%, while payroll employment in this sector increased at an average annual rate of 2.5%. In the Puerto Rico labor market, self-employment, which is not accounted for in the Payroll Survey, represents approximately 17% of total employment according to the Household Survey. Most of the self-employment is concentrated in the service and construction sectors. For example, for fiscal year 2006, the number of self-employed individuals was 182,914, out of which 46.8% were in the services sector and 15.1% were in the construction sector. The development of the services sector has been positively affected by demand generated by other sectors of the economy, such as manufacturing, construction and agriculture. The services sector in Puerto Rico has a diversified base.

According to the Establishment Survey, for the first four months of fiscal year 2008 the net employment gain for this sector was 4,000 jobs, compared to same period in the previous year, for a net growth rate of 0.9%.

The high degree of knowledge, skills, and expertise in professional and technical services available in Puerto Rico places the island in a favorable competitive position with respect to Latin America and other trading countries throughout the world.

The services sector ranks second to manufacturing in its contribution to gross domestic product, and it is the sector with the greatest employment. In fiscal year 2006, services generated \$33.6 billion of gross domestic product, or 38.9% of the total. Services employment grew from 523,691 in fiscal year 2003 to 562,949 in fiscal year 2007 (representing 54.5% of total, non-farm, payroll employment). This represents a cumulative increase of 7.5% during such period. Wholesale and retail trade, finance, insurance and real estate experienced significant growth in fiscal years 2002 to 2006, as measured by gross domestic product. From fiscal year 2002 to 2006, gross domestic product increased in wholesale and retail trade from \$8.6 billion to \$10.7 billion, and in finance, insurance, and real estate from \$11.2 billion to \$14.7 billion. There are sixteen commercial banks and trust companies currently operating in Puerto Rico. Total assets of these institutions as of June 30, 2007 were \$111.0 billion. As of June 30, 2007, there were approximately thirty-five international banking entities operating in Puerto Rico licensed to conduct offshore banking transactions with total assets of \$79.4 billion.

The following tables set forth gross domestic product for fiscal years 2002 to 2006 and employment for the services sector for fiscal years 2002 to 2007.

**Commonwealth of Puerto Rico
Gross Domestic Product by Service Sector*
(in millions at current prices)**

	Fiscal Years Ended June 30,				
	2002	2003	2004	2005	2006 ⁽¹⁾
Wholesale and retail trade	\$ 8,623	\$ 9,150	\$ 9,802	\$ 10,260	\$10,716
Finance, insurance and real estate	11,212	12,508	13,029	14,016	14,733
Other services ⁽²⁾	7,078	7,261	7,646	8,023	8,164
Total	\$26,913	\$28,919	\$30,476	\$32,299	\$33,613

* Totals may not add due to rounding.

(1) Preliminary.

(2) Includes tourism.

Source: Planning Board.

**Commonwealth of Puerto Rico
Non-Farm Payroll Employment by Services Sector*
(thousands of persons age 16 and over)**

	Fiscal Years Ended June 30,					
	2002	2003	2004	2005	2006	2007 ⁽¹⁾
Wholesale Trade	32,200	32,181	33,299	33,710	33,992	33,158
Retail Trade	130,675	130,180	132,008	136,189	137,800	135,058
Transportation, Warehouse & Utilities	18,017	17,352	17,054	17,615	17,433	16,700
Trade, Transportation, Warehouse & Utilities	180,892	179,713	182,361	187,514	189,225	184,916
Information	22,483	21,619	21,907	22,598	22,600	21,733
Finance	44,975	44,648	46,852	48,621	49,767	49,975
Professional and Business	97,408	98,498	101,899	103,767	106,400	104,767
Educational & Health	86,400	92,409	98,101	99,963	103,583	105,842
Leisure & Hospitality	65,783	67,912	70,310	72,586	74,767	73,433
Other Services	16,992	18,808	20,671	21,257	21,267	22,283
Total	514,933	523,607	542,101	556,306	567,609	562,949

* Totals may not add due to rounding.

(1) Preliminary.

Source: Department of Labor and Human Resources, Benchmark on Employment, Hours and Earnings

Hotels and Related Services – Tourism

During fiscal year 2006, the number of persons registered in tourist hotels, including residents of Puerto Rico and tourists staying in more than one hotel during their visit, was 1,913,400, an increase of 3.4% over the number of persons registered during the same period in fiscal year 2005. The number of non-resident tourists registered in tourist hotels during fiscal year 2006 increased 4.6% compared to fiscal year 2005. Hotel rooms available during fiscal year 2006 increased 3.9% compared to fiscal year 2005. The average number of rooms rented in tourist hotels increased 3.9% during fiscal year 2006 compared to fiscal year 2005. The average occupancy rate in tourist hotels during fiscal years 2005 and 2006 was 70.8%.

During fiscal year 2007, the number of persons registered in tourist hotels, including residents of Puerto Rico and tourists staying in more than one hotel during their visit, was 1,798,300, a decrease of

6.5% over the number of persons registered during fiscal year 2006. The average occupancy rate in tourist hotels during fiscal year 2007 was 71.3%, compared to 70.1% in fiscal year 2006. The average number of rooms rented in tourist hotels decreased 5.0% during fiscal year 2007 compared with fiscal year 2006. The average number of rooms available in tourist hotels decreased 6.3% from fiscal year 2006 to fiscal year 2007 as the completion of regular maintenance and rehabilitation of rooms (that normally results in a certain number of rooms being unavailable at any time) took longer to complete than in the past.

San Juan is the largest homeport for cruise ships in the Caribbean and one of the largest homeports for cruise ships in the world.

The following table presents data relating to visitors to Puerto Rico and tourist expenditures for the five fiscal years ended June 30, 2006.

**Commonwealth of Puerto Rico
Tourism Data⁽¹⁾
Number of Visitors**

<u>Fiscal Years Ended June 30,</u>	<u>Tourist Hotels⁽²⁾</u>	<u>Cruise Ship</u>	<u>Other⁽³⁾</u>	<u>Total</u>	<u>Total Visitors' Expenditures (in millions)</u>
2002	1,147,800	1,277,000	1,939,300	4,364,100	\$2,486.4
2003	1,239,200	1,163,900	1,999,200	4,402,300	2,676.6
2004	1,307,000	1,348,200	2,234,000	4,889,200	3,024.0
2005	1,361,640	1,386,925	2,324,275	5,072,840	3,238.6
2006	1,424,200	1,300,100	2,297,800	5,022,100	3,369.3

- (1) Only includes information about non-resident tourists registering in tourist hotels. They are counted once even if registered in more than one hotel.
(2) Includes visitors in guesthouses.
(3) Includes visitors in homes of relatives, friends, and in hotel apartments.

Sources: Puerto Rico Tourism Company and the Planning Board

The Commonwealth, through the Convention Center District Authority, has completed the development of the largest convention center in the Caribbean, and the centerpiece of a 100-acre, private development, to include hotels, restaurants, cinemas, office space and housing. The convention center district is being developed at a total cost of \$1.3 billion to improve Puerto Rico's competitive position in the convention and group travel segments. The convention center opened on November 17, 2005.

The Convention Center District Authority also owns a multi-purpose coliseum located in San Juan, Puerto Rico. The coliseum, known as the Jose Miguel Agrelot Coliseum, was inaugurated in 2004 and has been host to various successful artistic and other events.

Government

The government sector of Puerto Rico plays an important role in the economy. In fiscal year 2006, the government accounted for \$8.4 billion of Puerto Rico's gross domestic product, or 9.7% of the total. The government is also a significant employer, providing jobs for 297,450 workers, or 28.8% of total, non-farm, payroll employment in fiscal year 2006. This total includes municipal employees. As of September 30, 2007, central government employment has been reduced by approximately 14,000 positions since September 2004.

On February 25, 1998, legislation was enacted permitting the unionization of employees of the central government (excluding municipal employees). Under this law, government employees are given collective bargaining rights subject to a number of limitations. Among those limitations are: employees

are prohibited from striking; salary increases are contingent on the availability of budgeted revenues; employees cannot be required to become union members and pay union dues; and collective bargaining negotiations cannot occur in an election year. During fiscal year 2006, the Commonwealth and its instrumentalities began to negotiate the economic and non-economic terms of at least forty collective bargaining agreements. The results of these negotiations could have a material impact on the General Fund.

Transportation

Thirty-four shipping lines offer regular ocean freight service to eighty United States and foreign ports. San Juan is the island's leading seaport, but there are also seaport facilities at other locations in Puerto Rico including Arecibo, Culebra, Fajardo, Guayama, Guayanilla, Mayagüez, Ponce, Vieques, and Yabucoa.

Luis Muñoz Marín International Airport is currently served by 25 United States and international airlines. At present, there is daily direct service between San Juan and Atlanta, Boston, Chicago, Dallas, Miami, New York, Philadelphia, and numerous other destinations within the United States. There is also regularly scheduled service between Aguadilla and Ponce and New York and between Puerto Rico and other Caribbean islands and certain Latin American and European cities. A major United States airline uses San Juan as a hub for its intra-Caribbean airline service. Several smaller airports serve intra-island traffic.

The island's major cities are connected by a modern highway system, which, as of December 31, 2006, totaled approximately 4,621 miles. The highway system comprises 391 miles of primary system highways, which are the more important interregional traffic routes and include PR-52, PR-22, PR-53 and PR-20 toll highways, 230 miles of primary urban system highways, 959 miles of secondary system highways serving the needs of intra-regional traffic and 3,041 miles of tertiary highways and roads serving local, intra-regional traffic.

The first phase of a new mass transit system, known as Tren Urbano, has been completed. Tren Urbano serves a portion of metropolitan San Juan and is expected eventually to serve the municipalities of Carolina and Caguas as well. It currently has ridership of about 33,000 per day.

The Port of the Americas Authority ("PAA") is responsible for the development and operation of the Port of the Americas, a deep draft port on the south coast of Puerto Rico. The first phase of the Port of the Americas was completed in fiscal year 2004. This initial phase included the improvement of piers 4, 5 and 6 of the Port and the acquisition of heavy equipment at a cost of \$40 million. During calendar year 2005, the PAA began the second phase of the Port, which phase is expected to be completed by the end of calendar year 2008. Completion of this second phase will provide capacity to handle up to 250,000 Twenty-Foot Equivalent Units ("TEU"). This second phase includes (i) dredging the entrance channel and adjacent areas of the Port to a depth of 50 feet; (ii) reconstructing the container terminals; (iii) commencing certain required environmental risk mitigation procedures; and (iv) preparing final construction schematics. With respect to these tasks, dredging is completed, the final design contract has been awarded, acquisition of environmental risk mitigation land is underway, and the contract for reconstruction of the container terminal was awarded in April 2006. The Port is expected to be capable of providing capacity for up to 700,000 TEUs when the third phase is completed.

As of September 30, 2007, PAA had an outstanding balance of \$94.6 million under various lines of credit from GDB. PAA is authorized to borrow up to \$250 million under these lines of credit. This debt is payable from annual legislative appropriations until the PAA starts generating revenues sufficient

to cover debt service and is also guaranteed by the Commonwealth. Partial operation of the Port of the Americas, at a capacity of up to 250,000 TEUs per year, could begin in early 2008.

Construction

Although the construction industry represents a relatively small segment of the economy compared to other sectors, it has made significant contributions to the growth of economic activity. During the period from fiscal year 2002 through fiscal year 2006, however, real construction investment decreased 1.1%. This decline was small compared to the high level of construction activity in prior fiscal years. The total value of construction permits increased 2.5% during the same five fiscal year period.

Public investment has been an important component of construction investment. During fiscal year 2006, approximately 42% of the total investment in construction was related to public projects. For fiscal year 2006 compared to fiscal year 2005, the total value of construction permits decreased 4.3% and total sales of cement, including imports, decreased 1.0%. Average payroll employment in the construction sector during fiscal year 2006 was 67,400, a decrease of 1.2% from fiscal year 2005, and it remained at that level for fiscal year 2007. Cement sales (including imports) continued their decline, falling 7.1% compared to fiscal year 2006 and 10.6% during the first four months of fiscal year 2008, compared to the same period in fiscal year 2007.

Total construction investment for fiscal year 2006 decreased (in real terms) by 5.8% (following a 7% real decline in fiscal year 2005) due principally to the drop in construction related public projects. For fiscal years 2007 and 2008, the Planning Board forecasts further construction investment decreases (in real terms) of 3.5% and 3.4%, respectively. Public investment will be primarily in housing, new schools (and school reconstruction programs), water projects, and other public infrastructure projects. Public investment in construction has been negatively affected by the Commonwealth's fiscal difficulties.

During the first three months of fiscal year 2008, the number of construction permits decreased 12.3% and the total value of construction permits increased 24.3% compared to the same period in fiscal year 2007.

Agriculture

The Department of Agriculture and related agencies have directed their efforts at increasing and improving local agricultural production, increasing efficiency and the quality of produce, and stimulating the consumption of locally produced agricultural products. During fiscal year 2006, gross income from agriculture was \$805.6 million, an increase of 1.5% compared with fiscal year 2005. Agriculture gross income consists of the total value of production in the principal agricultural sectors, which include traditional crops, livestock and poultry, grains, vegetables, fruits, ornamental plants and other products. During fiscal year 2006, starchy vegetables, coffee, poultry, fruits and ornamental plants contributed a higher percentage of the sector's income than in the previous fiscal year.

The Commonwealth supports agricultural activities through incentives, subsidies, and technical and support services, in addition to income tax exemptions for qualified income derived by bona fide farmers. Act No. 225 of 1995 provides a 90% income tax exemption for income derived from agricultural operations, an investment tax credit equal to 50% of the investment in qualified agricultural projects, and a 100% exemption from excise taxes, real and personal property taxes, municipal license taxes and tariff payments. It also provides full income tax exemption for interest income from bonds, notes and other debt instruments issued by financial institutions to provide financing to agricultural businesses. Subsequent legislation imposed an aggregate annual limit of \$15 million on the investment tax credits available under Act No. 225.

Policy changes have been implemented to promote employment and income generated by the agricultural sector. The policy initiatives include a restructuring of the Department of Agriculture, an increase in government purchases of local agricultural products, new programs geared towards increasing the production and sales of agricultural products, and a new system of agricultural credits and subsidies for new projects.

Higher Education

During the five decades from 1950 to 2000, Puerto Rico made significant advances in the field of education, particularly at the college and graduate school level. The transformation of Puerto Rico during the 1950s and 1960s from an agricultural economy to an industrial economy brought about an increased demand for educational services at all levels. During the 1970s and 1980s, certain higher wage, higher technology industries became more prominent in Puerto Rico. More recently, employment in the services sector has increased significantly. This has resulted in an increased demand for workers having a higher level of education and greater expertise in various technical fields. During the same time period, enrollments in institutions of higher learning rose very rapidly due to growth in the college-age population, and the increasing proportion of college attendance by such population. During the 1990s and into the current decade, college attendance and college attendance as a percentage of the college-age population continued to increase, and the college-age population has declined since 2000.

The following table presents comparative trend data for Puerto Rico and the United States with respect to college-age population and the percentage of such population attending institutions of higher learning.

Academic Year	Commonwealth of Puerto Rico			Mainland United States		
	Population	Higher	Percent ⁽¹⁾	Population	Higher	Percent ⁽¹⁾
	18-24 Years of Age	Education Enrollment		18-24 Years of Age	Education Enrollment	
1970	341,448 ⁽²⁾	57,340	16.8%	23,714,000 ⁽²⁾	8,580,887	36.2%
1980	397,839 ⁽²⁾	130,105	32.7%	30,022,000 ⁽²⁾	12,096,895	40.3%
1990	417,636 ⁽²⁾	156,147	37.4%	26,961,000 ⁽²⁾	13,621,000	50.5%
2000	428,892 ⁽²⁾	176,015	41.0%	27,143,455 ⁽²⁾	15,313,000	56.4%
2001	426,194 ⁽³⁾	185,015	43.4%	27,971,000 ⁽³⁾	15,928,000	56.9%
2002	423,852 ⁽³⁾	190,776	45.0%	28,463,000 ⁽³⁾	16,612,000	58.4%
2003	420,295 ⁽³⁾	199,842	47.5%	28,947,000 ⁽³⁾	16,900,000	58.4%
2004	416,020 ⁽³⁾	207,074	49.8%	29,245,000 ⁽³⁾	17,272,000	59.1%
2005	411,580 ⁽³⁾	208,032	50.5%	29,307,000 ⁽³⁾	17,428,000	59.5%

(1) Number of persons of all ages enrolled in institutions of higher education as percent of population 18-24 years of age.

(2) Based on census population as of April 1 of the stated year.

(3) Estimated population (reference date July 1 of the stated year).

Sources: United States Census Bureau (Mainland United States Population), United States National Center for Education Statistics, Planning Board (Puerto Rico Population) and Council on Higher Education of Puerto Rico

The University of Puerto Rico, the only public university in Puerto Rico, has eleven campuses located throughout the island. The University's total enrollment for academic year 2006-2007 was approximately 62,340 students. The Commonwealth is legally bound to appropriate annually for the University of Puerto Rico an amount equal to 9.60% of the average annual revenue from internal sources for each of the two fiscal years immediately preceding the current fiscal year.

In addition to the University of Puerto Rico, there are 40 public and private institutions of higher education located in Puerto Rico. Such institutions had an enrollment during academic year 2005-2006 of approximately 145,574 students and provide programs of study in liberal arts, education, business, natural sciences, technology, secretarial and computer sciences, nursing, medicine, and law. Degrees are offered by these institutions at the associate, bachelor, master, and doctoral levels.

Enrollment at other postsecondary education programs, including technical and vocational programs, amounted to an additional 33,629 students at approximately 76 institutions. This figure represents enrollment at federal Title IV eligible, non-degree granting institutions reporting data to the National Center for Education Statistics (Integrated Postsecondary Education Data System).

Institutions providing education in Puerto Rico must satisfy state licensing requirements to operate. Also, the vast majority of educational institutions are accredited by USDE-recognized accrediting entities.

Tax Incentives

One factor that has promoted and continues to promote the development of the manufacturing sector in Puerto Rico is the various local and federal tax incentives available, particularly those under Puerto Rico's Industrial Incentives Program and, until recently, Sections 30A and 936 of the U.S. Code. Tax and other incentives have also been established to promote the development of the tourism industry. These incentives are summarized below.

Industrial Incentives Program

Since 1948, Puerto Rico has had various industrial incentives laws designed to stimulate industrial investment in the island. Under these laws, which are designed to promote investment in Puerto Rico, companies engaged in manufacturing and certain other designated activities were eligible to receive full or partial exemption from income, property, and other local taxes. The most recent of these industrial incentives laws is the 1998 Tax Incentives Act.

The benefits provided by the 1998 Tax Incentives Act are available to new companies as well as companies currently conducting tax-exempt operations in Puerto Rico that choose to renegotiate their existing tax exemption grant, expand current operations or commence operating a new eligible business. The activities eligible for tax exemption include manufacturing, certain designated services performed for markets outside Puerto Rico (including the United States), the production of energy from local renewable sources for consumption in Puerto Rico and laboratories for research and development. Companies qualifying thereunder can benefit from income tax rates ranging from 2% to 7% for periods ranging from 10 to 25 years. In addition, the 1998 Tax Incentives Act grants 90% exemption from property taxes, 100% exemption from municipal license taxes during the first three semesters of operations and between 60% and 80% thereafter, and 100% exemption from excise taxes with respect to the acquisition of raw materials and certain machinery and equipment used in the exempt activities. The 1998 Tax Incentives Act also provides various special deductions designed to stimulate employment and productivity, research and development and capital investment in Puerto Rico.

Under the 1998 Tax Incentives Act, companies can repatriate or distribute their profits free of Puerto Rico dividend taxes. In addition, passive income derived from the investment of eligible funds in Puerto Rico financial institutions, obligations of the Commonwealth, and other designated investments are fully exempt from income and municipal license taxes. Individual shareholders of an exempted business are allowed a credit against their Puerto Rico income taxes up to 30% of their proportionate

share of the exempted business's income tax liability. Gain from the sale or exchange of shares of an exempted business by its shareholders during the exemption period is subject to a 4% income tax rate.

Under the 1998 Tax Incentives Act, core pioneer industries that employ innovative technologies in their operations, including high technology industries with activities that produce a significant economic impact, can be eligible for income tax rates below 2%. Eligible manufacturing industries may also qualify for certain payroll and training deductions, building and construction expense deductions, a 25% credit for purchases of products manufactured in Puerto Rico, and a 35% credit for purchases of locally recycled products and products manufactured with locally recycled materials.

The 1998 Tax Incentives Act also provides investors who acquire an exempted business that is in the process of closing its operations in Puerto Rico a 50% credit in connection with the cash purchase of such corporation's stocks or assets. Also, exempted businesses that produce high technology products may be eligible for a credit equal to the amount in excess of \$100 million of the annual taxes retained on the payment of rights, rents, royalties and licenses related to the production of such goods. Finally, call centers servicing markets outside Puerto Rico are exempt from paying excise taxes on the purchase of equipment needed for the operation of such call centers.

Tourism Incentives Program

For many years, Puerto Rico has also had incentives laws designed to stimulate investment in hotel operations on the island. The most recent of these laws, the Tourism Incentives Act of 1993 (the "Tourism Incentives Act"), provides partial exemptions from income, property, and municipal license taxes for a period of up to ten years. The Tourism Incentives Act also provides certain tax credits for qualifying investments in tourism activities, including hotel and condo-hotel development projects. Recently enacted legislation provides further tourism incentives by granting certain tax exemptions on interest income received from permanent or interim financing of tourism development projects and fees derived from credit enhancements provided to the financing of such projects. See "Government Development Bank for Puerto Rico – Tourism Development Fund" under *Public Corporations*.

As part of the incentives to promote the tourism industry, the Commonwealth established the Tourism Development Fund as a subsidiary of GDB with the authority to (i) make investments in or provide financing to entities that contribute to the development of the tourism industry and (ii) provide financial guarantees and direct loans for financing hotel development projects. To date, the Fund has provided direct loans and financial guarantees for loans made or bonds issued to finance the development of seventeen hotel projects representing over 3,900 new hotel rooms.

Incentives under the U.S. Code

United States corporations operating in Puerto Rico have been subject to special tax provisions since the Revenue Act of 1921. Prior to enactment of the Tax Reform Act of 1976, under Section 931 of the U.S. Code, United States corporations operating in Puerto Rico (and meeting certain source of income tests) were taxed only on income arising from sources within the United States.

The Tax Reform Act of 1976 created Section 936 of the U.S. Code, which revised the tax treatment of United States corporations operating in Puerto Rico by taxing such corporations on their worldwide income in a manner similar to that applicable to any other United States corporation but providing such corporations a full credit for the federal tax on their business and qualified investment income in Puerto Rico. The credit provided an effective 100% federal tax exemption for operating and qualifying investment income from Puerto Rico sources.

As a result of amendments to Section 936 of the U.S. Code made in 1996 (the “1996 Amendments”), its income tax credit based on operating and certain investment income was phased out over a ten-year period for companies that were operating in Puerto Rico in 1995, and is no longer available.

Controlled Foreign Corporations

Because of the modification and phase out of the federal tax incentives under Section 936 of the U.S. Code, many corporations previously operating thereunder reorganized their operations in Puerto Rico to become controlled foreign corporations (“CFCs”). A CFC is a corporation that is organized outside the United States and is controlled by United States shareholders. In general, a CFC may defer the payment of federal income taxes on its trade or business income until such income is repatriated to the United States in the form of dividends or through investments in certain United States properties. The Puerto Rico Office of Industrial Tax Exemption has received notification from numerous corporations that have converted part or all of their operations to CFCs. These include most of the major pharmaceutical, instrument and electronics manufacturing companies in Puerto Rico.

CFCs operate under transfer pricing rules for intangible income that are different from those applicable to United States corporations operating under Section 936 of the U.S. Code (“Section 936 Corporations”). In many cases, they are allowed to attribute a larger share of this income to their Puerto Rico operation but must make a royalty payment “commensurate with income” to their U.S. affiliates. Section 936 Corporations were exempted from Puerto Rico withholding taxes on any cost sharing payments they might have opted to make, but CFCs are subject to a fifteen percent Puerto Rico withholding tax on royalty payments.

Recently, the United States Congress approved legislation that would extend the benefit of Section 199 of the U.S. Code to production activities that take place in Puerto Rico. Section 199 provides a three-point reduction in the federal income tax rate, phased in over five years (from 35% to 31.85% after 2009). This extension applies to the U.S. branch activities located on the island and are not controlled foreign corporations.

DEBT

Public Sector Debt

Public sector debt comprises bonds and notes of the Commonwealth, its municipalities, and public corporations (“notes” as used in this section refers to certain types of non-bonded debt regardless of maturity), subject to the exclusions described below.

Section 2 of Article VI of the Constitution of the Commonwealth provides that direct obligations of the Commonwealth evidenced by full faith and credit bonds or notes shall not be issued if the amount of the principal of and interest on such bonds and notes and on all such bonds and notes theretofore issued which is payable in any fiscal year, together with any amount paid by the Commonwealth in the fiscal year preceding the fiscal year of such proposed issuance on account of bonds or notes guaranteed by the Commonwealth, exceeds 15% of the average annual revenues raised under the provisions of Commonwealth legislation and deposited into the Treasury (hereinafter “internal revenues”) in the two fiscal years preceding the fiscal year of such proposed issuance. Section 2 of Article VI does not limit the amount of debt that the Commonwealth may guarantee so long as the 15% limitation is not exceeded through payments by the Commonwealth on such guaranteed debt. Internal revenues consist principally of income taxes, property taxes and excise taxes. Certain revenues, such as federal excise taxes on offshore shipments of alcoholic beverages and tobacco products and customs duties, which are collected

by the United States Government and returned to the Treasury and motor vehicle fuel taxes and license fees, which are allocated to the Highway and Transportation Authority, are not included as internal revenues for the purpose of calculating the debt limit, although they may be available for the payment of debt service. In addition, the portion of the Sales Tax (as defined under “Tax Reform” under *Puerto Rico Taxes, Other Revenues, and Expenditures* below) allocated to the Puerto Rico Sales Tax Financing Corporation is also not included as internal revenues consistent with the legislation creating the Sales Tax Financing Corporation, which legislation provides that such portion is not “available resources” under the Constitutional provisions relating to the Bonds.

All or a portion of the proceeds of certain refunding bonds issued by the Commonwealth were invested in guaranteed investment contracts or federal agency securities (in each case rated in the highest category by Moody’s and S&P, none of which is eligible to be used for a legal defeasance under Puerto Rico law (“non-eligible investments”). Since bonds refunded with proceeds of non-eligible investments are not legally defeased, such bonds are treated as outstanding for purposes of the 15% debt limitation.

Future maximum annual debt service for the Commonwealth’s outstanding general obligation debt is \$768,843,250 in the fiscal year ending June 30, 2020 (based on the assumption that the Public Improvement Refunding Bonds, Series 2004 A, which are variable rate bonds, bear interest at their actual rate per annum through July 1, 2012 and thereafter at 12% per annum, and the Public Improvement Refunding Bonds, Series 2004 B and a portion of the Public Improvement Bonds of 2006, Series A, each of which are also variable rate bonds, bear interest at 12% per annum). This amount (\$768,843,250) is equal to 9.21% of \$8,346,104,000, which is the average of the adjusted internal revenues for the fiscal years ended June 30, 2005 and June 30, 2006. If bonds refunded with non-eligible investments described in the preceding paragraph were treated as not being outstanding, and the interest on the Public Improvement Refunding Bonds, Series 2004 B and the above portion of the Public Improvement Bonds of 2006, Series A, was calculated using the effective fixed interest rate payable by the Commonwealth under the interest rate exchange agreements entered into in respect thereof, the percentage referred to in the preceding sentence would be 8.19% and future maximum annual debt service for the Commonwealth’s outstanding general obligation debt would be \$680,742,340 in the fiscal year ending June 30, 2020. Annual debt service payments on the PRASA guaranteed bonds have been paid by PRASA since fiscal year 2006 and, thus, such payments are not now included now in the calculation of the 15% debt limitation. In the event PRASA is unable to make any portion of the future debt service payments on its guaranteed bonds, the Commonwealth would be required to make such payments under its guarantee from the General Fund, and such debt service would be included in the calculation of the 15% debt limitation.

The Commonwealth’s policy has been and continues to be to maintain the amount of such debt prudently below the constitutional limitation. Debt of municipalities, other than bond anticipation notes, is supported by real and personal property taxes and municipal license taxes. Debt of public corporations, other than bond anticipation notes, is generally supported by the revenues of such corporations from rates charged for services or products. See *Public Corporations*. However, certain debt of public corporations is supported, in whole or in part, directly or indirectly, by Commonwealth appropriations or taxes.

Direct debt of the Commonwealth is issued pursuant to specific legislation approved in each particular case. Debt of the municipalities is issued pursuant to ordinances adopted by the respective municipal assemblies. Debt of public corporations is issued in accordance with their enabling statutes. GDB, as fiscal agent of the Commonwealth and its municipalities and public corporations, must approve the specific terms of each issuance.

The following table presents a summary of public sector debt as of September 30, 2007. Excluded from the table is debt not primarily payable from either Commonwealth or municipal taxes,

Commonwealth appropriations or rates charged by public corporations for services or products, some of which debt is set forth in footnote 4 below. Also excluded from the table is debt the inclusion of which would reflect double counting including, but not limited to, \$1.46 billion of outstanding bonds (as of September 30, 2007) issued by the Municipal Finance Agency to finance its purchase of bonds of Puerto Rico municipalities, and \$2.6 billion of obligations of the Public Finance Corporation issued to purchase certain Commonwealth public sector debt.

**Commonwealth of Puerto Rico
Public Sector Debt
(in thousands)**

	September 30, 2007
Puerto Rico direct debt ⁽¹⁾	\$9,960,950
Municipal debt	2,364,641
Public corporations debt	
Puerto Rico guaranteed debt ⁽²⁾	809,533
Debt supported by Puerto Rico appropriations or taxes ⁽⁵⁾	15,491,653
Other non-guaranteed debt ⁽⁴⁾	15,744,818
Total public corporations debt	32,046,004
Total public sector debt	\$44,371,595

- (1) Includes general obligation bonds, tax and revenue anticipation notes, and lines of credit provided by GDB. Excludes certain Commonwealth general obligation bonds in the principal amount of \$1.1 billion that have been refunded with proceeds that were invested in guaranteed investment contracts or other securities not eligible to effect a legal defeasance, even though such bonds will be considered outstanding under their respective authorizing resolutions and for purposes of calculating the Commonwealth's constitutional debt limitation.
- (2) Consists of \$470 million of bonds issued by Aqueduct and Sewer Authority, \$244.8 million of State Revolving Fund Loans incurred under various federal water laws, and \$94.6 million of bonds issued by Port of the Americas Authority. Excludes Public Buildings Authority bonds in the principal amount of \$2.76 billion and \$267 million of GDB bonds payable from available moneys of GDB.
- (3) Represents, among others, bonds and notes issued by Aqueduct and Sewer Authority, Highway and Transportation Authority, Housing Finance Authority, Infrastructure Financing Authority, Public Buildings Authority and Public Finance Corporation.
- (4) Excludes the following: \$1.9 billion of Infrastructure Financing Authority bonds, which are payable solely from the investment income of funds on deposit in the Infrastructure Development Fund consisting of proceeds from the sale of a controlling interest in Puerto Rico Telephone Company; \$1.2 billion of Children's Trust bonds which are payable solely from the payments to be received pursuant to the tobacco litigation settlement; \$619.1 million of Housing Finance Authority bonds, which are payable from Puerto Rico Housing Administration's annual allocation of Public Housing Capital Funds from the United States Department of Housing and Urban Development; \$153 million of Special Facilities Revenue Bonds issued by the Highway and Transportation Authority, which are payable from net toll revenues collected from the Teodoro Moscoso Bridge; \$155 million of Special Facilities Bonds issued by the Ports Authority, which are solely payable from the pledge of certain payments made by a private corporation under a special facilities agreement; \$82.7 million of Educational Facilities Revenue Bonds, 2000 Series A (University Plaza Project) issued by the Industrial, Tourist, Educational, Medical and Environmental Control Facilities Financing Authority, which are payable from rent payments made by the University of Puerto Rico; and approximately \$111 million of bonds issued by the Industrial, Tourist, Educational, Medical and Environmental Control Facilities Financing Authority to finance the construction of various government infrastructure projects, which are payable from rent payments made by various government entities. The bonds listed in this footnote are subsequently collectively referred to as the "Excluded Bonds." If the principal amounts of the Excluded Bonds were included in the above table, total public corporations' debt would be \$30,128,755,000 and total public sector debt would be \$45,870,694,000.

Source: Government Development Bank for Puerto Rico

No deductions have been made in the table above for debt service funds and debt service reserve funds. The table above and the amounts shown throughout this section as representing outstanding debt include outstanding capital appreciation bonds at their respective original principal amounts and do not include any accretion thereon.

Debt Service Requirements for Commonwealth General Obligation Bonds

The following table presents the debt service requirements for Commonwealth general obligation bonds outstanding as of May 31, 2007.

The table excludes debt service on \$1.08 billion of general obligation bonds refunded with refunding bonds the proceeds of which, pending the redemption of the refunded bonds, were invested in

guaranteed investment contracts or other securities not eligible to effect a legal defeasance. Such refunded bonds will be considered to be outstanding under their respective authorizing resolutions and for purposes of calculating the Commonwealth's constitutional debt limitation described above. In addition, in respect of certain variable rate, general obligation bonds as to which the Commonwealth has entered into interest rate exchange agreements, the interest in the table is calculated by using the respective fixed rates of interest that the Commonwealth is paying under said agreements. Debt service requirements for each fiscal year, as shown in the following table, include principal and interest due on July 1 immediately following the close of such fiscal year.

Puerto Rico Debt Service Requirements*
(in thousands)

Fiscal Year Ending June 30	Outstanding Bonds		Total Debt Service⁽¹⁾
	Principal	Interest	
2008	210,367	432,419	642,786
2009	261,645	388,748	650,393
2010	276,720	373,802	650,522
2011	289,322	358,762	648,085
2012	310,255	337,670	647,925
2013	329,180	318,754	647,934
2014	328,358	321,620	649,978
2015	343,665	306,188	649,853
2016	360,585	289,631	650,216
2017	377,162	272,669	649,830
2018	395,220	254,996	650,216
2019	429,936	220,638	650,574
2020	489,305	191,437	680,742
2021	361,255	167,292	528,547
2022	287,855	150,541	438,396
2023	257,220	137,383	394,603
2024	245,635	125,685	371,320
2025	256,585	114,826	371,411
2026	258,780	103,804	362,584
2027	270,185	92,013	362,198
2028	282,090	79,751	361,841
2029	294,615	66,758	361,373
2030	308,115	52,474	360,589
2031	321,825	37,953	359,778
2032	157,515	22,638	180,153
2033	131,585	15,040	146,625
2034	99,205	8,409	107,614
2035	68,965	3,448	72,413
	<u>\$8,003,148</u>	<u>\$5,245,349</u>	<u>\$13,248,498</u>

* Totals may not add due to rounding. Excludes the debt service on certain economically (but not legally) defeased, general obligation bonds and includes the effective fixed rate on certain variable rate, general obligation bonds as to which the Commonwealth has entered into interest rate exchange agreements.

(1) Since fiscal year 1997, the Commonwealth had been paying approximately \$30 million annual debt service on PRASA bonds and other obligations guaranteed by the Commonwealth. Beginning with the debt service payment due January 1, 2006, the Commonwealth stopped making such payments, and PRASA resumed making all payments due on and after such date from its net revenues. In the event PRASA is unable to make any portion of the future debt service payments on its guaranteed bonds, the Commonwealth would once more be required to make such payments under its guarantee from the General Fund. See “Other Public Corporations – Aqueduct and Sewer Authority” under *Public Corporations* below.

Sources: Government Development Bank for Puerto Rico and Department of the Treasury

Ratings of Commonwealth General Obligation Bonds

On May 22, 2007, Moody's Investors Service ("Moody's") confirmed its "Baa3" and "Ba1" rating on the Commonwealth's general obligation debt and its appropriation debt, respectively, and its negative ratings outlook thereon.

On May 22, 2007, Standard & Poor's Rating Services, a division of The McGraw-Hill Companies, Inc. ("S&P"), lowered its rating on the Commonwealth's general obligation debt to "BBB-", changed its negative ratings outlook thereon to stable, and confirmed its "BBB-" rating on the Commonwealth's appropriation debt.

Commonwealth Guaranteed Debt

As of September 30, 2007, \$2.76 billion of Commonwealth guaranteed bonds of the Public Buildings Authority were outstanding. Maximum annual debt service on these bonds is \$219.5 million in fiscal year ending June 30, 2011, with their final maturity being July 1, 2036. No payments under the Commonwealth guaranty have been required to date for these bonds.

As of September 30, 2007, \$267 million of Commonwealth guaranteed bonds of GDB were outstanding. No payments under the Commonwealth guaranty have been required for these bonds.

As of September 30, 2007, GDB held approximately \$94.6 million of the Port of the Americas Authority's outstanding bonds, which are guaranteed by the Commonwealth. The Authority is authorized to issue and GDB is authorized to purchase its bonds guaranteed by the Commonwealth in a maximum aggregate principal amount of \$250 million. The proceeds from these bonds will be used to continue the development of the Port of the Americas. No payments under the Commonwealth guaranty have been required for these bonds.

As of September 30, 2007, the aggregate outstanding principal amount of obligations of PRASA guaranteed by the Commonwealth was \$714.8 million. This amount consisted of \$262.8 million in revenue bonds sold to the public, \$207.2 million in bonds issued to the United States Department of Agriculture, Rural Development, and \$244.8 million of loans by the State Revolving (Clean Water and Safe Drinking Water Act) Funds for the benefit of PRASA. From January 1997 through fiscal year 2005, the Commonwealth made debt service payments under its guaranty. Beginning with the debt service payment due January 1, 2006, the Commonwealth stopped making guarantee payments on these obligations. PRASA has resumed making payment on this debt. In the event PRASA is unable to make any portion of the future debt service payments on its guaranteed obligations, the Commonwealth would be required once more to make such payments from the General Fund under its guarantee. See "Other Public Corporations – Aqueduct and Sewer Authority" under *Public Corporations* below.

Trends of Public Sector Debt

The following table shows the growth rate of short-term and long-term public sector debt and the growth rate of Gross National Product (in current dollars) for the five fiscal years ended June 30, 2007 and the first three months of fiscal year 2008. As of September 30, 2007, outstanding short-term debt, relative to total debt, was 10.3%.

Commonwealth of Puerto Rico
Public Sector Debt and Gross National Product
(dollars in millions)*

June 30,	Public Sector Debt					Gross National Product ⁽¹⁾	
	Long Term ⁽²⁾	Short Term ⁽³⁾	Short Term as % of Total	Total	Rate of Increase	Amount	Rate of Increase
2003	\$28,102	\$1,605 ⁽⁴⁾	5.4%	\$29,707	6.1%	\$47,479	5.3%
2004	31,767	2,175 ⁽⁴⁾	6.4	33,942	14.3	50,709	6.8
2005	34,789	1,914 ⁽⁴⁾	5.2	36,703	8.1	53,601	5.7
2006	37,313	2,620 ⁽⁴⁾⁽⁵⁾	6.6	39,933	8.8	56,689	5.8
2007	39,492	3,326	7.8	42,818	7.2	N/A	N/A
September 30, 2007	39,810	4,561	10.3	44,371	3.6		

* Totals may not add due to rounding.

(1) In current dollars.

(2) Does not include the Excluded Bonds identified in footnote 4 of the table above entitled "Commonwealth of Puerto Rico – Public Sector Debt," which would have been issued and outstanding at the time, all of which would be considered long-term debt.

(3) Obligations (other than bonds) issued with an original maturity of three years or less and lines of credit with a remaining maturity of three years or less are considered short-term debt.

(4) Does not include the tax and revenue anticipation notes that were outstanding at the close of the indicated fiscal years because prior to the end of said fiscal years sufficient funds had been set aside for the payment of such notes in full.

(5) Includes a \$368 million line of credit from GDB to the Secretary of the Treasury, the proceeds of which were applied to pay debt service on general obligation bonds.

Source: Government Development Bank for Puerto Rico

The following table shows the trend of public sector debt by major category for the five fiscal years ended June 30, 2007 and the first three months of fiscal year 2008.

Commonwealth of Puerto Rico
Public Sector Debt by Major Category
(dollars in millions)*

June 30,	Commonwealth			Municipalities			Public Corporation ⁽¹⁾			Total		
	Long Term	Short Term ⁽²⁾	Total	Long Term	Short Term ⁽²⁾	Total	Long Term	Short Term ⁽²⁾	Total	Long Term	Short Term ⁽²⁾	Total
2003.....	\$6,709	\$177 ⁽³⁾	\$6,886	\$1,754	\$201	\$1,955	\$19,639	\$1,227	\$20,866	\$28,102	\$1,605	\$29,707
2004.....	7,758	761 ⁽³⁾	8,519	1,820	226	2,046	22,190	1,187	23,377	31,767	2,175	33,942
2005.....	8,761	257 ⁽³⁾	9,018	1,927	254	2,181	24,101	1,403	25,504	34,789	1,914	36,703
2006.....	9,841	552 ⁽³⁾⁽⁴⁾	10,393	2,037	293	2,330	25,435	1,775	27,210	37,313	2,620	39,933
2007.....	10,335	224	10,559	2,164	299	2,463	26,993	2,803	29,796	39,492	3,326	42,818
September 30, 2007....	8,651	1,310	9,961	2,084	280	2,364	29,075	2,971	32,046	39,810	4,561	44,371

* Totals may not add due to rounding.

(1) Includes Commonwealth guaranteed debt; does not include the Excluded Bonds.

(2) Obligations (other than bonds) issued with an original maturity of three years or less and lines of credit with a remaining maturity of three years or less are considered short-term debt.

(3) Does not include the tax and revenue anticipation notes which were outstanding at the close of the indicated fiscal years because prior to the end of said fiscal years sufficient funds had been set aside for the payment of such notes in full.

(4) Includes a \$368 million line of credit from GDB to the Secretary of the Treasury, the proceeds of which were applied to pay debt service on general obligation bonds.

Source: Government Development Bank for Puerto Rico

PUBLIC CORPORATIONS

In Puerto Rico, many governmental and quasi-governmental functions are performed by public corporations created by the Legislative Assembly with varying degrees of independence from the central government to perform generally a single function or a limited number of related functions. Most public corporations obtain revenues from rates charged for services or products, but many are subsidized to some extent by the central government. Most public corporations are governed by boards whose members are appointed by the Governor with the advice and consent of the Senate, but some public corporations are attached to departments of the central government. Capital improvements of most of the larger public corporations are financed by revenue bonds issued under trust agreements or bond resolutions, or notes issued under loan agreements. The following table presents the outstanding bonds and notes of certain of the public corporations as of September 30, 2007 (“notes” as used in this section refers primarily to certain types of non-bonded debt regardless of maturity). Debt of certain other public corporations is excluded from this table because such debt is payable primarily from funds or grants provided by the federal government, is payable from sources other than Commonwealth appropriations or taxes or revenues of public corporations, or is payable from revenues derived from private sector services or products, such as industrial development bonds. Also excluded from this table is debt of certain public corporations the inclusion of which would reflect double counting. No deductions have been made in the table for debt service funds and debt service reserve funds. More detailed information about the major public corporations is presented in the following sections.

Commonwealth of Puerto Rico
Outstanding Debt of Public Corporations
September 30, 2007
(in thousands)

	Bonds			Notes			Total Bonds and Notes		
	With Guaranty	Without Guaranty	Total	With Guaranty	Without Guaranty	Total	With Guaranty	Without Guaranty	Total
Aqueduct and Sewer Authority	\$ 470,044	\$ -	\$ 470,044	\$ 244,843	\$ 1,218,762	\$ 1,463,605	\$ 714,887	\$ 1,218,762	\$ 1,933,649
Convention Center District Authority	-	465,800	465,800	-	155,221	155,221	-	621,021	621,021
Electric Power Authority	-	5,498,238	5,498,238	-	1,018,738	1,018,738	-	6,516,976	6,516,976
Highway and Transportation Authority	-	6,428,074 ⁽¹⁾	6,428,074	-	210,000	210,000	-	6,638,074	6,638,074
Housing Finance Authority ⁽²⁾	-	512,572	512,572	-	48,434	48,434	-	561,006	561,006
Industrial Development Company	-	263,744	263,744	-	86,710	86,710	-	350,454	350,454
Infrastructure Financing Authority	-	1,876,578 ⁽³⁾	1,876,578	-	55,037	55,037	-	1,931,615	1,931,615
Public Buildings Authority	2,754,575	-	2,754,575	-	224,630	224,630	2,754,575	224,630	2,979,205
Public Finance Corporation	-	2,843,664 ⁽⁴⁾	2,843,664	-	103,936	103,936	-	2,947,600	2,947,600
Port of the Americas Authority	94,646	-	94,646	-	-	-	94,646	-	94,646
Ports Authority	-	61,315 ⁽⁵⁾	61,315	-	594,966	594,966	-	656,281	656,281
P.R. Sales Taxes Financing Corp. (COFINA)	-	4,000,705	4,000,705	-	-	-	-	4,000,705	4,000,705
University of Puerto Rico	-	604,758 ⁽⁶⁾	604,758	-	25,291	25,291	-	630,049	630,049
Others	-	-	-	-	2,184,723	2,184,723	-	2,184,723	2,184,723
Total⁽⁷⁾	\$ 3,319,265	\$22,555,448	\$25,874,713	\$ 244,843	\$ 5,926,448	\$ 6,171,291	\$ 3,564,108	\$28,481,896	\$32,046,004

- (1) Excludes \$153 million of Special Facilities Revenue Bonds issued by the Highway and Transportation Authority, which are payable from net toll revenues collected from the Teodoro Moscoso Bridge.
- (2) Excludes the \$619.1 million of Housing Finance Authority bonds, which are payable solely from Puerto Rico Public Housing Administration's annual allocation of Public Housing Capital Funds from the United States Department of Housing and Urban Development.
- (3) Excludes \$1 billion of outstanding bonds of Infrastructure Financing Authority, which bonds are payable solely from the investment income of funds on deposit in the Infrastructure Development Fund consisting of proceeds from the sale of a controlling interest in Puerto Rico Telephone Company.
- (4) Payable primarily from Commonwealth appropriations.
- (5) Excludes \$155 million of Special Facilities Bonds issued by the Ports Authority, which bonds are payable solely from by the pledge of certain payments made by a private corporation under a special facilities agreement.
- (6) Excludes \$81.2 million of Educational Facilities Revenue Bonds, 2000 Series A (University Plaza Project) issued by the Industrial, Tourist, Educational, Medical and Environmental Control Facilities Financing Authority, which bonds are payable from rent payments made by the University of Puerto Rico.
- (7) Excludes accretion of interest from the respective issuance dates on capital appreciation bonds. Also excludes \$1.2 billion original principal amount of Children's Trust Tobacco Settlement Asset-Backed Bonds, Series 2002, which bonds will be repaid from payments made by certain tobacco companies under a master settlement agreement. See "Other Public Corporations" below.

Source: Government Development Bank for Puerto Rico

Government Development Bank for Puerto Rico

The principal functions of GDB are to act as financial advisor to and fiscal agent for the Commonwealth, its municipalities and public corporations in connection with the issuance of bonds and notes, to make loans and advances to public corporations and municipalities, and to make loans to private enterprises to aid in the economic development of Puerto Rico.

As of September 30, 2007, just under \$2 billion of bonds and notes of GDB (excluding its subsidiaries) were outstanding, consisting of \$267 million in Commonwealth guaranteed bonds and \$1.7 billion of medium term senior notes. Act No. 12 of May 9, 1975, as amended, provides that the payment of principal of and interest on specified notes and other obligations of GDB, not exceeding \$550 million, may be guaranteed by the Commonwealth, of which \$267 million were outstanding as of September 30, 2007. As of said date, GDB also had \$4.4 billion in loans outstanding to the central government of the Commonwealth and its public corporations and municipalities.

Act No. 82 of June 16, 2002 (“Act No. 82”) amended GDB’s Charter to authorize GDB to transfer annually to the General Fund, beginning with fiscal year 2001, up to 10% of its audited net income or \$10,000,000, whichever is greater. GDB is not required by Act No. 82 to transfer any funds. GDB made payments to the General Fund of \$11.6 million for fiscal year 2003 and \$18.4 million for fiscal year 2004. GDB did not make a payment to the General Fund under Act No. 82 for fiscal years 2005, 2006 and 2007 and does not expect to make a payment for fiscal year 2008.

Under Act No. 271 of November 21, 2002, GDB made a required special capital contribution to the Special Communities Perpetual Trust (the “Trust”) of \$500 million and provided the Trust with a \$500 million, non-revolving, line of credit. The amounts transferred to the Trust were deposited in two investment accounts held by GDB for the benefit of the Trust. As of September 30, 2007, the Trust had repaid \$114.9 million of its line of credit and had an outstanding balance of \$385.1 million. The line of credit is payable from legislative appropriations.

GDB has several subsidiaries which perform various functions. The principal subsidiaries and their functions are listed below:

Housing Finance Authority. Housing Finance Authority (formerly known as Housing Finance Corporation) was created to provide needed rental housing units and stimulate the construction industry under federally subsidized programs. Effective February 8, 2002, Housing Finance Corporation became the Housing Finance Authority and the Housing Bank and Finance Agency was dissolved and its powers transferred to the Housing Finance Authority. Housing Finance Authority provides financing for rental housing units, stimulates the construction industry under federally subsidized programs and provides interim financing for low-income housing projects and single-family homeownership programs. It is also engaged in insuring and servicing mortgages originated by the former Housing Bank and Finance Agency. As of September 30, 2007, Housing Finance Authority’s total outstanding loans to the private sector for development of housing projects targeted to low-and moderate income families were \$104.7 million. The Authority’s mortgage loans to low and moderate income homeowners represented an additional \$70.0 million as of the same date.

Housing Finance Authority has outstanding tax-exempt revenue bonds and notes that were issued to finance the construction of housing units approved for federal rental subsidies and to finance home ownership of single family housing units. Such bonds and notes are generally limited obligations of Housing Finance Authority payable solely from revenues collected from such housing units, with certain exceptions. As of September 30, 2007, \$1.102 billion of Housing Finance Authority bonds were outstanding.

As of September 30, 2007, the Authority also had outstanding \$493.8 million of bonds and notes issued to fund certain payments of the Commonwealth under its mortgage subsidy and other programs for low and moderate income families, and to guarantee certain insurance obligations of the former Housing Bank and Finance Agency.

As of September 30, 2007, the Authority had total notes and bonds outstanding of \$1.221 billion (including \$48.4 million of debt outstanding under GDB lines of credit and \$7.8 million with other banks) and total unrestricted net assets of \$709.6 million.

Tourism Development Fund. The Tourism Development Fund promotes Puerto Rico's hotel and tourism industry by making available direct loans and guarantees to secure the private financing for new hotel development projects. The Tourism Development Fund is also authorized to make capital investments in tourism related projects. As of September 30, 2007, the Tourism Development Fund had outstanding direct loans in an aggregate principal amount of \$246.0 million and guarantees issued in the outstanding amount of \$128.4 million to finance several hotels and tourism-related projects.

The Tourism Development Fund has made payments under its guarantees and letters of credit in the aggregate amount of approximately \$313.4 million with respect to several projects, including \$282 million disbursed to pay in full the bonds issued to finance three projects, which bonds had been declared due and payable at the direction of the Tourism Development Fund due to the failure of the applicable borrowers to comply with their obligations under the related reimbursement agreements. Of the total amount disbursed, the Tourism Development Fund has been able to recover approximately \$199.7 million from the borrowers. After taking these payments and all related recoveries into account, the unrestricted net assets of the Tourism Development Fund as of September 30, 2007, were approximately \$143 million, and its allowances for losses on guarantees, loans, other assets and letters of credit were approximately \$23 million.

Capital Fund. The Government Development Bank for Puerto Rico Capital Fund (the "Capital Fund") invests and trades in debt obligations and publicly traded shares of domestic and foreign corporations separate from GDB's general investment operations. As of September 30, 2007, the Capital Fund had assets of \$90.3 million, of which \$58.8 million were invested in an equity index fund that invests mainly in growth, value, small cap and international stocks.

Development Fund. The Puerto Rico Development Fund (the "Development Fund") provides an alternate source of financing to private enterprises in Puerto Rico that have difficulties in obtaining financing from traditional sources. The Development Fund also guarantees obligations of these enterprises and invests in their equity securities. As of September 30, 2007, the Development Fund had no investments due to the sale of most of its assets to the Economic Development Bank for Puerto Rico in June 2006.

Public Finance Corporation. Puerto Rico Public Finance Corporation ("Public Finance Corporation") provides agencies and instrumentalities of the Commonwealth with alternate means of meeting their financing requirements. Public Finance Corporation currently holds notes payable by the Commonwealth, the Maritime Shipping Authority, the Office for the Improvement of Public Schools, the Department of Health, and the Aqueduct and Sewer Authority, among others. As of September 30, 2007, it had \$2.8 billion aggregate principal amount of bonds outstanding. All such bonds are limited, non-recourse obligations of Public Finance Corporation payable from the Puerto Rico Sales Tax Financing Corporation and/or Commonwealth appropriations made to pay the notes held by Public Finance Corporation. In addition, Public Finance Corporation had \$104 million of notes outstanding under a line of credit with GDB whose proceeds were used to pay fiscal year 2007 debt service on its bonds due to the

failure of the Commonwealth to make the required debt service appropriations on account of its fiscal problems.

Sales Tax Financing Corporation (“COFINA”) was created by Act No. 91 of the Legislative Assembly of Puerto Rico, approved May 13, 2006, as amended (“Act 91”), for the purpose of financing the payment, retirement or defeasance of certain appropriation-backed debt outstanding as of June 30, 2006. Act 91 vested COFINA with all the powers conferred on Government Development Bank under its charter (other than the power to act as fiscal agent), including the power to issue bonds for its corporate purposes, to the extent required in order for the Corporation to carry out the purposes for which it was created. Act 91 provides that present and future collections of the pledged sales tax be transferred to COFINA in exchange for, and in consideration of, COFINA’s commitment to pay, or establish mechanisms to pay, all or part of virtually all appropriation-backed debt outstanding as of June 30, 2006 with the net proceeds of the bonds issued by COFINA and with other funds and resources available to COFINA. As of September 30, 2007, approximately \$4.0 billion of COFINA’s bonds were outstanding, the net proceeds of all of which bonds were used to refinance and retire outstanding debt of Public Finance Corporation.

A description of certain other affiliates of GDB is provided in “Other Public Corporations” below.

Other Public Corporations

Aqueduct and Sewer Authority. Puerto Rico Aqueduct and Sewer Authority (“PRASA”) owns and operates the island’s public water supply and sanitary sewer facilities systems (the “Systems”).

PRASA needs to make substantial investments in infrastructure and a major overhaul of its operations to maintain the viability of the Systems and to finance its expansion for new users. Funds for this investment will be provided through a combination of revenues from PRASA, financing transactions, federal grants and other sources. Debt service on revenue bonds is payable from net revenues of the Systems after payment of current expenses. Due to PRASA’s financial difficulties and its inability to access the bond market, the Commonwealth guarantees the principal and interest payments to the bondholders of all outstanding revenue bonds issued by PRASA, including those issued to the United States Department of Agriculture, Rural Development, and loans granted by the Clean Water and Drinking Water State Revolving Funds for the benefit of PRASA. In February 2004, this guaranty was extended through new legislation to include debt obligations issued until 2010.

PRASA reported operational losses of \$343 million and \$361 million during fiscal years 2005 and 2006, respectively. The total debt of PRASA was \$1.9 billion as of September 30, 2007.

Beginning in fiscal year 2006, the Commonwealth’s General Fund ceased to provide financial assistance to PRASA, including making payments on PRASA’s guaranteed revenue bonds (as of January 1, 2006). As part of its efforts to regain fiscal independence, PRASA implemented substantial increases in water and wastewater service rates in two phases. The first phase took effect on October 10, 2005. The second phase took effect on July 1, 2006. The new rate structure also includes changes from bi-monthly to monthly invoicing of residential customers. There is no assurance that PRASA will generate sufficient revenues to enable it, after satisfying other senior obligations described below, to continue to pay debt service on its guaranteed bonds. In the event PRASA is unable to make any portion of the future debt service payments on its guaranteed bonds, the Commonwealth would once again be required to make such payments under its guarantee from the General Fund. PRASA has also begun to pay from its

revenues the debt service on a note it issued to Public Finance Corporation (in the principal amount of \$368.3 million), which note financed the cost of the north coast super-aqueduct, as well as notes issued to Public Finance Corporation (in the principal amount of approximately \$747 million), which notes financed its operations.

In June 2006, PRASA entered into an agreement to plead guilty to an indictment charging 15 felony counts of violating the federal Clean Water Act through the illegal discharge of pollutants from nine sanitary wastewater treatment plants and five drinking water treatment plants. Under the plea agreement, PRASA will pay a criminal fine of \$9 million and was placed on five years' probation. PRASA and the United States also reached a comprehensive civil settlement to resolve repeated environmental violations at 62 wastewater treatment plants throughout the Commonwealth. According to the civil settlement, PRASA will spend an estimated \$1.7 billion implementing approximately 145 capital improvement projects and other remedial measures at all of its wastewater treatment plants and related collection systems over the next 15 years. In December 2006, PRASA and the Commonwealth Department of Health executed a settlement agreement superseding 180 administrative orders against, and three prior settlement agreements with, PRASA. Under the terms of this agreement, PRASA paid a civil penalty of \$1.0 million and agreed to implement short, medium and long-term work plans, as well as interim mitigation and preventative measures, all to bring PRASA's water system into compliance with federal and Commonwealth potable water regulations. The total cost of complying with this settlement agreement is expected to be between \$700 and \$800 million.

PRASA is currently in the process of putting together a bond issue of approximately \$1.2 billion of senior lien, net revenue bonds to fund its capital improvement program and to refinance certain debt, including some of the working capital debt described above.

Children's Trust is a not-for-profit corporate entity created in 1999 as a public instrumentality of the Commonwealth. The Commonwealth has transferred to Children's Trust all of its rights, title and interest under the tobacco litigation Master Settlement Agreement, including the Commonwealth's right to receive initial, annual and strategic contribution payments to be made by the participating cigarette manufacturers under the Master Settlement Agreement.

Children's Trust issued \$1.2 billion Tobacco Settlement Asset-Backed Bonds in October 2002. The bond proceeds were used, among other things, to pay the cost of certain capital expenses of the Commonwealth and certain capital and working capital expenses of PRASA. On June 30, 2005, the Children's Trust issued \$108.2 million subordinate Tobacco Settlement Asset-Backed Bonds to pay working capital expenses of the Commonwealth. As of September 30, 2007, the outstanding principal amount of the Trust's bonds was \$1.2 billion. These bonds and any other additional senior bonds issued by Children's Trust are secured by a statutory pledge of the payments made and to be made by the participating cigarette manufacturers under the Master Settlement Agreement. To date, all principal and interest payments required to be made by the Trust on its outstanding bonds have been made on a timely basis from contribution payments made by the participating cigarette manufacturers under the Master Settlement Agreement.

Convention Center District Authority. The Convention Center District Authority was created to own, develop, finance, plan, design, build, operate, maintain, administrate and promote a new convention center and designated private parcels located within the Convention Center District in San Juan. The convention center opened on November 17, 2005.

The Industrial, Tourist, Educational, Medical and Environmental Control Facilities Financing Authority ("AFICA") financed the construction of a multi-purpose coliseum in San Juan, known as the José Miguel Agrelot Coliseum, with a line of credit provided by GDB. The Coliseum was transferred to

the Convention Center District Authority along with the associated line of credit. As of September 30, 2007, this line of credit with GDB had an outstanding balance of \$155.2 million, which is expected to be paid from the proceeds of Commonwealth general obligation bonds. The Authority's debt as of May 31, 2007 was \$624 million including \$468.8 million of bonds issued in March 2006 to finance the Convention Center and payable from a portion of a hotel room tax.

Electric Power Authority. The Authority owns and operates the island's electric system. The capital improvement program for the five-year period ending June 30, 2011 is estimated to cost approximately \$2.2 billion and will be financed primarily by borrowed funds, supplemented by internally generated funds. The Authority's bonded debt consists of Power Revenue Bonds, secured by a lien on net revenues of the electric system. As of September 30, 2007, the Authority's total debt was \$6.5 billion, including \$5.7 billion of bonds outstanding (not including accretion of interest from the respective issuance dates on capital appreciation bonds). As a means of reducing its dependency on oil, the Authority has entered into long-term power purchase agreements with the operators of two co-generation plants that use fuels other than oil. Currently, these two co-generation plants provide approximately 27% of the Authority's energy needs.

Health Insurance Administration was created in 1993 to negotiate and contract for the provision of comprehensive health insurance coverage for qualifying (generally low income) Puerto Rico residents. Under this system, the government selects, through a bidding system, one private health insurance company in each of eight designated regions of the island and pays such insurance company the insurance premium for each eligible beneficiary within such region. The health insurance system covers the entire island, and approximately 1.5 million persons were covered by the system during fiscal year 2006.

In January 2006, the Commonwealth entered into various contracts with several Medicare Advantage Organizations for the provision of health coverage to approximately 200,000 eligible beneficiaries. Pursuant to these agreements, the Commonwealth pays each Medicare Advantage Organization a premium difference to cover services not included in their contracts with the Center for Medicaid and Medicare Services.

The total cost of the health insurance program for fiscal year 2006 was \$1.56 billion, compared to \$1.46 billion for fiscal year 2005 and \$1.37 billion for fiscal year 2004. For fiscal year 2006, the General Fund covered \$984 million of the total cost of the health insurance program, while the remaining \$586 million was paid from federal, municipal and other sources. The fiscal year 2007 budget pegged the cost of the health insurance program at more than \$1.6 billion, of which the General Fund covered \$984 million, while the remaining \$633 million was paid from federal, municipal and other sources, including a loan of \$203 million from GDB. The health insurance program projected an \$82 million surplus for fiscal year 2007, which surplus will be used for costs of the program in fiscal year 2008. Negotiations with insurance companies will be focused on cost containment strategies that will seek to reduce this cost to the amount appropriated. See *Budget of the Commonwealth of Puerto Rico*.

Highways and Transportation Authority. The Authority is responsible for highway construction in Puerto Rico. Such construction is financed by debt (interim notes and revenue bonds), revenues of the Authority, and federal and Commonwealth grants. Debt service on the Authority's revenue bonds constitutes a first lien on its gross revenues, which consist currently of all the proceeds of the tax on gasoline, one-half of the proceeds of the tax on gas oil and diesel oil, all the proceeds of the excise taxes on crude oil, unfinished oil and derivative products, up to \$120 million per fiscal year, highway toll revenues (which were increased approximately 43% in September 2005), and the gross receipts of \$15.00 per vehicle per year from certain motor vehicle license fees. Such revenues (except for toll revenues) may be applied first to the payment of debt service on general obligation bonds and notes of the Commonwealth and to payments required to be made by the Commonwealth under its guarantees of

bonds and notes, to the extent that no other revenues are available for such purpose. The Commonwealth has never applied such revenues for such payment. As of September 30, 2007, the Authority's total debt was \$6.6 billion, including \$6.4 billion in outstanding bonds.

The Authority has completed the first phase of a new mass transit system, known as Tren Urbano, to serve a portion of metropolitan San Juan. It was constructed under several design/build contracts and is being privately operated under a five-year contract with an additional five-year option at the Authority's election. The cost of the first phase was \$2.25 billion, which cost was financed by federal Transit Administration grants, other federal funding sources and the Authority's own resources, including revenue bonds. Tren Urbano commenced operations in June 2005.

The Authority is a party to a concession agreement under which a private company designed, constructed and currently is operating a toll bridge spanning the San José Lagoon. The toll bridge was financed with special facility revenue bonds of the Authority, the outstanding principal balance of which was \$153.2 million as of September 30, 2007, payable by the private operator of the bridge principally from toll revenues. The concession is for a term of 35 years, subject to earlier termination or extension. The bridge opened for traffic in February 1994. In certain circumstances described in the concession agreement, including where toll revenues are insufficient to generate certain rates of return to the private operator, the private operator may require the Authority, among other things, to assume the operator's obligations with respect to the special facility revenue bonds. Some of those circumstances, including low toll revenues, exist at this time, but the Authority does not currently anticipate that the operator will exercise its remedy against the Authority.

Industrial Development Company participates in the Commonwealth-sponsored economic development program by providing physical facilities, general assistance, and special incentive grants to manufacturers. The Company was merged with the Economic Development Administration in January 1998. Rentals derived from the leasing of specified facilities of the Company are pledged to the payment of the Company's revenue bonds. As of September 30, 2007, the Company's total debt was \$350.5 million. The Company restructured its operations in order to allow it to react quickly to changing business situations. Part of this restructuring included a significant reduction in the number of its employees.

Industrial, Tourist, Educational, Medical and Environmental Control Facilities Financing Authority was created to finance (through the issuance of its revenue bonds) industrial, tourist, educational, medical, and environmental control facilities in Puerto Rico for the use of private companies, non-profit entities, or government agencies. The bonds are payable solely from payments to be made to AFICA by such private companies, non-profit entities, or government agencies, and do not constitute a debt of the Commonwealth or any of its other public corporations or municipalities. As of September 30, 2007, approximately \$1.6 billion of AFICA's bonds were outstanding.

Infrastructure Financing Authority was created to provide financial, administrative, consulting, technical, advisory, and other types of assistance to other public corporations, governmental instrumentalities, political subdivisions and municipalities (collectively, "Benefited Entities") authorized to develop infrastructure facilities and to establish alternate means for financing those facilities. The Authority is authorized to issue bonds and provide loans, grants and other financial assistance for the construction, acquisition, repair, maintenance and reconstruction of infrastructure projects by Benefited Entities. The Authority oversees the Puerto Rico Infrastructure Fund, which is funded with annual fixed amounts from the first proceeds of federal excise taxes imposed on rum and other articles produced in Puerto Rico and sold in the United States which are transferred to Puerto Rico pursuant to the United States Internal Revenue Code of 1986, as amended. Currently, this amount is \$90 million through fiscal year 2009 and will then increase to \$117 million annually through fiscal year 2052. Rum is the only

article currently produced in Puerto Rico subject to federal excise taxes, the proceeds of which are required to be returned to the Treasury. The Authority is using these amounts to provide financial support for various infrastructure and other projects. As of September 30, 2007, the Authority's total debt was \$1.9 billion.

The Authority will invest approximately \$405 million in new infrastructure projects in connection with the holding of the Central American and Caribbean Games in Mayagüez, Puerto Rico, in 2010. In September 2006, the Authority issued \$469.8 million of bonds to finance these and other infrastructure projects.

Municipal Finance Agency is the municipal "bond bank" for Puerto Rico. The Agency is authorized to issue bonds to purchase general obligation bonds and notes of Puerto Rico municipalities and to fund a debt service reserve. Debt service on the Agency's bonds is payable from debt service payments on municipal bonds and notes held by the Agency and from the debt service reserve, including investment income thereon. The Commonwealth has agreed to pay such amounts to the debt service reserve as may be necessary to maintain it at its required level, subject to appropriation by the Legislative Assembly, which appropriation is authorized but not legally required to be made. To date no such payments have been required. As of September 30, 2007, the Agency had \$1.4 billion of bonds outstanding.

Port of the Americas Authority. Port of the Americas Authority is responsible for the development and operation of the Port of the Americas (the "Port"), a deep draft port on the south coast of Puerto Rico. In December of 2004, the first phase of the Port was completed at a cost of \$40 million. The Authority is authorized to issue bonds guaranteed by the Commonwealth in a maximum aggregate principal amount of \$250 million. The proceeds from these bonds will be used to continue the development of the Port. Currently, GDB is authorized to purchase bonds of the Authority in an aggregate principal amount not to exceed \$250 million. As of September 30, 2007, GDB held approximately \$94.6 million of the Authority's outstanding bonds, which are guaranteed by the Commonwealth.

Ports Authority. The Authority owns and operates the major airport and seaport facilities in Puerto Rico. The Authority derives revenues from a variety of sources, including charges on airplane fuel sales, air terminal space rentals, landing fees, wharfage, dockage and harbor fees, and rentals for the lease of property and seaport equipment. As of September 30, 2007, the Authority had \$612.3 million in debt, including \$27.5 million under a line of credit with GDB.

Public Buildings Authority is authorized to construct, purchase or lease office, school, health, correctional and other facilities for lease to departments, public corporations, and instrumentalities of the Commonwealth. Bonds that have been issued by the Authority to finance such facilities (through retirement of interim notes or otherwise) are payable from lease payments, which are largely derived from legislative appropriations and are secured by the Commonwealth's guaranty. The Authority is authorized by law to have outstanding at any one time up to \$3.325 billion of bonds guaranteed by the Commonwealth. As of September 30, 2007, \$2.76 billion of such bonds of the Authority were outstanding (not including accretion of interest from the respective issuance dates on capital appreciation bonds). As of September 30, 2007, Public Building Authority's line of credit with GDB had an outstanding balance of \$224 million. During December 2007, the Authority issued \$895,290,000 of Commonwealth guaranteed bonds. The bonds were issued to refund \$551 million of outstanding bonds and to provide funds to pay a portion of the costs of the Authority's capital projects and to repay certain outstanding notes of the Authority held by Government Development Bank.

Special Communities Perpetual Trust. The Special Communities Perpetual Trust, a public corporation, is an irrevocable and permanent trust. The Trust's principal purpose is to fund development projects which address the infrastructure and housing needs of underprivileged communities. GDB has made a special capital contribution to the Special Communities Perpetual Trust of \$500 million and provided the Trust with a \$500 million, non-revolving, line of credit. The amounts transferred by GDB were deposited in two investment accounts held by GDB for the benefit of the Special Communities Irrevocable Trust, of which \$671 million had been disbursed to the Trust as of September 30, 2007. As of September 30, 2007, the Special Communities Perpetual Trust's line of credit with GDB had an outstanding balance of \$385.1 million. The line of credit is payable from legislative appropriations.

Telephone Authority was created in July 1974 when the Commonwealth purchased the Puerto Rico Telephone Company ("PRTC") from International Telephone and Telegraph Corporation. PRTC operates the principal telephone system in Puerto Rico.

In 1999, the Telephone Authority sold a controlling interest in PRTC to a consortium led by a predecessor of Verizon Communications, Inc ("Verizon"). The net proceeds of \$1.2 billion, after PRTC's outstanding debt was retired and certain employee benefits were paid, was deposited into the Infrastructure Development Fund held by the Infrastructure Financing Authority. In 2002, Verizon exercised an option to purchase additional shares from the Telephone Authority for \$172 million, leaving the Authority with a 28% ownership interest in PRTC. In 2007, the Authority sold its remaining interest in PRTC to a subsidiary of América Móvil, S.A. de C.V. for \$529 million, the proceeds from which were transferred to the Employees Retirement System of the Commonwealth.

University of Puerto Rico (the "University"), with approximately 62,340 students in academic year 2006-2007, is by far the largest institution of higher education on the island. Government appropriations are the principal source of University revenues, but additional revenues are derived from tuition, student fees, auxiliary enterprises, interest income, federal grants, and other sources. University capital improvements have been financed mainly by revenue bonds. As of September 30, 2007, the University's total debt was \$630.0 million, including \$604.7 million of outstanding revenue bonds.

In 2000, AFICA issued its \$86,735,000 Educational Facilities Revenue Bonds, 2000 Series A (University Plaza Project) for the purpose of financing the construction of additional student housing and parking and office space for the University. The project was built, is being operated by Desarrollos Universitarios, Inc., a Puerto Rico not-for-profit corporation, and is leased to the University for a term equal to the term of the bonds with University lease payments being sufficient to pay debt service on said bonds as they become due. These bonds are not included in the University's total debt or outstanding revenue bonds set forth in the prior paragraph.

Other public corporations (not described above) have outstanding debt in the aggregate amount of \$1.6 billion as of September 30, 2007. Debt service on \$720.5 million of such outstanding debt is being paid from legislative appropriations and sales tax receipts. The Commonwealth is not, however, obligated to make any such appropriations. Additional legislative appropriations are made to enable certain of such corporations to pay their operating expenses.

INSURANCE MATTERS

Government-owned property is insured through policies obtained by the Secretary of the Treasury and through self-insurance, except for property owned by the Electric Power Authority and PRASA, whose properties are insured through arrangements and policies obtained by the respective Authorities. Personal injury awards against the Commonwealth are limited by law to \$150,000 per occurrence.

RETIREMENT SYSTEMS

General. Public employees of the Commonwealth and its instrumentalities are covered by five retirement systems: the Employees Retirement System, the Puerto Rico System of Annuities and Pensions for Teachers (the “Teachers Retirement System”), the Commonwealth Judiciary Retirement System (the “Judiciary Retirement System”), the Retirement System of the University of Puerto Rico (the “University Retirement System”), and the Employees Retirement System of Puerto Rico Electric Power Authority (the “Electric Power Authority Retirement System”).

The University Retirement System and the Electric Power Authority Retirement System apply to employees of the University of Puerto Rico and Electric Power Authority, respectively. The Commonwealth is not required to contribute directly to those two systems, although a large portion of University revenues is derived from legislative appropriations.

Covered Employees. The Teachers Retirement System covers public school teachers and certain private school teachers, as well as teachers working in administrative positions. Substantially all active teachers of the Commonwealth’s Department of Education are covered by Act No. 91 of March 29, 2004 which superseded Act No. 218 of 1951. The new law establishes that: (i) the Teachers Retirement System’s active employees as of March 29, 2004 (not public school teachers or other Education Department employees) have the option to participate in the Teachers Retirement System or in the Employees Retirement System; (ii) persons hired by Teachers Retirement System after the approval of the new law may only become members of the Teachers Retirement System, (iii) active teacher employees of the Department of Education are members of the Teachers Retirement System, and (iv) licensed teachers working in private schools or other educational organizations may elect to become members of the Teachers Retirement System as long as the required employer and employee contributions are satisfied. The Judiciary Retirement System covers judges, and the Employees Retirement System covers all other employees of the Commonwealth, its municipalities and instrumentalities. As of March 30, 2007, the total number of participants, including active participants and retirees, in the three systems was as follows: Employees Retirement System, 274,060; Teachers Retirement System, 77,500 (June 30, 2006 datum); and Judiciary Retirement System, 691. The three systems are financed by contributions made by employers (the Commonwealth, public corporations, and municipalities) and employees, and investment income.

Funding Requirements. The central government is responsible for approximately 62% of total employer contributions to the Employees Retirement System, and the other 38% is the responsibility of public corporations and municipalities. The central government is also responsible for 100% and 99% of total employer contributions to the Judiciary and Teachers Retirement Systems, respectively. Retirement and related benefits provided by the systems and required contributions to the systems by employers and employees are determined by law rather than by actuarial requirements. For the Employees Retirement System, required employer contributions are 9.275% of applicable payroll. Required employee contributions for the Employees Retirement System vary according to salary and how the individual employee’s retirement benefits are coordinated with social security benefits. For the Judiciary Retirement System, required contributions are 20% of applicable payroll for the employer and 8% for the employees. For the Teachers Retirement System, required contributions are 8.5% of applicable payroll for the employer and 9.0% for the employees.

Actuarial Valuation of Employees and Judiciary Retirement System. According to the most recent actuarial valuation of the Employees Retirement System and Judiciary Retirement System submitted by a firm of independent consulting actuaries, as of June 30, 2005, the total pension benefit obligations for the Employees Retirement System and Judiciary Retirement System were \$12.284 billion and \$179 million, respectively. The unfunded pension benefit obligations of the Employees Retirement

System and Judiciary Retirement System for the same period were \$9.956 billion and \$104 million, respectively, representing funding ratios of 19% and 40%, respectively. Any amounts receivable from the Commonwealth with respect to benefits under special benefits laws (discussed below) are considered in the actuarial evaluation process to determine the unfunded pension benefit obligation of the Employees Retirement System to the extent receivables are recognized as such by the Employees Retirement System. The June 30, 2005 actuarial valuation was completed in accordance with the "Projected Unit Credit" method and assumed an investment return of 8.5% per year and a salary increase of 5% per year. Insofar as the statutorily mandated annual deposit to the Employees Retirement System and Judiciary Retirement System is insufficient to cover the actuarial pension benefit obligation, the unfunded pension benefit obligation of the System will continue to increase in the short term, and additional funding from the Commonwealth may ultimately be necessary to cover such unfunded obligation.

Actuarial Valuation of Teachers Retirement System. According to the most recent actuarial valuation of the Teachers Retirement System submitted by a firm of independent consulting actuaries, as of June 30, 2004 the accrued actuarial liability of the system was \$4.7 billion and the value of its assets amounted to \$2.4 billion, representing a funding ratio of 51%, and the resulting unfunded accrued liability was \$2.3 billion. This funding ratio takes into account the recent turn-around in the equities market and the restructuring of the portfolio's asset composition. The actuarial valuation assumed an investment return of 8%, yearly salary increases of 5%, employee and employer contributions of 9% and 8.5%, respectively, an inflation rate of 3.5%, and a remaining amortization period of 16 years for the unfunded accrued liability. The actuarial accrued liability does not include benefits paid under special benefits laws (described below) and will not include the obligation with respect to the prospective payments under special benefits laws because these are not obligations of the Teachers Retirement System, and the funding for such benefits will originate from the Commonwealth's General Fund. Insofar as the statutorily mandated annual deposit to the Teachers Retirement System is insufficient to cover the actuarial pension liability, the unfunded pension benefit obligation will continue to increase, and additional funding from the Commonwealth may ultimately be necessary to cover such unfunded liability.

Special Benefits. Various special benefits laws enacted in previous years provided for additional benefits for the Employees Retirement System, Teachers Retirement System, and Judiciary Retirement System. Specifically, in the case of the Employees Retirement System, Act No. 10 of May 21, 1992 provided for special benefit increases of 3% every three years. The first 3% increase was granted to retirees who had been receiving their annuities for three or more years as of that date. The second 3% increase was granted to retirees who had been receiving their annuities for three or more years as of January 1, 1995. This increase is being financed by additional contributions from the employers. The third 3% increase was granted to retirees who had been receiving their annuities for three or more years as of January 1, 1998. This third increase is being partially funded with additional contributions from some of the employers. In June 2001, the Legislative Assembly approved a fourth 3% increase, effective as of January 1, 2001, in post-retirement annuity payments granted on or prior to January 1, 1998. This increase will be funded by the General Fund for retirees who were employees of the central government and by municipalities and public corporations for retirees who were their employees. In June 2003, the Legislative Assembly approved a fifth increase of 3% in post retirement benefits effective January 1, 2004. This increase will also be funded by the General Fund for retirees who were employees of the central government and by municipalities and public corporations for retirees who were their employees. In June 2007, the Legislative Assembly approved a sixth increase of 3% in post retirement benefits effective January 1, 2007. This increase will also be funded by the General Fund for retirees who were employees of the central government and by municipalities and public corporations for retirees who were their employees. Subsequent increases will depend upon the express approval of the Board of Trustees of the Employees Retirement System and the Legislative Assembly, and must provide a funding source. In the case of the Judiciary Retirement System, Act No. 41 of June 13, 2001 provided a 3% special benefit increase in annuity payments, commencing on January 1, 2002 and every three years thereafter, to retirees

who have been receiving their annuities for three or more years as of that date. This increase will be funded by the General Fund.

The Teachers Retirement System is seeking reimbursement from the Commonwealth's Office of Management and Budget in the amount of \$119 million for special benefits paid by the System to its beneficiaries through June 30, 2004 pursuant to special benefit laws enacted by the Legislative Assembly. The Teachers Retirement System's interpretation of these special benefit laws, to the effect that the Commonwealth is required to reimburse the Teachers Retirement System for such special benefits paid, is being disputed by OMB. This dispute is currently under inter-agency arbitration proceedings. The Employees Retirement System is also seeking reimbursement from the Commonwealth (in connection with other special benefits laws applicable to its beneficiaries) in the amount of \$73.8 million, representing cumulative benefits paid to beneficiaries through June 30, 2005. The Employees Retirement System projects an additional shortfall of \$39.4 million for fiscal year 2006 in connection with special benefits laws payments. OMB believes that the basis of the claims from the Employees Retirement System is valid but that the amounts claimed remain to be verified and reconciled.

Amendments to Employees Retirement System. In February 1990, the organic act of the Employees Retirement System was amended to reduce the future pension liabilities of the Employees Retirement System. Among other provisions, the legislation increased the level of contributions to the Employees Retirement System and limited the retirement benefits for new employees by increasing the length of employment required for the vesting of certain benefits and reducing the level of benefits in the case of early retirement. The legislation also reduced the level of occupational disability benefits and death benefits received by new employees.

In 1999, the organic act of the Employees Retirement System was further amended to change it, prospectively, from a defined benefit system to a defined contribution system. This amendment provides for the establishment of an individual account for each employee hired by the Commonwealth after December 31, 1999 and for those current employees who elect to transfer from the existing defined benefit system. The individual account of each current employee is credited initially with an amount equal to his aggregate contributions to the Employees Retirement System, plus interest. Current employees who did not elect to transfer to the new defined contribution system will continue accruing benefits under the current defined benefit system. The individual account of each participant of the new defined contribution system is credited monthly with the participant's contribution and is credited semiannually with a rate of return based on either of two notional investment returns. Such accounts are not credited with any contribution by the employer. Instead, employer contributions will now be used completely to reduce the accumulated unfunded pension benefit obligation of the Employees Retirement System.

The law approving the sale of a controlling interest in PRTC to a consortium led by GTE International Telecommunications Incorporated (subsequently acquired by Verizon Communications Inc.) (see *Public Corporations – Other Public Corporations – Telephone Authority*) provides that any future proceeds received by the government from the sale of its then remaining 43% stock ownership in PRTC will be transferred to the Employees Retirement System to reduce its accumulated unfunded pension benefit obligation. In January 2002, Verizon exercised its option to purchase an additional 15% of the stock of PRTC for \$172 million. The proceeds of the sale were transferred to the Employees Retirement System. The Commonwealth has decided to exercise its "tag along" rights in connection with the sale by Verizon of its PRTC stock to Sercotel. As a result of the exercise of such rights, the Employees Retirement System received in June 2007 approximately \$529 million from the sale of its remaining stock participation in PRTC.

Historically, the Employees Retirement System achieved a return on investment of less than 2% on the PRTC stock, while the average return of the other assets in its portfolio was approximately 10.8%. In order to improve its funding ratio and address its continuing cash shortfalls, the Employees Retirement System intends to use the proceeds received from the sale of the PRTC stock to acquire other, higher-yield assets, such as personal and mortgage loans to participants of the System.

Cash Flow Shortfalls. The Employees Retirement System's disbursements of benefits during fiscal years 2003 through 2006 exceeded contributions and investment income for those years. The cash shortfall for fiscal year 2003 was covered with a portion of the proceeds from the sale to Verizon of the 15% stock ownership in PRTC and a loan received from the Department of the Treasury. The cash shortfall for fiscal year 2004 was covered with a loan received from the Department of the Treasury. Balances owed to the Department of the Treasury and other pending working capital needs through fiscal year 2005 were refinanced through a repurchase agreement with a financial institution in an amount of \$138 million collateralized with the assets of the Employees Retirement System. The cash shortfall for fiscal year 2006 was approximately \$70 million. This shortfall was covered with a line of credit provided by a private financial institution and collateralized with the assets of the Employees Retirement System. There was no cash shortfall for fiscal year 2007 on account of the receipt of the proceeds from the sale of the PRTC stock. Also with these proceeds the Employees Retirement System paid off the balances of the 2005 repurchase agreement and the 2006 line of credit used to cover the respective year's cash shortfalls.

Efforts to Address Cash Flow Shortfall and Improve Funding Ratio. The Employees Retirement System anticipates that its future cash flow needs for disbursement of benefits to participants are likely to exceed the sum of the employer and employee contributions received and its investment and other recurring income. The Employees Retirement System is also evaluating other measures to improve its cash flows and funding ratio. Some of these measures include, but are not limited to, the establishment of a maximum salary to calculate pension benefits, aggressive collection efforts with respect to employer contributions owed by the Commonwealth, the municipalities and public corporations, and the transfer to the Employees Retirement System of any amounts remaining in the Children's Trust after payment of all the outstanding bonds. See "Tax Reform" under *Puerto Rico Taxes, Other Revenues, and Expenditures*.

In addition, the Employees Retirement System is currently undertaking a financing that would significantly increase the System's funding ratio and reduce its unfunded pension benefit obligation. The financing involves the issuance by the Employees Retirement System of debt secured by a pledge of future employer contributions over the next 50 years. All net cash generated by this financing would be deposited into the Employees Retirement System trust to be invested along with its other assets as described above. The Employees Retirement System estimates that the financing will be undertaken during fiscal year 2008 and subsequent years.

The following tables present the Statement of Plan Net Assets and Statement of Changes in Plan Net Assets of the Employees Retirement System and the Judiciary Retirement System for the fiscal years 2005 and 2006 and at and as of the period ended April 30, 2007, and of the Teachers Retirement System for fiscal years 2004, 2005 and 2006.

**The Commonwealth of Puerto Rico
Employees Retirement System
Statement of Plan Net Assets*
As of June 30, 2005 and as of April 30, 2007**

	<u>2007⁽¹⁾</u>	<u>2006⁽¹⁾</u>	<u>2005⁽¹⁾</u>
	<u>Unaudited</u>		
ASSETS			
Cash and Investments:			
Cash and Cash Equivalents:			
Deposits at Commercial banks	\$ 42,830,000	\$ 27,849,000	\$ 13,196,000
Deposited with GDB:			
Unrestricted	95,422,000	25,778,000	29,177,000
Restricted	2,306,000	2,156,000	1,578,000
Total Cash	<u>140,588,000</u>	<u>55,783,000</u>	<u>43,951,000</u>
Marketable Securities:			
Notes and Bonds	1,863,000	154,825,000	20,786,000
Stocks	1,643,507,000	1,376,901,000	1,200,132,000
Master Repo	148,273,000	-	145,654,000
Alternative investments	44,968,000	41,609,000	41,244,000
Total Investments	<u>1,838,611,000</u>	<u>1,573,335,000</u>	<u>1,407,816,000</u>
LOANS TO PLAN MEMBERS:			
Mortgage	97,649,000	96,544,000	82,295,000
Personal	431,538,000	405,756,000	362,363,000
Cultural Trips	26,305,000	23,762,000	20,590,000
Int. rec'able (net of loss allowance on loans)		2,490,000	-
Total Loans to Plan Members	<u>555,492,000</u>	<u>528,552,000</u>	<u>465,247,000</u>
Investment in PRTA Holdings	<u>495,318,000</u>	<u>495,318,000</u>	<u>486,080,000</u>
Total Cash, Investments and Loans to Plan Members	<u>3,029,980,000</u>	<u>2,652,988,000</u>	<u>2,403,094,000</u>
RECEIVABLES:			
Employer	75,919,000	43,343,000	34,656,000
General Fund of the Commonwealth	1,543,000	10,401,000	21,463,000
The Commonwealth of PR Judiciary	4,051,000	3,161,000	1,376,000
Investment Sales	3,812,000	1,279,000	2,090,000
Accrued Interest	2,688,000	2,385,000	2,209,000
Accrued Dividends		23,720,000	-
Other	65,936,000	23,579,000	21,896,000
Total Receivables	<u>153,949,000</u>	<u>107,868,000</u>	<u>83,689,000</u>
PROPERTY:	<u>6,982,000</u>	<u>7,694,000</u>	<u>8,411,000</u>
OTHER ASSETS:	<u>7,311,000</u>	<u>7,592,000</u>	<u>7,764,000</u>
Total Assets	<u>3,198,222,000</u>	<u>2,776,142,000</u>	<u>2,502,958,000</u>
LIABILITIES			
Book overdraft	43,861,000	-	-
Short Term Obligations	140,623,000	139,074,000	138,000,000
Line of Credit	60,000,000	60,000,000	-
Escrow Funds to Plan Members and Guarantee Insurance	7,986,000	8,433,000	20,366,000
Investment Purchases	5,341,000	1,179,000	2,079,000
Other Liabilities	99,495,000	26,125,000	14,642,000
Total Liabilities	<u>357,306,000</u>	<u>234,811,000</u>	<u>175,087,000</u>
Net Assets Held in Trust for Pension Benefits	<u>\$2,840,916,000</u>	<u>\$2,541,331,000</u>	<u>\$2,327,871,000</u>

* Totals may not add due to rounding.

⁽¹⁾ Rounded to the nearest thousand.

The Commonwealth of Puerto Rico
Employees Retirement System
Statement of Changes in Plan Net Assets*
As of June 30, 2005 and 2006 and as of April 30, 2007

	<u>2007⁽¹⁾</u>	<u>2006⁽¹⁾</u>	<u>2005⁽¹⁾</u>
ADDITIONS:			
Contributions:	Unaudited		
Employer	\$ 380,650,000	\$ 398,372,000	\$ 374,823,000
Employees	281,940,000	342,697,000	332,376,000
Special	17,000,000	16,684,000	14,731,000
Total Contributions	<u>679,590,000</u>	<u>757,753,000</u>	<u>721,930,000</u>
Investment Income:			
Realized Gain or Loss	29,102,000	33,023,000	36,418,000
Unrealized Gain or Loss	244,335,000	156,492,000	150,225,000
Dividend Income	13,628,000	49,938,000	19,111,000
Interest Income	59,699,000	63,486,000	49,917,000
Total	<u>346,764,000</u>	<u>302,939,000</u>	<u>255,672,000</u>
Less Investment Expense	(6,723,000)	(10,123,000)	(3,749,000)
Insurance Premiums on Plan Member Loans		14,492,000	-
Other Income	6,376,000	8,778,000	7,925,000
Net Investment Income	<u>346,417,000</u>	<u>292,816,000</u>	<u>259,848,000</u>
Total Additions	<u>1,026,006,000</u>	<u>1,073,839,000</u>	<u>981,777,000</u>
DEDUCTIONS:			
Annuities	643,873,000	772,647,000	713,814,000
Special	17,000,000	16,684,000	14,731,000
Death Benefits	25,539,000	14,984,000	10,895,000
Refunds:			
Employer	4,630,000	1,666,000	1,734,000
Employees	5,039,000	20,707,000	17,947,000
Insurance Claims on Plan Member Loans		1,216,000	-
Administrative Expenses	30,340,000	32,475,000	36,228,000
Net Adjustment in the conversion to a new loan application	-	-	-
Total Deductions	<u>726,422,000</u>	<u>860,379,000</u>	<u>795,348,000</u>
Net Increase	<u>299,585,000</u>	<u>213,460,000</u>	<u>186,430,000</u>
Net Assets Held in Trust for Pension			
Benefits:			
Beginning of the Year	2,541,331,000	2,327,871,000	2,141,442,000
End of Year	<u>\$2,840,916,000</u>	<u>\$2,541,331,000</u>	<u>\$2,327,871,000</u>

* Totals may not add due to rounding.

(1) Rounded to the nearest thousand.

**The Commonwealth of Puerto Rico
Judiciary Retirement System
Statement of Plan Net Assets***
As of June 30, 2005 and 2006 and as of April 30, 2007

	<u>2007⁽¹⁾</u>	<u>2006⁽¹⁾</u>	<u>2005</u>
ASSETS	Unaudited		
Cash and Investments:			
Cash and Cash Equivalents	\$ 2,430,000	\$ 1,599,000	\$ 1,803,777
Cash Deposited with GDB			
Unrestricted	208,000	180,000	921,430
Restricted	-	-	871
Total Cash	<u>2,638,000</u>	<u>1,779,000</u>	<u>2,726,079</u>
Receivables:			
Accrued Interest	245,000	250,000	252,862
Investment Sales	244,000	561,000	102,365
Other	41,000	45,000	48,657
Total Receivables	<u>530,000</u>	<u>856,000</u>	<u>403,885</u>
Marketable Securities:			
Notes and Bonds	21,338,000	19,822,000	20,031,133
Stock	66,691,000	56,108,000	49,360,624
Total Marketable Securities	<u>88,029,000</u>	<u>75,930,000</u>	<u>69,391,458</u>
LOANS TO PLAN MEMBERS			
(including accrued interest receivables)			
Mortgage	19,000	36,000	43,247
Personal	198,000	190,000	173,292
Cultural Trips	36,000	48,000	34,453
Total Loans to Plan Members	<u>253,000</u>	<u>274,000</u>	<u>251,269</u>
Total Cash, Investments and Loans to Plan Members	<u>91,450,000</u>	<u>78,839,000</u>	<u>72,772,692</u>
LIABILITIES			
Book Overdraft	3,686,000	1,902,000	827,661
Due to the Employees Retirement System of the Government of Puerto Rico	4,051,000	3,161,000	1,376,260
Escrow Funds to Plan Members and Guarantee Insurance	52,000	52,000	130,022
Investment Purchases	309,000	67,000	123,315
Other Liabilities	2,515,000	807,000	518,647
Total Liabilities	<u>10,613,000</u>	<u>5,989,000</u>	<u>2,975,906</u>
Net Assets Held in Trust for Pension Benefits	<u>\$80,837,000</u>	<u>\$72,850,000</u>	<u>\$69,796,786</u>

* Totals may not add due to rounding.

(1) The fiscal years 2006 and 2007 financial statements list all amounts "in thousands".

**The Commonwealth of Puerto Rico
Judiciary Retirement System
Statement of Changes in Plan Net Assets*
As of June 30, 2005 and 2006 and as of April 30, 2007**

	<u>2007⁽¹⁾</u>	<u>2006⁽¹⁾</u>	<u>2005</u>
ADDITIONS:	Unaudited		
Contributions:			
Employer	\$ 5,387,000	\$ 6,727,000	\$ 6,469,432
Employees	2,274,000	2,960,000	2,775,268
Total Contributions	<u>7,661,000</u>	<u>9,687,000</u>	<u>9,244,701</u>
Investment Income:			
Realized Gain or Loss	1,162,000	952,700	1,997,588
Unrealized Gain or Loss	9,838,000	5,943,982	2,247,722
Dividend Income	182,000	205,000	206,323
Interest Income	1,208,000	1,220,000	1,158,023
Total	<u>12,390,000</u>	<u>7,943,247</u>	<u>5,609,657</u>
Less Investment Expense	(3,000)	(279,000)	(190,134)
Other Income	-	-	3,645
Net Investment Income	<u>12,387,000</u>	<u>6,964,000</u>	<u>5,423,169</u>
Total Additions	<u>20,048,000</u>	<u>16,651,000</u>	<u>14,667,871</u>
DEDUCTIONS:			
Annuities	11,088,000	12,403,000	11,229,901
Refunds:			
Employer	-	-	135,074
Employees	38,000	-	124,296
Administrative Expenses	935,000	1,195,000	1,232,060
Net Adjustment in the conversion to a new loan application	-	-	-
Total Deductions	<u>12,061,000</u>	<u>13,598,000</u>	<u>12,721,333</u>
Net Increase	<u>7,987,000</u>	<u>3,053,000</u>	<u>1,946,538</u>
Net Assets Held in Trust for Pension Benefits:			
Beginning of the Year	<u>72,850,000</u>	<u>69,796,786</u>	<u>67,850,247</u>
End of the Year	<u>\$ 80,837,000</u>	<u>\$ 72,850,000</u>	<u>\$ 69,796,786</u>

* Totals may not add due to rounding.

⁽¹⁾ The fiscal years 2006 and 2007 financial statements list all amounts "in thousands".

The Commonwealth of Puerto Rico
Annuities and Pension for Teachers
Statement of Plan Net Assets*
As of June 30 of the Indicated Years
(in thousands)

	<u>2006</u>	<u>2005</u>	<u>2004</u>
ASSETS			
Cash:			
Cash and cash equivalents	\$ 53,515	\$ 79,017	\$ 67,113
Cash with fiscal agent	-	2,853	-
Cash restricted	1,717	1,595	2,396
Cash deposited with Government Development Bank for Puerto Rico	2,993	3,536	3,717
Total Cash	<u>58,225</u>	<u>87,001</u>	<u>73,226</u>
Investments, at fair value:			
Bonds and notes	463,474	257,030	280,747
Stocks	1,886,625	1,833,168	1,678,679
Total investment at fair value	<u>2,350,099</u>	<u>2,090,198</u>	<u>1,959,426</u>
Other investments:			
Mortgage notes acquired from third parties	-	-	-
Private equity investments	46,215	44,747	43,660
Total investments	<u>2,396,314</u>	<u>2,134,945</u>	<u>2,003,086</u>
Loan to plan members:			
Mortgage	104,830	109,605	110,293
Personal	246,074	234,335	233,342
Cultural trips	1,429	1,338	1,148
Total loans to plan members	<u>352,333</u>	<u>345,278</u>	<u>344,783</u>
Total investments and loans	<u>2,806,872</u>	<u>2,567,224</u>	<u>2,421,095</u>
Accounts receivable:			
Receivable for investments sold	12,163	10,516	5,535
Accrued interest and dividends receivable	6,371	4,449	5,380
Other	14,932	2,593	2,500
Total accounts receivable	<u>33,466</u>	<u>17,558</u>	<u>13,415</u>
Property and equipment, net	25,665	26,206	24,332
Other assets	691	600	619
Total Assets	<u>\$ 2,866,694</u>	<u>\$ 2,611,588</u>	<u>\$ 2,459,461</u>
LIABILITIES			
Investments purchased	\$ 11,422	\$ 14,262	\$ 10,567
Cash overdraft in cash with fiscal agent	13,949	-	7,812
Accounts payable	3,043	3,768	2,570
Obligation under capital lease	57	78	96
Accrued expenses	4,289	4,314	3,071
Line of credit	4	4	240
Escrow fund of mortgage loans and guarantee insurance reserve for loans to plan members	5,988	6,069	9,911
Bonds payable	20,430	21,285	22,090
Other liabilities	625	669	109
Total liabilities	<u>59,807</u>	<u>50,449</u>	<u>56,466</u>
Net Assets Held in Trust for Pension Benefits	<u>\$ 2,806,887</u>	<u>\$ 2,561,139</u>	<u>\$ 2,402,995</u>

* Totals may not add due to rounding.

**The Commonwealth of Puerto Rico
Annuities and Pensions for Teachers
Statement of Changes in Plan Net Assets*
As of June 30 of the Indicated Years
(in thousands)**

	2006	2005	2004
ADDITIONS:			
Contributions:			
Participating Employees	\$ 129,473	\$ 131,481	\$ 118,743
Employer	119,199	120,887	110,548
Special	61,066	60,853	40,409
Total contributions	<u>309,738</u>	<u>313,221</u>	<u>269,700</u>
Investment Income:			
Interest income	57,899	47,577	55,878
Dividend Income	14,684	20,339	17,264
Net appreciation (depreciation) in fair value of investments	258,182	161,685	240,732
	<u>330,765</u>	<u>229,601</u>	<u>313,874</u>
Less investment expense	5,792	4,986	4,958
Net investment income	<u>324,973</u>	<u>224,615</u>	<u>308,916</u>
Other income	13,085	1,167	32,397
Total additions	<u>\$ 647,796</u>	<u>\$ 539,003</u>	<u>\$ 611,013</u>
DEDUCTIONS:			
Benefit paid to participants:			
Annuities and death benefits	332,425	313,551	292,401
Special benefits	42,837	38,592	32,210
Refunds of contributions	4,135	2,912	3,432
Administrative expenses	22,651	25,804	22,637
Total deductions	<u>402,048</u>	<u>380,859</u>	<u>350,680</u>
Net increase in net assets held in trust for pension benefits	<u>245,748</u>	<u>158,144</u>	<u>260,333</u>
Net assets held in trust for pension benefits			
Beginning of year	2,561,139	2,402,995	2,142,662
End of year	<u>\$ 2,806,887</u>	<u>\$ 2,561,139</u>	<u>\$ 2,402,995</u>

* Totals may not add due to rounding.

COMMONWEALTH FINANCIAL STATEMENTS

For fiscal year 2006, the basic financial statements of the Commonwealth were audited by KPMG LLP. KPMG LLP did not audit the financial statements of the Public Buildings Authority capital project fund or The Children's Trust special revenue funds (major funds), and certain activities, funds and component units identified separately in its report. Those financial statements were audited by other independent auditors whose reports were furnished to KPMG LLP, and its opinion on the basic financial statements, insofar as it relates to the amounts included in the basic financial statements pertaining to such activities, funds and component units, is based solely on the reports of the other auditors. The report of KPMG LLP contains an emphasis paragraph for the 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.

The Comprehensive Annual Financial Report of the Commonwealth ("CAFR") for fiscal year 2006, which includes the basic financial statements of the Commonwealth for fiscal year 2006, was filed by the Commonwealth with each nationally recognized municipal securities information repository (each, a "NRMSIR") in August 2007, and an amendment thereto was filed with each NRMSIR in September 2007.

PUERTO RICO TAXES, OTHER REVENUES, AND EXPENDITURES

The Secretary of the Treasury has custody of the funds of the central government and is responsible for the accounting, disbursement and investment of such funds. Central government funds are grouped into three major categories or "types" of funds, as follows: (i) Governmental Fund Types, which include the General, Special Revenue, Debt Service (also referred to herein as Redemption), and Capital Project Funds; (ii) Proprietary Fund Types, which include the Enterprise and Internal Service Funds; and (iii) Fiduciary Fund Types, which include the Trust and Agency Funds. These funds do not include funds of the municipalities, because the municipalities are governmental entities with independent treasuries. The Special Revenue Fund is incorporated into the General Fund for financial reporting purposes (but not for budgetary purposes).

The General Fund is the primary operating fund of the Commonwealth. General Fund revenues are broadly based and include revenues raised internally as well as those from non-Puerto Rico sources. Internal revenues consist principally of income taxes and excise and sales taxes. Revenues from non-Puerto Rico sources are derived from federal excise taxes and customs duties returned to the Commonwealth. The primary expenditures of the Commonwealth through the General Fund are for grants and subsidies, and personal and other services.

Summary and Management's Discussion of General Fund Results

The following table presents the actual revenues and expenditures of the General Fund on a cash basis for fiscal year 2004 through fiscal year 2006, and the projected revenues and expenditures for fiscal years 2007 and 2008.

The amounts shown in the following table as expenditures may be different than those reflected in the budget or in the Commonwealth's financial statements because the table shows only cash disbursements, while the budget includes all authorized expenditures, regardless of when the related cash is actually disbursed. In addition, transfers to the Redemption Fund (used to pay debt service on the Commonwealth's bonds), which are included in the budget under "debt service," are shown as a deduction from total revenues in calculating "adjusted revenues" in the table and are not included under "expenditures." Finally, certain expenditures incurred in excess of budgeted amounts may not be

reflected in the table as expenditures to the extent they are paid from reserve funds, such as moneys in the Budgetary Fund. In fiscal years 2004 and 2005, there were approximately \$85 million and \$98.6 million, respectively, of such expenditures that are not reflected in the table. A discussion of the budget for fiscal years 2007 and 2008 appears below under *Budget of the Commonwealth of Puerto Rico*.

Amounts listed under “Other Income” represent recurring General Fund revenues not appropriately attributable to other revenue line items, such as repayment of General Fund advances to municipalities and government agencies and funds. “Other Expenditures” represent recurring General Fund expenditures not appropriately attributable to other expenditures line items, such as advances to government agencies and municipalities, which advances are to be reimbursed to the General Fund by law. Amounts listed under “Capital Outlays and Other Debt Service” represent debt service on obligations and capital expenditures for which the Legislative Assembly has by resolution agreed to appropriate funds. General Fund revenues, expenditures, and transfers as presented in the table differ from the General Fund revenues, expenditures, and transfers as presented in the financial statements of the Commonwealth, as the latter statements reflect an expanded General Fund entity in accordance with generally accepted accounting principles.

Commonwealth of Puerto Rico
General Fund Revenues, Expenditures, and Changes in Cash Balance
(in thousands)

	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007^(*)</u>	<u>2008⁽⁺⁾</u>
Beginning cash balance	\$ 179,058	\$ 108,512	\$ 42,933	\$ (0)	\$ (478,665)
Revenues from internal sources:					
Income Taxes:					
Individuals	2,720,920	2,885,903	3,087,748	3,112,892	3,067,000
Corporations	1,831,027	1,870,937	1,872,458	2,007,902	1,922,000
Partnerships	3,005	3,245	2,787	2,960	3,000
Withheld from non-residents	631,100	612,005	921,260	933,728	1,206,000
Tollgate taxes	31,579	22,973	27,397	25,082	10,000
Interest	10,108	10,489	11,536	12,112	13,000
Dividends	70,192	80,398	66,721	138,860	66,000
Total income taxes	<u>5,297,931</u>	<u>5,485,950</u>	<u>5,989,906</u>	<u>6,233,536</u>	<u>6,287,000</u>
Sales and use tax	-	-	-	582,560	911,000
Commonwealth excise taxes:					
Alcoholic beverages	296,302	298,235	292,180	279,028	288,000
Cigarettes	144,733	146,527	135,267	132,398	128,000
Motor vehicles	551,181	606,662	533,957	396,667	429,000
Other excise taxes	701,129	740,921	682,477	315,847	94,000
Total Commonwealth excise taxes	<u>1,693,345</u>	<u>1,792,345</u>	<u>1,643,881</u>	<u>1,123,940</u>	<u>939,000</u>
Property taxes	-	3,949	1,106	800	-
Inheritance and gift taxes	15,691	7,129	9,466	4,663	4,000
Licenses	84,231	85,216	91,310	98,594	107,000
Other:					
Lottery	65,387	64,638	62,729	65,508	63,000
Electronic lottery	86,115	68,011	55,212	72,253	60,000
Miscellaneous non-tax revenues	379,501	430,534	431,803 ⁽⁶⁾	321,154	331,000
Total Other	<u>531,003</u>	<u>563,183</u>	<u>549,744</u>	<u>458,915</u>	<u>454,000</u>
Total revenues from internal sources	<u>7,622,201</u>	<u>7,937,772</u>	<u>8,285,413</u>	<u>8,503,008</u>	<u>8,702,000</u>
Revenues from non-Commonwealth sources:					
Federal excise taxes ⁽¹⁾	328,921	341,166	346,272	372,536	361,000
Customs	34,266	26,731	9,553	14,503	14,000
Total revenues from non-Commonwealth sources	<u>363,187</u>	<u>367,897</u>	<u>355,825</u>	<u>387,039</u>	<u>375,000</u>
Total net revenues	<u>7,985,388</u>	<u>8,305,669</u>	<u>8,641,238</u>	<u>8,890,047</u>	<u>9,077,000</u>
Other Income (refunds) ⁽²⁾	62,789	(55,409)	76,085	(8,335)	150,000 ⁽⁸⁾
Transfers to Redemption Fund ⁽³⁾	(341,538)	(369,985)	(484,812)	(512,197)	(450,702)
Proceeds of notes and other borrowings ⁽⁴⁾	3,940,397	4,925,595	4,115,897 ⁽⁷⁾	1,872,096	2,300,000
Repayment of notes and other borrowings ⁽⁵⁾	(3,713,634)	(3,909,434)	(3,005,838)	(1,926,273)	(2,356,497)
Adjusted revenues	<u>7,933,402</u>	<u>8,896,436</u>	<u>9,342,570</u>	<u>8,315,338</u>	<u>8,719,801</u>
Expenditures:					
Grants and subsidies	3,468,531	3,617,386	3,944,349	3,387,199	2,262,516
Personal services	3,951,387	4,783,567	4,796,382	4,590,962	5,592,684
Other services	400,594	389,346	525,377	594,345	592,994
Materials and supplies	73,757	72,411	50,227	79,186	161,924
Equipment purchases	20,572	20,707	19,378	27,965	62,757
Capital outlays and other debt service	675	78,598	49,789	21,576	103,423
Transfers to agencies	-	-	-	92,770	-
Other disbursements	88,432	-	-	-	-
Total expenditures	<u>8,003,948</u>	<u>8,962,015</u>	<u>9,385,503</u>	<u>8,794,003</u>	<u>8,776,298</u>
Adjusted revenues less expenditures	<u>(70,546)</u>	<u>(65,579)</u>	<u>(42,933)</u>	<u>(478,665)</u>	<u>(56,497)</u>
Ending cash balance	<u>\$ 108,512</u>	<u>\$ 42,933</u>	<u>\$ 0</u>	<u>\$ (478,665)</u>	<u>\$ (535,162)</u>

(*) Preliminary.

(+) Estimated.

(1) Excludes transfers by the Commonwealth to the Conservation Trust Fund and amounts deposited by the Secretary of the Treasury into a separate account for the promotion of Puerto Rico rums in foreign markets.

(2) Consists of net revenues from the General Fund's non budgetary funds plus a reserve for future tax refunds reduced by estimated tax refunds.

(3) Consists of amounts to pay principal of and interest on general obligation bonds and notes of the Commonwealth. Does not include amounts deposited directly into the Redemption Fund from non-General Fund revenues.

(4) Consists of proceeds of borrowing from GDB and proceeds from Commonwealth's Tax and Revenue Anticipation Notes, including a \$741 million loan from GDB authorized by the Legislature in 2006.

(5) Consists of repayments of borrowing from GDB and repayments of Commonwealth's Tax and Revenue Anticipation Notes.

(6) Includes proceeds of \$100 million generated by the issuance of the Commonwealth's Public Improvement Refunding Bonds, Series 2006 A, which were privately placed.

(7) Includes \$50 million from the Emergency Fund used for operating expenses.

(8) Includes \$150 million related to the sale of properties.

Source: Department of the Treasury

Fiscal Year 2007

Preliminary collections for the fiscal year ended on June 30, 2007 totaled \$8.890 billion, \$7 million more than the Treasury Department's revised estimate for that period. This amount includes (i) \$933 million in non-resident withholding, (ii) \$1.123 billion in excise taxes, (iii) \$583 million of sales tax revenues, and (iv) \$269 million from special temporary tax measures.

General Fund expenses for fiscal year 2007 are currently projected to be \$9.221 billion, which is \$267 million below the amount initially budgeted and takes into consideration \$160 million in a portion of savings from the 10% budget reserve and \$107 million in health-related expenditure reductions. The \$9.221 billion amount does not include \$522 million of debt service payments on a portion of the Commonwealth's outstanding appropriation debt, which debt service was excluded from the budget based on the provisions of Act No. 91 of May 13, 2006, which created the Dedicated Sales Tax Fund to service in part the repayment of such appropriation debt.

The difference between projected revenues and expenses for fiscal year 2007 will be covered, if legislation is approved, by a \$240 million transfer of funds from Government Development Bank that was originally set aside from General Fund appropriations to cover a portion of debt service payments on the Commonwealth's appropriation debt which set aside is no longer needed on account of the passage of Act No. 91 referred to above. The remaining shortfall (about \$100 million) will be covered by cash management procedures such as delaying payments to certain vendors for a short period of time (carrying over into fiscal year 2008).

Fiscal Year 2006

General Fund total revenues for fiscal year 2006 were \$8.541 billion (approximately \$235 million, or 2.8%, more than received in fiscal year 2005). This increase was attributable to increases in income taxes (\$504 million, including \$309 million in taxes withheld from non-residents), together with decreases in external revenues (\$12 million), excise taxes (\$147 million), and miscellaneous non-tax revenues (\$113 million). The increase in revenues from individual income taxes is mainly attributable to administrative measures and economic activity. The increase in the withholding tax on non-residents includes two extraordinary payments amounting to \$200 million.

Total cash expenditures for fiscal year 2006 were \$9.596 billion (excluding about \$500 million in expenditures that occurred "off budget" for items such as refinanced debt service on general obligation debt and payment of vendor debts from prior years for Public Buildings Authority and subsidy and operational expenses of Agricultural Services and Development Administration) which exceeded original budgeted expenditures by \$651 million, attributed mainly to increases in the area of education (\$321 million), public safety and protection (\$99 million), health (\$207 million), and special contributions to pensions (\$42 million), and reductions in the area of general government (\$4 million), welfare (\$3 million), contributions to municipalities (\$1 million), and other debt service (\$10 million).

The approximately \$1.6 billion shortfall was covered by the release of \$64 million in reserve funds held at GDB, borrowings from GDB and other sources of about \$1.4 billion and about \$150 million of "cash management" practices which had the effect of delaying payment of certain expenses until the start of fiscal year 2007. Also, during a two-week period in early May 2006, the Commonwealth was forced to furlough non-essential government workers because it was projected to run out of cash until the above borrowings were implemented in the aftermath of the passage of fiscal and tax reform legislation described below in order to allow the workers to return to work.

Fiscal Year 2005

General Fund total net revenues for fiscal year 2005 were \$8.306 billion, representing an increase of \$320 million or 4%, from fiscal year 2004 net revenues. This amount excludes proceeds of a loan of \$550 million obtained from GDB, which is included as part of "Proceeds of notes and other borrowings." The major changes in revenues from fiscal year 2004 were: (i) increases in total income taxes of \$188 million, mainly resulting from increases in income taxes collected from individuals of \$165 million and in income taxes collected from corporations of \$40 million; (ii) increases in total excise taxes of \$99 million; and (iii) net increases in other revenues of \$32 million, mainly as a result of an increase in miscellaneous non-tax revenues of \$51 million.

Total cash expenditures for fiscal year 2005 were \$9.220 billion (excluding \$98.6 million covered with funds from the Budgetary Fund), which exceeded budgeted expenditures by \$366 million, attributed mainly to increases in the area of education (\$300.5 million), public safety and protection (\$18.6 million), health (\$28.7 million), welfare (\$10.2 million), and economic development (\$8 million). This amount also excludes approximately \$98.6 million of additional expenditures that were not originally budgeted. Various financing transactions were entered into to cover this imbalance.

Fiscal Year 2004

General Fund total net revenues for fiscal year 2004 were \$7.985 billion, representing an increase of \$394 million, or 5.2%, from fiscal year 2003 net revenues. This amount excludes proceeds of a loan of \$233 million obtained from GDB, which is included as part of "Proceeds of notes and other borrowings." This amount also excludes \$88 million of additional non-recurring revenues. The major changes in revenues from fiscal year 2003 were: (i) increases in total income taxes of \$377 million, mainly resulting from increases in income taxes from individuals of \$203 million and in income taxes withheld from non-residents of \$114 million; (ii) increases in total excise taxes of \$42 million; and (iii) decreases in other revenues of \$65 million, mainly as a result of a decrease in miscellaneous non-tax revenues of \$59 million. Approximately \$170 million of the increase in total income taxes for fiscal year 2004 relates to the collection of past taxes as a result of an incentives plan implemented by the Treasury.

Total cash expenditures for fiscal year 2004 were \$8.004 billion, which amount excludes certain amounts related to fiscal year 2004 but disbursed in fiscal year 2005. This amount also excludes approximately \$293 million of additional expenditures that were not originally budgeted and were covered with reserve funds (\$50 million), the reimbursement of certain federal education funds (\$141 million), and other sources. After considering (i) debt service payments (separately identified in the table as "Transfers to Redemption Fund"), (ii) \$227 million in net borrowings from GDB and other sources, and (iii) \$63 million in other income from the General Fund's non-budgetary funds, the ending cash balance of the General Fund decreased from \$179 million at the end of fiscal year 2003 to \$109 million at the end of fiscal year 2004.

Fiscal Year 2003

General Fund total revenues for fiscal year 2003 were \$7.592 billion, representing an increase of \$138 million, or 1.9%, from actual fiscal year 2002 revenues. This amount excludes proceeds of a loan of \$250 million obtained from GDB, which is included as part of "Proceeds of notes and other borrowings." The major changes from fiscal year 2002 were: (i) increases in income taxes from individuals of \$67 million and in corporate income taxes of \$71 million; (ii) increases in excise taxes on alcoholic beverages and cigarettes of \$83 million, and an increase in motor vehicles excise taxes of \$81 million; (iii) an increase in electronic lottery revenues of \$32 million; and (iv) a decrease in miscellaneous non-tax revenues of \$124 million and in income taxes withheld from non-residents of \$66 million. The decrease

in miscellaneous non-tax revenues relates to certain special administrative measures that had been implemented by the Secretary of the Treasury in fiscal year 2002 and that did not apply to fiscal year 2003.

Total cash expenditures for fiscal year 2003 were \$7.590 billion, which amount excludes certain amounts related to fiscal year 2003 but disbursed in fiscal year 2004. This amount also excludes \$150 million of additional expenditures that were not originally budgeted and were covered with reserve funds, federal fiscal relief funds and other sources. The principal reason for these higher expenditures was higher than anticipated education costs. After considering (i) \$332 million in debt service payments (separately identified on the table as “Transfers to Redemption Fund”), (ii) \$238 million in net borrowings from GDB (which includes the \$250 million loan mentioned above) and other sources, and (iii) \$79 million in reserve for future tax refunds reduced by estimated tax refunds (separately identified on the table as “Other Income (refunds)”), the ending cash balance of the General Fund was reduced from \$350 million at the end of fiscal year 2002 to \$179 million at the end of fiscal year 2003.

Tax Reform

Act No. 117 of July 4, 2006 (“Act 117”) amended the Puerto Rico Internal Revenue Code of 1994 (the “PR Code”) to provide, among other things, for a general sale and use tax of 5.5% to be imposed by the central government (the “Central Government Sales Tax”). Act 117 also authorized each municipal government to impose a municipal sale and use tax of 1.5% (the “Municipal Sales Tax” and, together with the Central Government Sales Tax, the “Sales Tax”). In general, the Municipal Sales Tax has the same tax base, exemptions (except for unprocessed foods) and limitations as those provided for the Central Government Sales Tax. Act 117 also provides certain income tax reductions to address the regressive effect of the Sales Tax on taxpayers in lower income tax brackets.

The Sales Tax is imposed on the sale, use, consumption and storage of taxable items, which include tangible personal property, taxable services, admission rights and certain other types of transactions covering separable and identifiable taxable items which are sold for a single price, subject to certain exceptions and limitations. The Sales Tax will not be imposed on, among other things: (i) taxable items acquired by merchants for resale, (ii) taxable items acquired by manufacturing plants, (iii) taxable items acquired for use and consumption outside of Puerto Rico, (iv) certain food products that do not need to be heated before their sale, (v) prescription drugs, (vi) the rental payments received by a lessor of real property which is used for residential or commercial purposes, (vii) services provided by designated professionals, (viii) cash, cash equivalents, stocks, bonds, notes, mortgage loans, insurance, securities and interest derived for the use or forbearance of money, (ix) sales of real property, and (x) leases in which the Industrial Development Company is the owner of the property.

Act 117 also repealed the 5% general excise tax imposed on imported goods and the 3.6% general excise tax imposed on goods manufactured in Puerto Rico. Other items, such as fuel, crude oil and petroleum products, and vehicles, however, will remain subject to the excise tax previously applicable to such items, and are not subject to the Sales Tax.

The Sales Tax became effective on November 15, 2006 and the effective date of the repeal of the 5% general excise tax was October 16, 2006. Municipalities were authorized to implement the Municipal Sales Tax starting on July 1, 2006, and most have done so. The revenues derived from the Sales Tax will be distributed as follows: (i) municipal governments will retain 13/15 of the Municipal Sales Tax (equivalent to a tax of 1.3% out of the total 7% Sales Tax), (ii) the Dedicated Sales Tax Fund, created by Act No. 91 of May 13, 2006, as amended, will receive one-seventh of the Sales Tax (equivalent to a tax of 1% out of the total 7% Sales Tax), and (iii) the General Fund will receive the balance of the Sales Tax (equivalent to a tax of 4.7% out of the total 7% Sales Tax). The Secretary of the Treasury projects for

fiscal year 2008 that each percentage point of the Sales Tax will generate annually approximately \$202 million of gross revenues and that the Sales Tax will generate total annual gross revenues for the General Fund of approximately \$911 million. For fiscal year 2007, the corresponding projections are \$191 million and \$576 million. The increase in revenues to be generated by the Sales Tax will be partly offset by the elimination of the 5% general excise tax and the effect of the income tax reduction measures included in Act 117.

Act 117 also provided for special income tax rates with respect to certain transactions occurring on and between July 1, 2006 and December 31, 2006 (the “Transition Period”). Eligible dividends declared by domestic corporations or partnerships during the Transition Period will qualify for a 5% special income tax. The dividend does not need to be distributed to qualify for the 5% special income tax rate. During the Transition Period, Act 117 also provides a special tax rate of 5% (10% in the case of resident corporations and partnerships) in connection with “built-in” gains associated to capital assets held for periods in excess of six months (the “Special Capital Gains Tax”). In order to take advantage of the Special Capital Gains Tax, a taxpayer must file an election with the Secretary of the Treasury. The sale of the capital asset is not required to qualify for the Special Capital Gains Tax. In addition to the other conditions mentioned herein, the Special Capital Gains Tax is only available in connection with capital assets consisting of stock or participations of domestic and foreign corporations and partnerships, and real property located in Puerto Rico. However, in the case of resident corporations and partnerships, the Special Capital Gains Tax applies only to real property located in Puerto Rico.

For a discussion of the budget imbalance in fiscal year 2007 and the revenues generated through March 31, 2007 from the provisions of Act 117, see “Fiscal Year 2007” under “Summary and Management’s Discussion of General Fund Results” above.

Major Sources of General Fund Revenues

Income Taxes

The Commonwealth’s income tax law, the Internal Revenue Code of 1994, as amended (the “P.R. Code”), imposes a tax on the income of individual residents of Puerto Rico, trusts, estates, and domestic and foreign (if engaged in a trade or business in Puerto Rico) corporations and partnerships at graduated rates. A flat tax is imposed on certain payments made to non-residents of Puerto Rico, which is collected through an income tax withholding.

Individuals. Resident individuals are subject to tax on their taxable income from all sources. The P.R. Code has five tax brackets for individuals with tax rates of 7%, 10%, 15%, 28%, and 33%. Dividend income from Puerto Rico corporations and certain qualifying foreign corporations is taxed at a rate of 10%.

Gain realized from the sale or exchange of a capital asset by resident individuals, if held for more than six months, is taxed at a rate of 12.5%.

Interest income in excess of \$2,000 on deposit with Puerto Rico financial institutions is taxed at a rate of 17%; the first \$2,000 of interest income from such institutions is exempt from taxation. Interest income on certain qualifying debt obligations issued by Puerto Rico corporations and certain qualifying foreign corporations and paid to resident individuals, trusts, estates, corporations and partnerships qualifies for a special 10% tax rate.

Corporations and Partnerships. Puerto Rico corporations and partnerships are subject to tax on income from all sources; foreign corporations and partnerships that are engaged in a trade or business in

Puerto Rico are subject to tax on their income from Puerto Rico sources and on income from sources outside Puerto Rico that is effectively connected with the conduct of their trade or business in Puerto Rico. Unless a corporation or partnership qualifies for partial exemption from corporate income and other taxes under the industrial incentives program (see “Tax Incentives” under *The Economy* above), it is subject to tax at graduated rates.

In general, the P.R. Code provides for six income tax brackets for corporations and partnerships, with the highest rate (39%) applicable to net taxable income in excess of \$300,000. Also, Act No. 41 of August 1, 2005 was enacted to impose a temporary additional tax of 2.5% on corporations and partnerships with a net taxable income of \$20,000 or more. In addition, Act No. 98 of May 16, 2006, provides for an extraordinary tax of 5% on resident corporations and partnerships engaged in business for pecuniary profit and whose gross income for the immediately preceding taxable year ended on or prior to December 31, 2005 exceed \$10 million. The 5% tax must be paid on or prior to July 31, 2006 and such amount may be subsequently claimed as a tax credit against such entity’s income tax liability. Act No. 89 of May 13, 2006 also imposes an additional special tax for the taxable year commencing in 2006 of 2% on the net income subject to standard taxation of all corporations operating under the provisions of the Puerto Rico Banking Law.

Gains realized from the sale or exchange of a capital asset, if held for more than six months, are taxed at a maximum rate of 20%. Dividends received by Puerto Rico corporations and partnerships of foreign corporations and partnerships engaged in trade or business in Puerto Rico are subject to general income tax rates. A dividends received credit may be available when the corporation or partnership making the distribution is organized in Puerto Rico. A special tax rate of 17% is applicable to dividend distributions of REITs received by corporations. Interest income on certain qualifying debt obligations issued by Puerto Rico corporations and certain qualifying foreign corporations and paid to resident corporations and partnerships qualifies for a special tax rate of 10%.

In general, corporations and partnerships operating under a new grant of tax exemption issued under the 1998 Tax Incentives Act are subject to a maximum income tax rate of 7% during their basic exemption period. Certain corporations and partnerships covered by the tax incentives acts continue to be subject to a maximum tax rate of 45% on their taxable income. Corporations and partnerships covered by the Puerto Rico Tourism Incentives Act of 1993, as amended, are subject to a maximum tax rate of 42% on their taxable income. The P.R. Code also provides for an alternative minimum tax of 22%.

The P.R. Code imposes a branch profits tax on resident foreign corporations less than 80% of whose gross income qualifies as income effectively connected with a Puerto Rico trade or business. The branch profits tax is 10% of an annual dividend equivalent amount, and it applies without regard to the Puerto Rico source of income rules.

Interest from Puerto Rico sources paid to non-resident non-affiliated corporate recipients is not subject to any income or withholding tax. Interest paid to certain related non-resident recipients is subject to a withholding tax of 29%. Dividends paid to non-resident corporate recipients are subject to a withholding tax of 15%. Dividends distributed by corporations (including Section 936 Corporations) operating under new grants of tax exemption issued under the 1998 Tax Incentives Act are not subject to Puerto Rico income tax. However, royalty payments made by such corporations to non-resident recipients are subject to a 15% withholding tax. The basic tax on dividends paid to foreign corporate shareholders of Section 936 Corporations operating under grants of tax exemption issued under prior incentives laws is 10% but is subject to reduction if a percentage of the profits are invested in certain eligible instruments for specified periods of time.

Subject to certain exceptions, payments in excess of \$1,500 during a calendar year made by the Commonwealth and persons engaged in a trade or business in Puerto Rico in consideration of the receipt of services rendered in Puerto Rico are subject to a 7% withholding tax.

Sales and Use Taxes

The Sales Tax is imposed on the sale, use, consumption and storage of taxable items, which include tangible personal property, taxable services, admission rights and combined transactions, subject to certain exceptions and limitations. The Sales Tax will not be imposed on, among other things: (i) taxable items acquired by merchants for resale, (ii) taxable items acquired by manufacturing plants, (iii) taxable items acquired for use and consumption outside of Puerto Rico, (iv) certain food products that do not need to be heated before their sale, (v) prescription drugs, (vi) the rental payments received by a lessor of real property which is used for residential or commercial purposes, (vii) services provided by designated professionals, (viii) cash, cash equivalents, stocks, bonds, notes, mortgage loans, insurance, securities and interest derived for the use or forbearance of money, (ix) sales of real property, and (x) leases in which the Industrial Development Company is the owner of the property. The Sales Tax was effective starting on November 15, 2006 and is projected to generate for the General Fund approximately \$911 million for fiscal year 2008 and approximately \$576 million for fiscal year 2007.

Excise Taxes

The P.R. Code imposes an excise tax on certain articles and commodities, such as cigarettes, alcohol, sugar, cement, motor vehicles and certain petroleum products, which are taxed at different rates. The excise tax imposed on articles and commodities imported into Puerto Rico for consumption in Puerto Rico ended on October 16, 2006 and has been replaced by the previously described sales and use tax on November 15, 2006.

Other Taxes and Revenues

Motor vehicle license plate and registration fees comprise the major portion of license tax receipts. Recent legislation was enacted to increase license fees on luxury vehicles.

Non-tax revenues consist principally of lottery proceeds, documentary stamps, permits, fees and forfeits, proceeds of land sales and receipts from public corporations in lieu of taxes.

Revenues from non-Commonwealth sources include customs duties collected in Puerto Rico and excise taxes on shipments of rum from the island to the United States mainland. The customs duties and excise taxes on shipments are imposed and collected by the United States and returned to the Commonwealth. The excise tax on shipments of rum from Puerto Rico and other rum producing countries is \$13.50 per gallon. Of this amount, the lesser of \$13.25 per proof gallon and the actual excise tax imposed is currently returned to the Treasury through December 31, 2007.

Property Taxes

Personal property, which accounts for approximately 48% of total collections of taxable property, is self-assessed. Real property taxes are assessed based on 1958 property values. No real property reassessment has been made since 1958, and construction taking place after that year has been assessed on the basis of what the value of the property would have been in 1958. Accordingly, the overall assessed valuation of real property for taxation purposes is substantially lower than the actual market value. Also, an exemption on the first \$15,000 of assessed valuation in owner-occupied residences is available.

Property taxes are assessed, determined and collected for the benefit of the municipalities by the Municipal Revenues Collection Center (“CRIM”), a government instrumentality of the Commonwealth. However, a special 1.03% tax on the assessed value of all property (other than exempted property) imposed by the Commonwealth for purposes of paying the Commonwealth’s general obligation debt is deposited in the Commonwealth’s Redemption Fund.

The following table presents the assessed valuations and real and personal property taxes collected for fiscal years ending June 30, 2003 through June 30, 2007.

Commonwealth of Puerto Rico
Assessed Valuations and Real and Personal Property Taxes
(Commonwealth and Municipalities Combined)
(in thousands)

Fiscal Years Ended June 30,	Assessed Valuations⁽¹⁾	Taxes Levied	Collections of Current Year	Collections of Previous Years	Total Collections⁽²⁾
2003	\$23,138,903	\$824,933	\$671,163	\$79,421	\$750,584
2004	23,540,237	836,734	706,677	79,772	786,449
2005	25,277,795	899,893	738,074	50,751	788,825
2006	25,606,121	925,618	801,497	70,908	872,405
2007	26,898,928	982,400	813,700	79,720	893,420

(1) Valuation set as of July 1 of each fiscal year.

(2) During fiscal year 2004 a property tax amnesty was approved by the Legislative Assembly and implemented by CRIM. In addition to the amounts shown, under the amnesty program a total of \$105.3 million was collected in fiscal year 2004 and \$21.1 million in fiscal year 2005.

Source: Municipal Revenues Collection Center

Collections of Income, Sales and Excise Taxes

The Treasury has continued its program for improving tax collections. The program consists, in part, of taking the initiative in sponsoring and implementing tax reform, particularly in the areas of excise taxes and income taxes, in order to decrease the incidences of nonpayment of taxes and to expand the taxpayer base. The program has also included (i) improving the methods by which delinquent taxpayers are identified, primarily through the use of computer analyses, (ii) computerizing the processing of tax returns, and (iii) identifying and eliminating taxpayer evasion. With the elimination of the general excise tax last October, Treasury excise tax personnel have been reassigned to monitor compliance with the new sales tax.

Transfers to General Obligation Redemption Fund

These consist of transfers from the General Fund to the Redemption Fund for the amortization of the principal of and interest on general obligation bonds and notes of the Commonwealth.

Components of General Fund Expenditures

Grants and Subsidies

This category includes grants and contributions to municipalities, public corporations with independent treasuries, and charitable institutions. It also includes items for or included in court awards, damage awards for personal injury or property damage, and payment of taxes and payments in lieu of taxes.

Personal Services

This category includes compensation paid for personal services rendered to the Commonwealth and its public instrumentalities by individuals or firms in the form of salaries, wages, *per diems*, fees, commissions, or other forms of compensation.

Other Services

This category includes compensation for services other than the services referred to above, including advertising, printing, communications, legal expenses, utilities, building and equipment rental and maintenance expenses, insurance premiums and miscellaneous services.

Materials and Supplies

This category includes all articles that ordinarily have a short life and durability, lose their characteristic identity in the process of use, have only nominal value (\$25 or less), or are not otherwise chargeable as equipment.

Equipment Purchases

This category includes items that have three special characteristics distinguishing them from materials: durability, long useful life, and high unit cost. In addition, these items are subject to centralized inventory control as fixed assets.

Capital Outlays and Other Debt Service

Capital outlays are made primarily for land acquisition or interests in land, construction of buildings, roads, bridges and other structures, and permanent improvements and additions. Other debt service includes payments on notes held by GDB to be paid from the General Fund and payments for the amortization of the principal of and interest on non-general obligations payable from Commonwealth appropriations.

Transfers to Agencies

These transfers include the repayment of loans and advances to other funds, certain refunds, advances from other funds and other receipts, repayment of advances from other funds, grants and contributions to other funds under the custody of the Secretary of the Treasury and other items. The major portion of grants and contributions in recent fiscal years has consisted of transfers to cover the costs of health reform and advances to the municipalities.

Other Expenditures

This category represents recurring General Fund expenditures not appropriately attributable to other expenditure line items, such as advances to government agencies and municipalities, which advances are to be reimbursed to the General Fund by law.

Federal Grants

Puerto Rico receives grants under numerous federal programs. Federal grants to the agencies and instrumentalities of the Commonwealth government, including public corporations, are estimated to be \$4.047 billion for fiscal year 2007, a decrease of \$8.6 million, or 0.2%, from fiscal year 2006. The

following table presents revenues from federal grants by broad program areas, which are accounted in the central accounting system of the Treasury. The figures for fiscal years 2004 through 2006 are actual figures. The figures for fiscal year 2007 are estimates based on the information submitted by each agency to OMB and the figures for fiscal year 2008 are the amounts included in the recommended budget.

Commonwealth of Puerto Rico					
Federal Grants					
(in thousands)					
	2004	2005	2006	2007⁽¹⁾	2008⁽⁴⁾
Education	\$ 1,081,236	\$ 963,032	\$ 1,042,023	\$ 991,218	\$ 954,054
Social Services	1,792,203	1,884,737	1,888,215	1,916,162	1,949,621
Health	444,348	383,635	394,945	397,702	400,390
Labor and Human Resources ⁽²⁾	204,679	218,280	197,296	211,907	162,085
Crime	37,988	29,313	41,461	28,417	28,417
Housing ⁽³⁾	366,408	505,856	371,104	391,541	428,821
Drug and Justice	31,349	6,941	38,459	33,083	22,189
Agriculture and Natural Resources	10,378	1,117	11,402	12,477	9,969
Contributions to Municipalities	59,002	64,293	53,744	48,531	47,882
Other	39,879	30,896	17,608	16,584	17,163
TOTAL	\$ 4,067,470	\$ 4,088,100	\$ 4,056,257	\$ 4,047,622	\$ 4,020,591

(1) Estimated.

(2) Amounts include grants to the Right to Work Administration and the Occupational Development and Human Resources Council.

(3) Amounts include grants to the Public Housing Administration.

(4) Recommended.

Source: Office of Management and Budget

BUDGET OF THE COMMONWEALTH OF PUERTO RICO

Office of Management and Budget

OMB's predominant mission is to assist the Governor in overseeing the preparation of the budget of the Commonwealth and supervise its administration in the agencies of the Executive Branch. In helping to formulate the Governor's budget, OMB evaluates the effectiveness of agency programs, policies, and procedures, assesses competing funding demands among agencies, and sets funding priorities.

In addition, OMB oversees and coordinates the Administration's initiatives in financial management, information technology, general management and organizational structure, and supervises the agencies' compliance with the Governor's program and regulatory policies. In each of these areas, OMB's role is to help improve administrative management, develop better performance measures and coordinating mechanisms, and promote efficiency in the use of public funds.

Budgetary Process

The fiscal year of the Commonwealth begins each July 1. The Governor is constitutionally required to submit to the Legislative Assembly an annual balanced budget of revenues, capital improvements, and operating expenses of the central government for the ensuing fiscal year. The annual budget is prepared by OMB, in coordination with the Planning Board, the Treasury, and other government offices and agencies. Section 7 of Article VI of the Constitution provides that "The appropriations made for any fiscal year shall not exceed the total revenues, including available surplus,

estimated for said fiscal year unless the imposition of taxes sufficient to cover said appropriations is provided by law.”

The annual budget, which is developed utilizing elements of program budgeting, includes an estimate of revenues and other resources for the ensuing fiscal year under (i) laws existing at the time the budget is submitted, and (ii) legislative measures proposed by the Governor and submitted with the proposed budget, as well as the Governor’s recommendations as to appropriations that in his judgment are necessary, convenient, and in conformity with the four-year investment plan prepared by the Planning Board.

The Legislative Assembly may amend the budget submitted by the Governor but may not increase any items so as to cause a deficit without imposing taxes to cover such deficit. Upon passage by the Legislative Assembly, the budget is referred to the Governor, who may decrease or eliminate any item but may not increase or insert any new item in the budget. The Governor may also veto the budget in its entirety and return it to the Legislative Assembly with the Governor’s objections. The Legislative Assembly, by a two-thirds majority in each house, may override the Governor’s veto. If a budget is not adopted prior to the succeeding fiscal year, as was the case for fiscal year 2006, the annual budget for the preceding fiscal year as originally approved by the Legislative Assembly and the Governor is automatically renewed for the ensuing fiscal year until a new budget is approved by the Legislative Assembly and the Governor. This permits the Commonwealth to continue making payments of its operating and other expenses until a new budget is approved.

Fiscal Reform

On May 25, 2006, the Governor signed Act No. 103 providing for a fiscal reform of the Commonwealth government (the “Fiscal Reform Legislation”). The Fiscal Reform Legislation applies to every instrumentality and entity of the Executive Branch funded, in whole or in part, from the General Fund and sets forth, as the public policy of the Commonwealth, the reduction of government spending, the elimination or consolidation of redundant agencies, the reduction of government payroll without causing the layoff of regular employees or increasing the actuarial liability of the retirement systems, the limitation of unnecessary, extravagant or excessive spending, and the limitation of public relations and other similar expenses. Despite his approval of the Fiscal Reform Legislation, the Governor has stated that certain of its provisions may be unconstitutional because they infringe on Executive Branch prerogatives. As such, the Governor has informed the Legislative Assembly that certain provisions of the Fiscal Reform Legislation will be implemented at the Executive Branch’s discretion and through the use of the Executive Branch’s prerogatives. There is no assurance that the Fiscal Reform Legislation will result in the intended reduction of expenditures or that it will be implemented as enacted or that it will not be judicially challenged.

Financial Control and Adjustment Procedures

Revenue estimates for budgetary purposes are prepared by the Treasury, except for estimates of federal grants, which are prepared by OMB based on information received from the various departments and other recipients of such grants. Revenue and federal grant estimates are under continuous review and, if necessary, are revised at least quarterly during the fiscal year. Fiscal control over expenditures is exercised by the Governor, through the Director of OMB, and the Secretary of the Treasury. Monthly reviews and expenditure cut-off procedures are followed to prevent expenditures in excess of appropriations.

During any fiscal year in which the resources available to the Commonwealth are insufficient to cover the appropriations approved for such year, the Governor may take administrative measures to

reduce expenses and submit to both houses of the Legislative Assembly a detailed report of any adjustment necessary to balance the budget, or make recommendations to the Legislative Assembly for new taxes or authorize borrowings under provisions of existing legislation or take any other necessary action to meet the estimated deficiency. Any such proposed adjustments shall give effect to the “priority norms” established by law for the disbursement of public funds in the following order of priority; first, the payment of the interest on and amortization requirements for public debt (Commonwealth general obligations and guaranteed debt for which the Commonwealth’s guarantee has been exercised); second, the fulfillment of obligations arising out of legally binding contracts, court decisions on eminent domain, and other unavoidable obligations to protect the name, credit and good faith of the Commonwealth; third, current expenditures in the areas of health, protection of persons and property, education, welfare and retirement systems; and fourth, all other purposes.

A Budgetary Fund was created by Act No. 147 of June 18, 1980, as amended (the “Budgetary Fund”), to cover the appropriations approved in any fiscal year in which the revenues available for such fiscal year are insufficient, to secure the payment of public debt, and to provide for unforeseen circumstances in the provision of public service. Currently, an amount equal to one percent of the General Fund net revenues of the preceding fiscal year is deposited annually into the Fund. In addition, other income (not classified as revenues) that is not assigned by law to a specific purpose is also required to be deposited in the Budgetary Fund. The maximum balance of the Budgetary Fund may not exceed 6% of the total appropriations included in the budget for the preceding fiscal year. As of June 30, 2007, the Budgetary Fund balance was \$300,000.

An Emergency Fund was created by Act No. 91 of June 21, 1966, as amended (the “Emergency Fund”), to cover unexpected public needs caused by calamities, such as wars, hurricanes, earthquakes, droughts, floods and plagues, and to protect people’s lives and property and the public sector credit. The Emergency Fund is capitalized annually with an amount totaling no less than one percent of the General Fund net revenues of the preceding fiscal year. Act No. 91 was amended in 2003 to set an upper limit to the Emergency Fund of \$150 million at the beginning of the fiscal year and was further amended in 2005 to authorize the disbursement of funds from the Emergency Fund to cover certain General Fund expenditures and operational costs of the State Emergency Management Agency. The 2005 amendment also authorizes GDB to lend to the Commonwealth up to \$150 million to replenish the Emergency Fund to provide funding for emergency and disaster needs. As of June 30, 2007, the balance in the Emergency Fund was less than \$1 million.

Appropriations

Appropriations in the central government budget of Puerto Rico consist of the following:

(i) General Fund appropriations for recurring ordinary operating expenses of the central government and of the Legislative Assembly are made by a single annual law known as the Joint Resolution of the General Budget.

(ii) General Fund appropriations for special operating expenses, for contributions to municipalities, the University of Puerto Rico and the Judiciary Branch and for capital expenditures are authorized by separate law for one or more years for special programs or activities, which may be permanent or transitory.

(iii) Disbursements of Special Funds for operating purposes and for capital improvements. For the most part, such disbursements do not require annual legislative authorization, because they are authorized by previous legislation or by the United States Congress. Federal grants constitute the major part of the resources of the Special Funds.

(iv) Bond Fund appropriations for capital expenditures financed by bonds. Such expenditures occur in one or more years.

In Puerto Rico, the central government performs many functions, which in the fifty states are the responsibility of local governments, such as providing public education, police and fire protection. The central government also provides significant annual grants to the University of Puerto Rico and to the municipalities.

For fiscal year 2006, approximately 53% of the General Fund was committed for payment of the central government payroll. In addition, approximately 25% of the General Fund was committed to the payment of fixed charges such as municipal subsidies, grants to the University of Puerto Rico, funding for the judicial branch, deposits to the Budgetary and Emergency Funds, among others, and debt service on the direct debt of the Commonwealth. For fiscal year 2007, it is proposed that approximately 56% and 6% of the General Fund be committed for payment of the central government payroll and debt service on the direct debt of the Commonwealth, respectively. Commencing with fiscal year 2004, the Commonwealth appropriates annually to the judicial branch an amount initially equal to 3.3% of the average annual revenue from internal sources for each of the two preceding fiscal years. This percentage will increase until it reaches 4% in fiscal year 2008, and may be further increased upon review, with scheduled reviews every five years.

Budget for Fiscal Year 2007

The consolidated budget for fiscal year 2007 totals \$26.5 billion. Of this amount, \$14.3 billion is assigned to the central government. This includes General Fund total resources and appropriations of \$9.488 billion, which represents a decrease of \$108 million over actual expenditures for fiscal year 2006. The following table presents a summary of the Commonwealth's proposed central government budget appropriations for the fiscal year ending June 30, 2007.

Commonwealth of Puerto Rico
Summary of Central Government Annual Budget
Fiscal Year Ending June 30, 2007
(in thousands)*

	<u>General Fund</u>	<u>Bond Fund</u>	<u>Special Funds</u>	<u>Total</u>
Revenues from internal sources:				
Property taxes	-	-	\$ 119,121	\$ 119,121
Personal income taxes	\$ 3,042,000	-	-	3,042,000
Retained non-resident income tax	871,000	-	-	871,000
Corporate income taxes	1,964,000	-	-	1,964,000
Partnership income taxes	3,000	-	-	3,000
Tollgate taxes	15,000	-	-	15,000
17% withholding tax on interest	13,000	-	-	13,000
10% withholding tax on dividends	66,000	-	-	66,000
Inheritance and gift taxes	4,000	-	-	4,000
Excise taxes:				
Alcoholic beverages	283,000	-	-	283,000
Motor vehicles and accessories	415,000	-	-	415,000
Cigarettes	136,000	-	-	136,000
Sales tax	576,000	-	-	576,000
Other (excise taxes)	318,000	-	37,385	355,385
Licenses	97,000	-	-	97,000
Miscellaneous non-tax revenues:				
Contributions from lottery fund	63,000	-	-	63,000
Electronic lottery	58,000	-	-	58,000
Registration and document certification fees	214,000	-	-	214,000
Other	105,000	-	323,145	428,145
Total revenues from internal sources	<u>8,243,000</u>	<u>-</u>	<u>479,651</u>	<u>8,722,651</u>
Revenues from non-Commonwealth sources:				
Federal excise taxes on off-shore shipments	361,000	-	-	361,000
Federal grants	-	-	4,039,107	4,039,107
Customs	15,000	-	-	15,000
Total revenues from non-Commonwealth sources	<u>376,000</u>	<u>-</u>	<u>4,039,107</u>	<u>4,415,107</u>
Total revenues	<u>8,619,000</u>	<u>-</u>	<u>4,518,758</u>	<u>13,137,758</u>
Other:				
Other Income	506,000	-	-	506,000
Balance from previous year	-	-	735,095	735,095
Bonds authorized	-	-	-	-
Total other sources	<u>506,000</u>	<u>-</u>	<u>735,095</u>	<u>1,241,095</u>
Total resources	<u>9,125,000</u>	<u>-</u>	<u>5,253,853</u>	<u>14,378,853</u>
Appropriations:				
Current expenses:				
General government	\$ 830,243	-	\$ 58,823	\$ 889,066
Education	3,382,053	-	1,234,632	4,616,685
Health	1,513,697	-	446,357	1,960,054
Welfare	487,296	-	2,191,475	2,678,771
Economic development	212,442	-	70,723	283,165
Public safety and protection	1,669,803	-	90,733	1,760,536
Transportation and communication	84,940	-	58,343	143,283
Housing	26,139	-	246,693	272,832
Contributions to municipalities	387,120	-	1,781	388,901
Special pension contributions	272,000	-	-	272,000
Debt service	512,197	-	119,121	631,318
Other debt service (appropriations)	97,570	-	56,100	153,670
Total appropriations – current expenses	<u>9,475,500</u>	<u>-</u>	<u>4,574,781</u>	<u>14,050,281</u>
Capital improvements	12,500	-	197,230	209,730
Total appropriations	<u>9,488,000</u>	<u>-</u>	<u>4,772,011</u>	<u>14,260,011</u>
Year-end balance	(363,000)	-	481,842	118,842
Total appropriations and year-end balance	<u>\$ 9,125,000</u>	<u>-</u>	<u>\$ 5,253,853</u>	<u>\$ 14,378,853</u>

* Totals may not add due to rounding.

- (1) Does not include grants received by agencies whose accounting systems are not centralized in the Treasury.
- (2) Act No. 93 of August 20, 1997 establishes that resources that do not represent revenues become part of the Budgetary Fund.

Sources: Department of the Treasury and Office of Management and Budget

Projected expenses and capital improvements of all budgetary funds total \$14.3 billion, a decrease of approximately \$1.3 billion from fiscal year 2006. The major changes in General Fund expenditures by program in fiscal year 2007 are mainly due to increases in welfare (up \$57.7 million), Transportation and Communication (up \$11.6 million), economic development (up \$24.8 million), public safety and protection (up \$36.1 million), debt service on Commonwealth's general obligation and guaranteed debt (up \$400.7 million), and decreases in housing (down \$70.4 million), health (down \$216.9 million), education (down \$126 million), and other debt service, consisting principally of Commonwealth appropriation debt (down \$488.4 million). The budget for fiscal year 2007 excludes approximately \$522 million of debt service payments. Of this amount, GDB advanced and, on July 15, 2006, deposited with the trustee \$303 million corresponding to debt service of the Public Finance Corporation. Additional debt service requirements for fiscal year 2007 will be covered with amounts to be deposited in the Dedicated Sales Tax Fund. Amounts not covered by the Dedicated Sales Tax Fund, if any, would have to be covered by additional legislative appropriations from the Commonwealth's General Fund. For a discussion of the Dedicated Sales Tax Fund, see "Tax Reform" under *Puerto Rico Taxes, Other Revenues, and Expenditures* above.

The Commonwealth has authorized the issuance of \$500 million of general obligation bonds for fiscal year 2007.

Budget for Fiscal Year 2008

The consolidated budget for fiscal year 2008 totals \$26.7 billion. Of this amount, \$14.1 billion is assigned to the central government. This includes General Fund total resources and appropriations of \$9.227 billion, which represents a decrease of \$261 million over approved expenditures for fiscal year 2007. The following table presents a summary of the Commonwealth's proposed central government budget appropriations for the fiscal year ending June 30, 2008.

Commonwealth of Puerto Rico
Summary of Central Government Annual Budget
Fiscal Year Ending June 30, 2008
(in thousands)*

	<u>General Fund</u>	<u>Bond Fund</u>	<u>Special Funds</u>	<u>Total</u>
Revenues from internal sources:				
Property taxes	-	-	\$ 119,716	\$ 119,716
Personal income taxes	\$ 3,067,000	-	-	3,067,000
Retained non-resident income tax	1,206,000	-	-	1,206,000
Corporate income taxes	1,922,000	-	-	1,922,000
Partnership income taxes	3,000	-	-	3,000
Tollgate taxes	10,000	-	-	10,000
17% withholding tax on interest	13,000	-	-	13,000
10% withholding tax on dividends	66,000	-	-	66,000
Inheritance and gift taxes	4,000	-	-	4,000
Excise taxes:				
Alcoholic beverages	288,000	-	-	288,000
Motor vehicles and accessories	429,000	-	-	429,000
Cigarettes	128,000	-	-	128,000
Sales tax	911,000	-	-	911,000
Other (excise taxes)	94,000	-	36,000	130,300
Licenses	107,000	-	-	107,000
Miscellaneous non-tax revenues:				
Contributions from lottery fund	63,000	-	-	63,000
Electronic lottery	60,000	-	-	60,000
Registration and document certification fees	221,000	-	-	221,000
Other	110,000	-	341,723	451,723
Total revenues from internal sources	<u>8,702,000</u>	<u>-</u>	<u>497,739</u>	<u>9,199,739</u>
Revenues from non-Commonwealth sources:				
Federal excise taxes on off-shore shipments	361,000	-	-	361,000
Federal grants	-	-	4,020,591	4,020,591
Customs	14,000	-	-	14,000
Total revenues from non-Commonwealth sources	<u>375,000</u>	<u>-</u>	<u>4,020,591</u>	<u>4,395,591</u>
Total revenues	<u>9,077,000</u>	<u>-</u>	<u>4,518,330</u>	<u>13,595,330</u>
Other:				
Other Income	-	-	-	-
Balance from previous year	150,000	-	481,842	631,842
Bonds authorized	-	-	-	-
Total other sources	<u>150,000</u>	<u>-</u>	<u>481,842</u>	<u>631,842</u>
Total resources	<u>9,227,000</u>	<u>-</u>	<u>5,000,172</u>	<u>14,227,172</u>
Appropriations:				
Current expenses:				
General government	\$ 826,435	-	\$ 58,934	\$ 885,369
Education	3,339,534	-	1,267,173	4,606,707
Health	1,480,300	-	453,373	1,933,673
Welfare	365,041	-	2,231,433	2,596,474
Economic development	187,576	-	81,980	269,556
Public safety and protection	1,692,498	-	91,011	1,783,509
Transportation and communication	86,440	-	60,800	147,240
Housing	26,139	-	251,188	277,327
Contributions to municipalities	360,779	-	1,781	362,560
Special pension contributions	296,132	-	-	296,132
Debt service	450,702	-	119,716	570,418
Other debt service (appropriations)	103,424	-	56,376	159,800
Total appropriations – current expenses	<u>9,215,000</u>	<u>-</u>	<u>4,673,765</u>	<u>13,888,765</u>
Capital improvements	12,000	-	191,017	203,017
Total appropriations	<u>9,227,000</u>	<u>-</u>	<u>4,864,782</u>	<u>14,091,782</u>
Year-end balance	-	-	135,390	135,390
Total appropriations and year-end balance	<u>\$ 9,227,000</u>	<u>-</u>	<u>\$ 5,000,172</u>	<u>\$ 14,227,172</u>

* Totals may not add due to rounding.

- (1) Does not include grants received by agencies whose accounting systems are not centralized in the Treasury.
- (2) Act No. 93 of August 20, 1997 establishes that resources that do not represent revenues become part of the Budgetary Fund.

Sources: Department of the Treasury and Office of Management and Budget

Projected expenses and capital improvements of all budgetary funds total \$14.1 billion, a decrease of approximately \$0.2 billion from fiscal year 2007. The major changes in General Fund expenditures by program in fiscal year 2008 are mainly due to increases in special pension contribution (up \$24.1 million), public safety and protection (up \$22.7 million), transportation and communication (up \$1.5 million), and other debt service (up \$5.9 million), and decreases in welfare (down \$122.3 million), debt service on Commonwealth's general obligation and guaranteed debt (down \$61.5 million), education (down \$42.5 million), health (down \$33.4 million), contributions to municipalities (down \$26.3 million), economic development (down \$24.9 million), and general government (down \$3.8 million).

The Governor has proposed the issuance of \$425 million of general obligation bonds for fiscal year 2008, but such bonds have not yet been authorized.

Differences between Budget and Basic Financial Statements

Revenues and expenditures, as reported by the Treasury in its Basic Financial Statements, may differ substantially from resources and appropriations in the annual budget for a number of reasons, including the following:

(i) The budgetary accounts are on a cash basis, while financial statements prepared by the Treasury include accruals and other adjustments as required by government accounting standards.

(ii) Expenditures for current purposes in a particular fiscal year may include amounts appropriated for earlier periods but not previously expended and, conversely, may exclude amounts appropriated for such fiscal year but not expended until later periods.

(iii) Bonds are authorized by the Commonwealth in accordance with a four-year capital improvement program. Since bond sales are determined by bond market conditions and other factors, the amounts of bonds sold for these improvements are financed by advances from the General Fund to the Capital Projects Fund, which are later reimbursed from proceeds of bond or notes sales.

LITIGATION

The Commonwealth is a defendant in numerous legal proceedings pertaining to matters incidental to the performance of routine governmental operations. Under Act No. 104 of June 25, 1955, as amended ("Act No. 104"), persons are authorized to sue the Commonwealth only for causes of actions specified in said Act. The Commonwealth may be liable under Act No. 104 for damages up to a maximum amount of \$75,000 or \$150,000 if the suit involves actions for damages to more than one person or where a single injured party is entitled to several causes of action. Under certain circumstances, as provided in Act No. 9 of November 26, 1975, as amended ("Act No. 9"), the Commonwealth may provide its officers and employees, including directors of public corporations and government instrumentalities and mayors of the municipalities of the Commonwealth, with legal representation, as well as assume the payment of any judgment that may be entered against them. There is no limitation on the amount of the judgment that may be paid under Act No. 9.

With respect to pending and threatened litigation, as of June 30, 2006, the Commonwealth has included in its financial statements reported liabilities of approximately \$306 million for awarded and anticipated unfavorable judgments. While amounts claimed exceed \$9 billion, such amount represents the amount estimated at the time as a probable liability or a liability with a fixed or expected due date, which would require future available financial resources for its payment. The Commonwealth believes that the ultimate liability in excess of amounts provided in the financial statements, if any, would not be significant.

The Commonwealth is a defendant in two lawsuits filed, one in Commonwealth court and one in the United States District Court for the District of Puerto Rico, by an association of primary care health centers seeking to recover from the Commonwealth \$800 million of Medicaid funds retained by the Department of Health since 1997. In June 2004, the Superior Court of the Commonwealth in San Juan determined that the Commonwealth must return those funds. The Supreme Court of Puerto Rico, however, upheld a partial ruling allowing the Commonwealth to deduct from the payments due to the centers certain of the payments received by the centers from the federal government. Currently, audits are being carried out on the plaintiff centers. As of June 30, 2006, the Commonwealth has accrued \$55 million for this legal contingency. With respect to the federal case, a preliminary injunction was issued by the court against the Commonwealth requiring it to disburse approximately \$20 million in six payments beginning in October 2005.

The Commonwealth is also a defendant in a class action presented by parents of special education students alleging deficient services to these students in the areas of education and health care before Commonwealth Courts. One court recently decided in favor of the parents' request to include damage claims in the same class action case. This court may now award damages to the class action members, and in doing so may consider the claims in groups or each case individually. This will require that the parents prove the damages suffered. The Commonwealth plans to defend vigorously each case. As of June 30, 2006, the Commonwealth had accrued \$440 million for this legal contingency.

This decision is appealable and thus, not final at this time. The Commonwealth does not anticipate any final determination or damages award, in any case, to be granted in this fiscal year.

The Commonwealth and various component units are defendants in other lawsuits alleging violations of civil rights, breach of contract, and other damage claims. Preliminary hearings and discovery proceedings are in progress. The amounts claimed exceed \$7.8 billion; however, the ultimate liability cannot be presently determined. It is the opinion of the Commonwealth that the claims are excessive. No provision for any liability that may result upon adjudication of these lawsuits has been recognized by the Commonwealth. The Commonwealth believes that the ultimate liability, if any, would not be significant.

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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 \$159,055,000 aggregate principal amount of Revenue Refunding Bonds, 2008 Series A, Guaranteed by the Commonwealth of Puerto Rico (the “Guaranteed Series A Bonds”) and \$125,700,000 aggregate principal amount of Revenue Refunding Bonds, 2008 Series B, Guaranteed by the Commonwealth of Puerto Rico (the “Guaranteed Series B Bonds” and together with the Guaranteed Series A Bonds, the “2008 Bonds”). We have also examined Act No. 45 of the Legislature of Puerto Rico, approved July 28, 1994, as amended (hereinafter called the “Guaranty Act”), providing for the guaranty by the Commonwealth of the payment of the principal of and interest on a principal amount of bonds outstanding at any one time of the Authority, specified by the Authority to be covered by such guaranty, to the extent that the revenues and other moneys of the Authority pledged to the payment of such principal and interest are not sufficient for the purpose.

The 2008 Bonds are being issued under and secured by the Amended and Restated Resolution No. 1583, originally adopted by the Authority on December 7, 1995, and amended and restated as of March 7, 2008 (the “1995 Resolution”) and a supplemental resolution thereto fixing the terms of the 2008 Bonds (the “Supplemental Resolution” and together with the 1995 Resolution, the “Resolution”). Capitalized terms used herein and not otherwise defined shall have the meanings ascribed thereto in the Resolution.

The 2008 Bonds are being issued to provide funds to refinance, with other available monies, all of the Authority’s outstanding Revenue Refunding Bonds, Series 1995, Guaranteed by the Commonwealth of Puerto Rico (the “Refunded Bonds”).

The Authority is authorized to issue Bonds, in addition to the 2008 Bonds, only upon the terms and conditions set forth in the Resolution, and such Bonds, when issued, shall,

with all the 2008 Bonds, be entitled to the equal benefit, protection and security of the provisions, covenants and agreements of the Resolution.

The 2008 Bonds are dated, mature, are payable and bear interest in the manner and upon the terms set forth in the Resolution. The 2008 Bonds are issuable in the form of fully registered bonds in denominations of \$5,000 each or any integral multiple thereof and 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 for the 2008 Bonds.

As Bond Counsel we have examined (i) the Act, (ii) the Guaranty Act, (iii) certified copies of the proceedings of the Authority authorizing the issuance of the 2008 Bonds (iv) the 1995 Resolution, (v) the Supplemental Resolution and (vi) one each of the Guaranteed Series A Bonds and Guaranteed Series B 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 Guaranty Act is valid.
3. The proceedings of the Authority in connection with the authorizing, issuance and sale of the 2008 Bonds has been validly and legally taken.
4. The Authority has properly specified the 2008 Bonds to be covered by the guaranty of the Commonwealth under the Guaranty Act.
5. The Act and such proceedings show lawful authority of the issuance and sale of the 2008 Bonds by the Authority.
6. The good faith and credit of the Commonwealth are pledged for the payment of any amounts required to be paid by the Commonwealth pursuant to said guaranty.
7. As authorized by the Act and by said proceedings, the 1995 Resolution and the Supplemental Resolution have each been duly adopted by the Authority.
8. The 2008 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 Resolution, and are entitled to the benefit and security of the Resolution.

We express no opinion as to any Federal, state, Commonwealth or local tax consequences of the ownership or disposition of the 2008 Bonds.

It is to be understood that the rights of the holders of the 2008 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,

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March 18, 2008

Puerto Rico Aqueduct and Sewer Authority
604 Barbosa Avenue
Hato Rey, Puerto Rico 00916

Ladies and Gentlemen:

In connection with the issuance on the date hereof by Puerto Rico Aqueduct and Sewer Authority (the "Authority") of its \$159,055,000 Revenue Refunding Bonds, 2008 Series A (Guaranteed by the Commonwealth of Puerto Rico) (the "2008 Series A Guaranteed Bonds") and \$125,700,000 Revenue Refunding Bonds, 2008 Series B (Guaranteed by the Commonwealth of Puerto Rico) (the "2008 Series B Guaranteed Bonds" and together with the 2008 Series A Guaranteed Bonds, the "2008 Guaranteed Bonds") you have requested our opinion with respect to the treatment for Puerto Rico tax purposes and United States federal income tax purposes of the ownership and disposition of the 2008 Guaranteed Bonds.

The 2008 Guaranteed Bonds are issued under and secured by Resolution No. 1583, adopted by the Authority on December 7, 1995 and amended and restated as of March 7, 2008 (the "1995 Resolution") and a supplemental resolution thereto fixing their details (the "Supplemental Resolution" together with the 1995 Resolution, the "Resolution").

We have examined Act No. 40 of the Legislature of Puerto Rico, approved on May 1, 1945, as amended and reenacted (the "Act"), creating the Authority, and the Resolution. The Authority is a body corporate and politic constituting a public corporation and governmental instrumentality of the Commonwealth of Puerto Rico (the "Commonwealth") exercising public and essential governmental functions.

As to any questions of fact material to our opinion, we have relied upon the representations contained in the Resolution and such other documents submitted relative to the authorization, issuance and sale of the 2008 Guaranteed Bonds including the opinion of Nixon Peabody LLP, bond counsel, dated the date hereof, relating to the 2008 Guaranteed Bonds.

From such an examination, we are of the opinion that:

1. Interest on the 2008 Guaranteed Bonds is exempt from Puerto Rico income and withholdings taxes, including the alternative minimum tax imposed by Section 1017 of the Puerto Rico Internal Revenue Code of 1994, as amended (the "P.R. Code");

2. The 2008 Guaranteed Bonds are exempt from the property taxes imposed by the Municipal Property Tax Act of 1991, as amended, and interest thereon is exempt from the municipal license tax imposed by the Municipal License Tax Act of 1974, as amended;

3. The transfer of the 2008 Guaranteed Bonds by (i) gift will not be subject to gift tax under the P.R. Code in the case of donors who are residents of the Commonwealth at the time the gift is made and (ii) death will not be subject to estate tax under the P.R. Code in the case of a decedent who at the time of death was (x) a resident of Puerto Rico and (y) a United States citizen who acquired such citizenship solely by reason of birth or residence in Puerto Rico;

4. Gain recognized from the sale or exchange of a 2008 Series B Guaranteed Bond will be subject to income tax under the P.R. Code to taxpayers subject to Puerto Rico income tax on such gains, including individuals residing in Puerto Rico and corporations and partnerships organized under the laws of the Commonwealth;

5. The 2008 Guaranteed Bonds will be considered an obligation of an instrumentality of Puerto Rico for purposes of (i) the non-recognition of gain rules of Section 1112(f)(2)(A) of the P.R. Code applicable to certain involuntary conversions and (ii) the exemption from the surtax imposed by Section 1102 of the P.R. Code available to corporations and partnerships that have a certain percentage of their net income invested in obligations of instrumentalities of Puerto Rico and certain other investments; and

6. Interest on the 2008 Guaranteed Bonds constitutes "industrial development income" under Section 2(j) of the Puerto Rico Industrial Incentives Act of 1963, the Puerto Rico Industrial Incentives Act of 1978, the Puerto Rico Tax Incentives Act of 1987, and the Puerto Rico Tax Incentives Act of 1998, all as amended (collectively, the "Acts"), when received by a holder of a grant of tax exemption issued under any of the Acts that acquired the 2008 Guaranteed Bonds with "eligible funds", as such term is defined in the Acts.

In addition to the opinions above, we would like to bring to your attention that prospective owners of the 2008 Guaranteed Bonds, including, but not limited to financial institutions, should be aware that ownership of the 2008 Guaranteed Bonds may result in having a portion of their interest and other expenses attributable to interest on the 2008 Guaranteed Bonds disallowed as deductions for purposes of computing the regular tax and the alternative minimum tax for Puerto Rico income tax purposes.

Based on the provisions of the United States Internal Revenue Code of 1986, as amended (the "Code"), and the regulations thereunder, now in force:

(1) Interest on the 2008 Guaranteed Bonds received by an individual who is *bona fide* resident of Puerto Rico within the meaning of Section 937 of the Code during the

entire taxable year in which such interest is received will constitute gross income from sources within Puerto Rico and, therefore, is excludable from gross income for purposes of the Code pursuant to section 933(1) thereof;

(2) Interest received on the 2008 Guaranteed Bonds is not subject to United States federal income tax if the holder of the 2008 Guaranteed Bonds is a corporation organized under the laws of the Commonwealth or any foreign country and such interest is not effectively connected with the conduct of a trade or business in the United States by such corporation, such corporation is not a foreign personal holding company, a controlled foreign corporation or a passive foreign investment company under the Code, and such corporation is not treated as a domestic corporation for the purposes of the Code;

(3) Interest on the 2008 Guaranteed Bonds is not excluded from the gross income of the recipient thereof for United States federal income tax purposes under Section 103(a) of the Code; and

(4) United States taxpayers, other than individuals who are *bona fide* residents of Puerto Rico during the entire taxable year, will be subject to United States federal income tax on gain realized upon the sale or exchange of the 2008 Guaranteed Bonds. Pursuant to Notice 89-40 issued by the United States Internal Revenue Service on March 27, 1989, gain on the sale of the 2008 Guaranteed Bonds by an individual who is a *bona fide* resident of Puerto Rico during the entire taxable year will constitute income from sources within Puerto Rico and will qualify for the exclusion provided in Section 933(1) of the Code, provided that the 2008 Guaranteed Bonds do not constitute inventory property in such individual's hands.

In connection with the foregoing statements about certain United States tax consequences arising from the ownership of, receipt of interest on, or the disposition of the 2008 Guaranteed Bonds, be advised that pursuant to the United States Internal Revenue Service Circular No. 230:

(1) These tax statements are not intended or written to be used, and cannot be used by any taxpayer, from purposes of avoiding penalties that may be imposed on the taxpayer by the United States Internal Revenue Service;

(2) These statements were written in connection with the promotion or marketing of the 2008 Guaranteed Bonds; and

(3) Each prospective purchaser of the 2008 Guaranteed Bonds should seek tax advice from an independent tax advisor based on its particular circumstances.

This opinion letter is limited to the above, and we express no other opinion regarding Puerto Rico or the United States tax consequences arising from ownership or disposition of the 2008 Guaranteed Bonds.

The opinions expressed herein are based upon applicable laws, statutes, ordinances, rules and regulations as exist on the date hereof, and we express no opinion as to the effect

which any future amendments, changes, additions or modifications thereof may have on the opinions hereby rendered.

In rendering the foregoing opinions, we do not express any opinion as to any laws other than the laws of the Commonwealth and the federal laws of the United States of America. Accordingly, we express no opinion as to: (i) any laws, rules or regulations of any other jurisdiction, (ii) the applicability of the laws, rules and regulations of any other jurisdiction to the transactions contemplated hereby or the effect of such laws, rules or regulations thereon, or (iii) any requirements of any governmental body, agency or instrumentality of any other jurisdiction.

This opinion letter speaks only as of the date hereof, is based upon applicability laws and facts as of the date hereof and we undertake no obligation to update or supplement it or advise you of any change in any matter set forth herein.

This opinion letter is being rendered solely for the benefit of the Authority and the holders from time to time of the 2008 Guaranteed Bonds and may not be relied upon by any other person or entity.

We hereby consent to the inclusion of this opinion letter as Appendix VI to the Official Statement. We further consent to the reference made to us under the caption *Tax Matters*.

Very truly yours,

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PUERTO RICO AQUEDUCT AND SEWER AUTHORITY • REVENUE REFUNDING BONDS, 2008 SERIES A AND SERIES B

