



# GOVERNMENT OF PUERTO RICO

Puerto Rico Fiscal Agency and Financial  
Advisory Authority

## Municipal Secondary Market Disclosure Information Cover Sheet Municipal Securities Rulemaking Board (MSRB) Electronic Municipal Market Access System (EMMA)

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**THIS FILING RELATES TO A SINGLE BOND ISSUE:**

Name of bond issue exactly as it appears on the cover of the Official Statement:

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Nine-digit CUSIP\* numbers if available, to which the information relates:

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**THIS FILING RELATES TO ALL OR SEVERAL SECURITIES ISSUED BY THE ISSUER, OR ALL OR SEVERAL SECURITIES OF A SPECIFIC CREDITOR:**

Issuer's Name: Puerto Rico Aqueduct and Sewer Authority

Other Obligated Person's Name (if any): \_\_\_\_\_

Six-digit CUSIP\* number(s): 745160

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**TYPE OF INFORMATION PROVIDED:**

- A. ☒ Annual Financial Information and Operating Data pursuant to Rule 15c2-12

Fiscal Period Covered: 2016-17

- B. ☐ Audited Financial Statements or CAFR pursuant to Rule 15c2-12

Fiscal Period Covered: \_\_\_\_\_

- C. ☐ Notice of Failure to Provide Annual Financial Information as Required

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I represent that I am authorized by the issuer, obligor or its agent to distribute this information publicly.

/s/ Sebastián M. Torres Rodríguez

Sebastián M. Torres Rodríguez

Puerto Rico Fiscal Agency and Financial Advisory Authority,  
as Fiscal Agent for the Commonwealth

Dated: April 2, 2018



# PUERTO RICO AQUEDUCT AND SEWER AUTHORITY

## ANNUAL FINANCIAL INFORMATION

Fiscal Year ended June 30, 2017

### Introduction

In connection with the issuance by the Puerto Rico Aqueduct and Sewer Authority (the “Authority” or “PRASA”) of its Revenue Bonds and Revenue Refunding Bonds (Base CUSIP No. 745160), and in compliance with Rule 15c2-12, as amended, of the Securities and Exchange Commission, the Authority has covenanted to file within 275 days after the end of each fiscal year, with the Municipal Securities Rulemaking Board (MSRB) through the Electronic Municipal Market Access System (EMMA):

- Core financial information and operating data for the prior fiscal year, including the Authority’s audited financial statements, prepared in accordance with generally accepted accounting principles, and
- material historical quantitative data, including financial information and operating data, on PRASA’s System and revenues, expenses, financial operations, and indebtedness generally found in the Official Statement prepared in connection with the issuance of the bonds.

The Authority is submitting the report on April 2, 2018, by virtue of rollover from April 1, 2018 to the next business day.

### Appendix I

Included in Appendix I is the Authority’s Annual Financial Information and Operating Data Report containing data for the fiscal year ended June 30, 2017, as prepared by the Authority. The financial and operating data in Appendix I sets forth only the results of actual operations and does not reflect demographic information or forecasts regarding operations, except when necessary to place operating results and other information in context.

### Note

As notified on March 27, 2018, the Authority’s audited financial statements for the fiscal year ended June 30, 2017, will be submitted as soon as available.

## APPENDIX I

PUERTO RICO AQUEDUCT AND SEWER AUTHORITY

ANNUAL FINANCIAL INFORMATION AND OPERATING DATA REPORT

## CONTINUING DISCLOSURE AS OF JUNE 30, 2017

### 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

PRASA is organized into five operational Regions (North, South, East, West and Metro) and is managed by an Executive Management Team that provides the day to day management oversight and coordination for all institutional activities. It is supported by various departments in the organization including, but not limited to finance, human resources, customer services, purchasing and logistics, and information systems. PRASA's Governing Board, as restructured following Act 68-2016 to strive for a diversified and professionalized Governing Board, is composed of seven members, which include:

- Four independent directors appointed by the Governor of Puerto Rico, comprising of:
  - a. One engineer licensed to practice in Puerto Rico with ten years of practice experience,
  - b. One legal advisor with at least ten years of experience and admitted to practice in the Government,
  - c. One member with a wide knowledge and experience in the field of corporate finance,
  - d. One professional with expertise in any fields related functions delegated to PRASA
- One private citizen representing the Authority's customers, and
- Two ex-officio members, the Executive Director of the Association of Mayors and the Executive Director of the Federation of Mayors.

Currently, the PRASA Board has two costumer's representatives since they were selected prior to the enacting of Act 68-2016 and their current term expires in June 2020. However, after their term ends, the PRASA Board will have only one Consumer Representative as stated by Act 68-2016. The customer representatives are elected through a public selection process under the jurisdiction of and directed by Puerto Rico Department of Consumer Affairs and shall serve for a three (3) year term. The Governor designated or elected board members shall serve for staggered terms: two members shall hold office for five years and two members for six years. As the terms of office of the four Board members appointed by the Governor expire, the Governor shall appoint their successors for five-year terms, following the same candidate identification mechanism. None of the members appointed by the Governor may hold such office for more than three terms. In addition, as required per Act 2.2017 provides that the Executive Director of the Puerto Rico Fiscal Agency and Financial Advisory Authority, or his designee, shall be a member of any Board of the entities considered covered territorial entities" under the "Puerto Rico Oversight, Management, and Economic Stability Act, known as PROMESA. As of June 30, 2017, the members of the Board were:

Members	Occupation	Term Ends
Reinaldo Paniagua Látimer	Executive Director of the Federation of Mayors	Ex-Officio
Manuel Suárez Miranda, PE	Independent Director – Engineer	July 2, 2017
Gretchen Hau, Esq.	Executive Director of the Association of Mayors	Ex-Officio
Héctor Sánchez Cardona, PE	Customer Representative	June 19, 2020
Félix Aponte Ortiz, PhD	Customer Representative	June 19, 2020
Gerardo Lorán Butrón	AFFAF's Executive Director Representative	Ex-Officio
Vacant	Financial Specialist	
Vacant	Legal Specialist	

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, and all contract changes that are beyond the limits accorded to the Executive President.

The Board is assisted by an Internal Audit Department which is responsible for conducting internal 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. Under the Act of 2013, the Executive President and the Infrastructure Executive Director has an appointment for a six-year term. In addition, 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 five-year terms. Set forth below are brief biographical descriptions of the Executive President and certain members of the Authority's senior management staff.

**Eng. Elí Díaz Atienza, Esq.**, was appointed Executive President of the Puerto Rico Aqueduct and Sewer Authority by the Governor of Puerto Rico on February 1st, 2017. His career in the public sector began in 2009, when he worked as infrastructure advisor at Fortaleza and acted as legal director for the P3 Authority. By 2010 he was appointed Executive Director of the Solid Waste Authority. He has more than 10 years of experience working in the private sector as a consultant in real estate, construction and infrastructure with firms such as Unipro Architects and Engineers, Constructora Santiago, Banco Popular de Puerto Rico and McConnell Valdés LLC. He graduated with honors from his Bachelor's Degree in Civil Engineering from the Georgia Institute of Technology in 1999; and is a licensed professional engineer (PE). By 2007, he obtained his Juris Doctor from the School of Law of the University of Puerto Rico and was sworn in Puerto Rico Supreme Court as a licensed lawyer and public notary in the jurisdiction of Puerto Rico, respectively.

**Eng. Doriel I. Pagán Crespo**, Vice President of Operations, she was appointed to that position in March 2017. Prior to her appointment, she was the Executive Director for the North Region, was appointed to that position in May 2011. Prior to her appointment, she served as Regional Executive Sub-Director for the North Region for a year and a half. Ms. Pagán joined the Authority in 1992, and has occupied different positions within the Compliance and Quality Control Department. Prior to joining the Authority, she worked for Johnson & Johnson Company in San Germán, Puerto Rico, for two years. Ms. Pagán was recognized by the College of Engineers and Surveyors of Puerto Rico as "Woman of Avant-garde." She obtained her Bachelor's Degree in Chemical Engineering from the University of Puerto Rico, Mayagüez Campus in 1991.

**Yoniel Arroyo Muñoz, PhD**, Vice President of Administration, he was appointed to that position on February 2017. Prior to his appointment he was served in various position in the Customer Service Department. Dr. Arroyo has a strong knowledge in the human resources, business development. Also, he served as professor in the Interamerican University and the Sistema Universitario Ana G. Mendez and as Cathedra tic Deputy at the Universidad de Puerto Rico in Aguadilla. Prior to join the Authority he worked in the banking industry. Dr. Arroyo holds a PhD in Philosophy, a Master Degree in Business Administration with concentration in Human Resources and Bachelor's Degree in Human Resources.

**Eng. Lynette Ramirez**, Executive Director for Infrastructure, assumed such position in January 2013 after having served as the Authority's Deputy Executive Director for Infrastructure for 4 years and as Engineering Director for 2 years. Prior to that she served as Project Engineer for environmental engineering firms such as, Carollo Engineers, CMA Architects and Engineers and MP Engineers of Puerto Rico. Eng. Ramirez holds a Bachelor Degree in Chemical Engineering from the University of Puerto Rico, Mayagüez Campus and a Master Degree in Environmental Engineering from the University of Illinois at Urbana-Champaign.

**Efraín Acosta Reboyras**, Executive Director of Administration and Finance, was appointed to such position in April 2004, after working for two years with Ondeo de Puerto Rico (a subsidiary of Suez Environment). 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.

**Irma M. López**, Executive Director of Environmental Compliance and Quality Control, was appointed to such position in May 2012, after having served the Authority since 2002 in different positions starting with the administration of the private contract with ONDEO, then as Director of Drinking Water area, and then as Executive Sub-Director of the Environmental Compliance and Quality Control Department. Prior to that Mrs. López had served for more than 12 years in the private industry in various technical and management positions for multinational manufacturing firms. She holds a Bachelor's Degree in Science with major in Chemistry from the University of Puerto Rico, Mayaguez Campus.

**Aida M. Márquez Ibáñez**, Human Resources and Labor Relations Director, was appointed to such position in March 2017 after been working as the Human Resources Deputy Director of Comisión Estatal de Elecciones for 3 years. She has over twenty years of experience in administration and human resources with public and private sectors, having served as the Human Resources Director for Senado de Puerto Rico, Oficina de Servicios Legislativos and Radiology Institute Imaging Center. Mrs. Márquez Ibáñez holds a Master in Business Administration and a Bachelor's Degree in Social Sciences/Psychology, both from Interamerican University, Metropolitan Campus.

**Eng. Jose Rivera Ortiz**, Executive Director for the North Region, he was appointed to that position in February 2017. Prior to his appointment, he served as Arecibo Area Director for the North Region for a year, and Manati Area Director for the North Region for four years. Mr. Rivera joined the Authority in 1999, and has occupied different positions within the Operational and Distribution Department in the North Region. He holds a Bachelor's Degree in Mechanical Engineering from the Polytechnic University of Puerto Rico, San Juan Campus in 1996.

**Eng. Roberto Martínez Toledo**, Executive Director for the Metro Region, was appointed to such position in December 2014. Prior to his appointment, he served as Deputy Executive Director of the Metro Region and as the San Juan Area Deputy Director. He has a total of 22 years' experience in the Authority and holds a Bachelor's Degree in Civil Engineering from the Polytechnic University of Puerto Rico.

**Eng. Roberto Guzmán Vázquez**, Executive Director for the East Region, was appointed to such position in 2013. Prior to his appointment he served as Deputy Executive Director for the East Region and as the Cayey Area Director for 16 years. He has a total of 26 years' experience in the Authority and holds a Bachelor's Degree in Mechanical Engineering from the University of Puerto Rico, Mayaguez Campus and a Master's Degree in Engineering Management from the Polytechnic University of Puerto Rico.

**Eng. Héctor Gierbolini Pérez**, Executive Director for the South Region, was appointed to that position in February 2013. He has over eighteen years of experience in the management, operation, maintenance, and construction of water and wastewater systems. Mr. Gierbolini received his Bachelor's Degree in Mechanical Engineering from the University of Puerto Rico, Mayaguez Campus.

**Eng. Joel Lugo Rosa**, Executive Director for the West Region, was appointed to such position in December 2011, after having served as Deputy Executive for West Region since January 2009. Prior to that, he served as Auxiliary Infrastructure Director for West Region from 2006. Mr. Lugo joined the Authority in 1998 as field engineer for the Infrastructure Department. He holds a Bachelor's Degree in Civil Engineering from the University of Puerto Rico and a Master's Degree in Civil Engineering with a concentration in Water Resources and Environmental Engineering from the University of Puerto Rico.

The Authority has organized its service area into five regions to decentralize the management and administration of many operational matters. Regional executive directors, serve terms of six years, or five years for

those named after the enactment of Act 15, and report to the Vice President of Operations and to the Executive President. They are responsible for the 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.

## **Employees and Labor Relations**

The Authority had 4,654 regular and temporary employees as of June 30, 2017, as compared with 4,798 as of June 30, 2016 and 4,989 as of June 30, 2015. As of June 30, 2017, 3,296 employees were represented by two unions, the Independent Authentic Union (the "UIA" by its Spanish acronym) and the Hermandad de Empleados Profesionales de la Autoridad de Acueductos y Alcantarillados (the "HIEPAAA"), the largest of which is the UIA with 3,155 members.

During 2012, the Authority entered into new Collective Bargaining Agreements (CBAs) with UIA and the HIEPAAA. These new CBAs will remain in effect through December 31, 2015 and June 30, 2016, respectively. The new CBAs contain, among other things, certain retroactive and future economic agreements in the areas of payroll and benefit expenses that are included in the Authority's budget projections. Following the enactment the Fiscal Sustainability Act, the Authority and its unions agreed to amendments to the respective CBAs consistent with its mandate. These amendments generally provide, in the case of UIA: (i) the elimination of the Authority's contribution to the unionized employees savings plan, (ii) the elimination of liquidation of vacation and sick leave in excess of 30 days, (iii) reductions of vacation and sick leave days, (iv) reduce the amount employees retirement bonus by 50%, and (v) reduce previously negotiated salary raises for fiscal years 2015 by approximately 60%. In addition, the UIA agreed to the implementation of performance metrics, the incorporation of computerized handheld meter readers, and flexibilization of work shifts and functions in certain areas, as well as agreeing to the conversion of certain temporary employees (expected to be approximately 300) to regular positions during the period, who will only be entitled to benefits established by law rather than those granted under the collective bargaining agreement. These measures and amendments will remain in place through July 1, 2017. The above modifications notwithstanding, the UIA's collective bargaining agreement will remain in effect through its current termination date. However, under the current legislation, all the economic clauses under the CBAs are on hold.

HIEPAAA's CBA was also amended to (i) reduce union members' Christmas and Summer bonuses, (ii) reduce previously negotiated salary increases, and (iii) eliminate liquidation of accumulated vacation and sick days in excess of 60 days and 45 days, respectively, subject to the retention of the right to accumulate vacation and sick leave days in excess of 60 and 90 days, respectively, among other similar agreements.

Chapters II and III of Act 66-2014 were in effect until July 1, 2017. On April 29, 2017 Act 26-2017 known as "Act to Comply with the Fiscal Plan" was enacted, further amending labor benefits. Some of the changes are as follows:

- Elimination of all bonuses, except for the Christmas Bonus, reduced to \$600 for all employees.
- Maximum overtime factor 1.5 times.
- Maximum annual accrual of 15 days and 18 days for vacation and sick leave, respectively for employees hired prior to February 4, 2017 and maximum annual accrual of 15 days and 12 days for vacation and sick leave, respectively for employees hired after February 4, 2017.
- Reduction of the employer contribution for the health medical plan

However, currently, the Authority must meet the requirements set forth in Act No. 3, enacted on January 23, 2017 ("Act 3-2017"), expiring on July 1, 2021, which provides, among other factors, for the freezing of collective bargain agreements and salaries as a measure to decrease payroll costs.

The Authority's current relations with its main labor unions are considered satisfactory, these may be adversely affected by labor disputes, including those that may arise as a result of the implementation of the Fiscal Sustainability Act, the Act to Comply with the Fiscal Plan and Act 3 or other laws which could be enacted in the future regarding insolvency, reorganization, moratorium and similar laws affecting creditors' rights, including Chapter 9 of the Bankruptcy Code, if the same were to become applicable to public corporations of the Commonwealth. The ability of the Authority and its labor unions to continue to enjoy satisfactory relations will assist the Authority in achieving its financial and operating objectives and projections. Should these relations deteriorate, however, and as a result strikes and walkouts become more frequent, it is possible that such work stoppages may have an adverse effect on the

Authority's ability to provide water and wastewater services to its customers or impair its ability to collect Operating Revenues.

In addition, there can be no assurances 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 Operating Revenues of the Authority.

### **Pension Benefits**

Substantially all of the employees of the Authority are covered by the Employees Retirement System of the Government of the Commonwealth of Puerto Rico (the "Employees Retirement System"), a multi-employer hybrid defined benefit plan consisting of different benefit structures. The Employees Retirement System covers substantially all employees of the departments and agencies of the Commonwealth, all members and regular employees of the Legislative Branch, and all employees of the public corporations (other than the University of Puerto Rico and the Puerto Rico Electric Power Authority) and municipalities, except for those employees that are covered by two other retirement systems of the Commonwealth.

As a participating employer in the Employees Retirement System, the Authority is required to make employer contributions based on the minimum statutory rate, which for fiscal year 2017 was 15.525% of payroll. The Authority's total employer contributions based on the statutory rate during fiscal years 2015, 2016 and 2017 amounted to approximately \$18.8 million, \$19.3 million, and \$19.3 million, respectively.

In addition, for fiscal years 2015, 2016 and 2017, the Authority's funding obligation with respect to the Supplemental Contribution and other special laws was \$14.9 million, \$13.5 million and \$13.5 million. Furthermore, the Authority's funding obligation with respect to the Additional Uniform Contribution was \$4.8 million, \$5.0 million and \$23.8 million for fiscal years 2015, 2016 and 2017, respectively.

*For information with respect to the Employees Retirement System, investors should refer to the Commonwealth Report.*

*Application of New GASB Standards.* In 2012, the Governmental Accounting Standards Board (GASB) released GASB 68, which will apply to the Authority commencing in fiscal year 2015. The implementation of GASB 68 will have a material impact on the Authority's liabilities beginning in fiscal year 2015, which will be determined based on the actuarial valuation of pension liabilities to be performed by the Employees Retirement System and based on the Authority's participation in the total liability of the Employees Retirement System. The application of GASB 68 will require that the Authority recognize as a liability its proportionate share of the collective net pension liability of the Employees Retirement System. Such proportion is required to be determined on a basis that is consistent with the manner in which contributions to the Employees Retirement System are determined. The Authority will also be required to recognize pension expense and report deferred outflows of resources and deferred inflows of resources related to pensions for its proportionate shares of collective pension expense and collective deferred outflows of resources and deferred inflows of resources related to pensions under the Employees Retirement System. On a balance sheet basis, based on its current estimation of pension liabilities, the Authority believes GASB 68 will materially reduce the Authority's Net Position by approximately \$1.5 billion. The Employees Retirement System currently works to determine the Authority's participation in the total liability.

### **Other Post-Employment Benefits**

In addition to the pension benefits, the Authority provides non-pension post-employment benefits under a Healthcare Benefits Plan to retirees that consist of a fixed maximum monthly payment of \$125 to cover medical expenses for retired employees meeting the service eligibility requirements. Based on this Plan's features, it is treated as a single-employer defined benefit healthcare plan. These benefits are funded by the Authority on a "pay-as-you-go basis," which means that there is no reserve or pool of assets against the benefit expenses that the Authority may incur in future years. For fiscal years 2016 and 2017 the Authority paid \$2.9 million for these non-pension post-employment benefits for its eligible retirees.



In accordance with the provisions of the Governmental Accounting Standards Board Statement No. 45, the Authority is required to quantify and disclose its obligations to pay non-pension post-employment benefits to current and future retirees. Based on the actuarial valuation report, as of June 30, 2015 the Authority's actuarial accrued liability with respect to these benefits as of June 30, 2016 is \$76 million, and the funding ratio is 0% since, as mentioned above, these benefits are funded on a "pay-as-you-go" basis. The actuarial valuation report for the year ended as of June 30, 2017 is under preparation.

## **AUTHORITY CONSULTANTS**

The Authority has contracted the Consulting Engineer to prepare the Consulting Engineer's Report on the state of the Authority's Systems, its Ten-Year CIP as presented in the Authority's certified Fiscal Plan\* and its financial condition/projections, and to provide the services of the Consulting Engineer under the Master Agreement of Trust. The Consulting Engineer's Report should be read in its entirety for a more complete description of the Authority's operations and facilities and for the conclusions reached by the Consulting Engineer about the state of the Authority's Systems, its Ten-Year CIP and its financial condition/projections as of June 30, 2017. For more information refer to the Authority's certified Fiscal Plan and the 2016 and 2017 Consulting Engineer's Report on the Authority web site, [www.Acueductospr.com](http://www.Acueductospr.com).

In addition, since 2004, 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 Five-Year CIP. However, as a result of the Government's fiscal situation, which consequently had a major impact on the Authority's own fiscal situation, in fiscal year 2016, the Authority was forced to postpone or terminate the execution of all of its Five-Year CIP. Since the beginning of 2016 and following fiscal year 2017 all construction contract projects were suspended and support from the Program Management Consultants was essentially concluded until further notice. See "CIP Suspension" under CAPITAL IMPROVEMENT PROGRAM.

Prior to the CIP suspension, the Program Management Consultants structure had been modified several times to improve the program's efficiency and best meet the Authority's need. The fiscal year 2016 structure included:

<b>Region</b>	<b>Consultant</b>
Metro and North	CH Caribe Engineers, PSC
West	ECR Engineering, LLC (Pre-Construction) CH Caribe Engineers, PSC (Construction) RER Environmental Engineering Services C.S.P (Post-Construction)
East and South	Black and Veatch Puerto Rico, PSC

As listed above, the Program Management Consultant structure for the West Region was modified by assigning the different project development phases (Pre-Construction Management, Construction Management and Post-Construction Management), to three different entities. Both ECR Engineering, LLC and RER Environmental Engineering Services, C.S.P are two local engineering firms that have been subcontractors of Program Management Consultants for other regions in the past.

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\* On September 20, 2017, a catastrophic category 4 hurricane made landfall on Puerto Rico causing widespread destruction throughout the entire island, leaving the entire population without power. The hurricane damaged the Authority's infrastructure resulting in less than half of the population having the water and wastewater service. The hurricane impact may result in a material adverse change in the financial condition of the Authority, and has required amendments to the Fiscal Plan certified by the Fiscal Oversight Board. The Authority has submitted proposed revised Fiscal Plan drafts to the Fiscal Oversight Board and working through the certification process for the revised fiscal plan. Financial and other information in the revised fiscal Plan may be materially different from the information set forth in the certified Fiscal Plan and in this disclosure. The information provided herein is based on information and circumstances as of June 30, 2017, may be materially different as of the date hereof than reported herein, and, therefore should not be relied upon for current information concerning the Authority's financial condition/projections or the status of the Authority's systems.

The Program Management Consultants supported the Authority in the management and implementation of the CIP from the conceptualization and planning stages of a project, to the construction and project close-out activities. The Program Management Consultants are organized into three main teams (Pre-Construction, Construction, and Post-Construction). The Program Management Consultants collaborate with the Authority in the definition of project development metrics (used to measure Program Management Consultants) considering the priority level of the projects and provide support in permitting activities, land acquisition, etc. 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; management of design activities and constructability reviews; and support during bid processes. The Program Management Consultants also support the Authority, from time to time, in other operational and improvement initiatives. The Program Management Consultants' leadership works closely with the Authority's Infrastructure Management team and its operations team.

Since 2006, the Authority has been able to successfully and efficiently execute over 800 projects addressing its CIP's objectives of regulatory compliance, operational efficiency, systems simplification, technology, modernization and growth. Through the Program Management Consultants, the Authority has demonstrated its capacity and flexibility in managing and successfully executing its CIP, as evidenced by its ability to successfully execute over 130 construction projects at \$570 million investment in fiscal year 2008.

Performance of Program Management Consultants was monitored and evaluated continuously through the use of monthly metrics and biannual evaluations. In order to ensure the Program Management Consultants achieved the desired level of efficiency, the Authority developed key performance indicators ("KPI") and performance metrics that measures each Program Management Consultant's performance in meeting deadlines and in providing quality services. The use of these metrics, coupled with a periodic 6-month formal evaluation of each Program Management Consultants, resulted in optimized performance. As part of the Authority's CIP, each Program Management Consultants prepared a schedule for the complete lifecycle of each project. A monthly summary of the milestones was prepared, which is referred to as the project track tool ("PTT"). The PTT includes nine critical milestones or metrics dispersed throughout the lifecycle of a project.

Each metric is composed of two elements: (1) schedule and (2) quality of work. The first component measures the compliance of the established metric date. The second area measures the quality of the metric, which consists of a set of a series of questions related not only to the quality but also to cost, safety and client satisfaction per metric scored from 1 to 5. A summary table was then prepared to present two scores: (1) quality performance index and (2) level of confidence. The first score establishes the quality of the precision of the metrics evaluated and the second score establishes a ratio of metrics achieved versus planned in the PTT. Finally, based on these two scores, an overall metrics performance score was calculated. Time and cost are overriding criteria, but other important criteria are quality, safety, and client satisfaction. Each metric was weighted equally along the project lifecycle.

Through the Program Management Consultants initiative, the Authority was managing projects in an effective and efficient way, on a timely manner and within budget. Indicators of this are the percentages of change orders and time extensions in construction projects, which prior to the suspension of the CIP were 3% and 20%, respectively.

The Program Management Consultants and the Consulting Engineer also interact. Prior to suspension of the Program Management Consultants, the Consulting Engineer provided Pre-Construction Management services for the Authority's North and Metro Regions (under a subcontract to the Program Management Consultants for those two regions, CH Caribe). The Consulting Engineer, as well as the Authority, relies on the expertise and professional engagement of the Program Management Consultants for the review of CIP project planning, design, and construction documents; as well as for the proper inspection and certifications of completed CIP projects. From time to time, the Authority required that the Program Management Consultants leadership meet, at least twice a year, with its management team in order to align efforts and discuss changes affecting PMCs across regions.

As covered more fully in the 2016 and 2017 Consulting Engineer's Report, the Authority has embarked on programs to improve its operations and financial situation. To assist it in these endeavors, the Authority has engaged other recognized consulting firms, including Accenture, CSA Architects and Engineers, Arcadis Caribe, PSC, Truenorth Corporation, and Raftelis Financial Consultants (RFC) among others.

RFC was contracted in January 2016 to provide an independent assessment and recommendations on the Authority's management, operations, capital investments, and financing. RFC developed a professional opinion report with clear and defensible assessments of initiatives, inefficiencies, challenges, and opportunities. At a high level, RFC's assessment found that the Authority is led by a highly qualified and dedicated team that is taking necessary steps to align the organization with the industry's best practices. The required infrastructure investment is such that the Authority will not be able to rely on cost savings to cover capital expenditures. Rather, continued delivery of high quality, affordable service will require access to the capital market to fund the projects laid out in the utility's capital improvement plan, as well as stakeholder support from the Authority's employees, regulators, creditors, and policy makers. For more information on the RFC's Professional Opinions Report refer to the document published on the Authority web site, [www.acueductospr.com](http://www.acueductospr.com).

## THE WATER AND WASTEWATER SYSTEMS

### Introduction

The island of Puerto Rico is about 100 miles long and 35 miles wide. According to the United States Census Bureau, the population of Puerto Rico was 3,725,789 in 2010 and 3,337,177 in 2017 (estimate), compared to 3,808,610 in 2000. 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 96% of the population served by the Water System and about 59% 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, 2017

Type	Water Only	Sewer Only	Water and Sewer	TOTAL
Residential	454,617	271	720,727	1,175,615
Commercial	14,646	59	35,542	50,247
Government	3,410	7	6,643	10,060
Industrial	162	65	579	806
Total	472,835	402	763,491	1,236,728

In 2004 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. This appointment term was modified to 5 years in 2013

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 varied from new facilities to some requiring capital improvement of its facilities needs significant upgrades, replacement, additions or rehabilitation, due to compliance issues and changes in the regulatory requirements. Nevertheless, the facilities are generally producing and delivering potable water and conveying and treating wastewater adequately.

The Authority has adopted the mission of providing quality water and wastewater services at the lowest possible cost. To achieve this, the Authority developed and adopted a Strategic Plan, which covers fiscal years 2014 through 2018, with five key strategic initiatives: 1) Fiscal Health, 2) Operational Excellence, 3) Infrastructure and Sustainability, 4) Organizational Transformation, and 5) Technological Innovation. The Authority is currently in the process of revising and launching an updated Strategic Plan that is aligned with and supports the objectives included in the Authority's Fiscal Plan and in the Government of Puerto Rico's "Plan para Puerto Rico".

## The Water System

The Water System provides drinking water to virtually all (96%) 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, 114 water treatment plants and an extensive drinking water distribution system, including over 14,753 miles of pipe (all data provided is as of June 30, 2017).

The Authority's raw water supply is drawn both from surface water sources and wells. Currently, there are adequate sources of raw water to meet Water System demand. Over the next 30 years, based on current projections of the Puerto Rico Planning Board, the water demand is expected to decrease. However, the need for additional water sources will depend on actual population growth rates, the Authority's actions for controlling and reducing its non-revenue water (the difference between estimated total water produced and total water sales), and the condition and quality of water sources. Surface water sources—small dams, weirs, regulated dams, lakes, rivers and streams—account for approximately 90% of the Authority's raw water supply. While Puerto Rico's average rainfall of over 54

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), most 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. Until May 2011, the NCS was operated and maintained by Thames-Dick Superaqueduct Partners ("Thames-Dick") under a master agreement that also covered its construction. The master agreement between Thames-Dick and the Authority was terminated by the parties pursuant to a Resolution Agreement dated May 18, 2011. The operation, maintenance and administration of the NCS were transferred back to the Authority effective as of June 19, 2011. The decision was made based on business and policy reasons, mutually agreed to by the parties, and not based on their respective performance or existing claims. The Authority continues to contract the operation and maintenance services to a private operator.

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. Preliminary results as of June 30, 2017 show that island-wide the Authority's treatment plant average water production was approximately 455 mgd during fiscal year 2017. The two large and five small treatment plants located in the San Juan metropolitan area and the transmission from the NCS and the related Santiago Vázquez Water Treatment Plant have a combined production capacity of approximately 240 mgd, about 45% of the Water System total. Altogether, as of June 30, 2017, there are 114 treatment plants for surface water supplies, all of which provide treatment consisting of coagulation, sedimentation and filtration. Well supplies are disinfected with chlorine. Preliminary results as of June 30, 2017 for both water treatment facilities and drinking water wells show that island-wide the Authority's average water production was approximately 507 mgd during fiscal year 2017.

The water supply distribution systems utilize approximately 14,753 miles of transmission and distribution mains to deliver water to customers from wells and treatment plants. Since the implementation of the SAP PM and SAP-ISU database system in 2009, which is used by the Authority for operation, maintenance, and management activities, the tracking and reporting of water pipeline leaks has improved. However, the Authority's rate of leak occurrence continues to be very high compared to other utilities in the United States and Canada. This high rate of occurrence contributes to the Authority's non-revenue water ("NRW"), discussed below.

Water quality generally meets the National Primary Standards established by EPA under the federal Safe Drinking Water Act although, from time to time, certain facilities of the Water System have experienced parameter violations. The Authority has entered into the 2006 Drinking Water Settlement Agreement (as amended) to address these and other violations. See "Regulatory Compliance" under ENVIRONMENTAL MATTERS, as of June 30, 2017, the Authority completed 540 short-term remedial measures as well as 115 remedial actions classified as mid-term remedial measures, while the time frame for the completion of the remaining long-term measures is being negotiated with DOH as part of the renegotiation process of all the Existing Consent Decrees currently underway.

All long term remedial measures under Term 1 have been completed. The periods to implement the long-term remedial measures for Term 2 and Term 3 have due dates from December 31, 2016 through December 31, 2021. The Term 2 measures have a total of 18 projects of which 14 have already been completed. Of the remaining four remedial measures, two were motion to be moved to Term 3 and two were motion to be eliminated. Finally, the Term 3 measures have a total of 13 projects in which seven have already been completed. These seven projects are Enrique Ortega WTP Phase-A improvements, the Tetúan system, the Guajataca WTP improvements, the Esperanza WTP improvements, elimination of Rocha WTP and La Máquina WTP, and the Guzmán Arriba WTP improvements. Of the remaining six remedial measures, four were motion for time extensions and two were motion to be eliminated. The Consulting Engineer completed its most recent asset condition assessment in April 2017 and issued the "FY2017

Asset Condition Assessment for Water and Wastewater System” report on June 2017. Based on the most recent facility inspections and system condition assessment conducted from January 1, 2017 through April 30, 2017, the Consulting Engineer has concluded that (while aging) the Authority’s treatment plants, dams, pump stations, storage tanks and wells are generally in adequate condition. Water facility ratings decreased in all criteria compared to the 2015 inspections, except for the regulatory compliance criteria which remained the same. This decline in ratings is an effect of the slowing down of the capital improvement and R&R programs due to the fiscal situation and budget limitations.

A number of water treatment plants, including those that serve the metropolitan region, had some compliance challenges, specifically as a result of the implementation of EPA’s Stage 2 Disinfectants and Disinfection By-Products Rule which has more restrictive monitoring requirements and compliance determination. The Authority acknowledges that it has some challenges ahead to bring these facilities (systems) into compliance with the new regulation as future regulations 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. As of the date hereof, the Authority is conducting evaluations, water quality modeling, developing action plans and implementing remedial actions to minimize non-compliance events under this regulation. The following water treatment facilities were highlighted by the Consulting Engineer in the recent asset condition assessment as requiring operational and/or capital improvements: Quebradillas, Canalizo, Guayanees, Orocovis, Arecibo, Ciales, Guajataca, La Pica, Liza, Mameyes de Utuado (Abajo), Maricao, Negros Corozal and Sabana Granded de Utuado. Well, pump station and storage tank deficiencies are mostly related to equipment shortcomings (i.e., stand-by pumps not working, inoperable valves, inadequate security measures, among others), which are intended to be addressed through the Authority’s renewal and replacement program, or, in some cases can be addressed by modification of operation and maintenance practices. Bringing these facilities into consistent and sustained compliance with discharge parameters, address the shortcomings identified during inspections and additional operational improvements, including new process equipment, process automation and process control optimization, are some of the measures that the Authority intends to undertake to continue to maintain the condition of these facilities. The Authority expects to bring the performance of non-compliant plants to material compliance with regulatory requirements either through scheduled capital improvements, additional staff training and operating systems improvements or through decommissioning over the next 15 years.

Additionally, many of the water treatment plants have inadequate sludge treatment systems (“STS”) and the discharges from these plants are out of compliance with their National Pollutant Discharge Elimination System (“NPDES”) permit effluent limits issued pursuant to the Clean Water Act. These compliance issues are addressed in the 2015 EPA Consent Decree executed between the Authority and EPA to settle these alleged violations of the Clean Water Act which was approved by the United States District Court for the District of Puerto Rico in May 2016. See “Regulatory Compliance” under ENVIRONMENTAL MATTERS.

The foregoing notwithstanding, the condition of most facilities that have implemented capital improvement projects improved from fiscal year 2012 to fiscal year 2015. Although, certain facilities are operating out of compliance with discharge permit limits and drinking water standards, the facilities are generally producing and delivering potable water to an acceptable level. The Authority has demonstrated to have a thorough understanding and knowledge of the foregoing and continues, to the extent possible, to actively pursue corrective actions to minimize, or eliminate these challenges all together and correct the Water System’s shortcomings.

Prior to the suspension of the CIP in 2016, the portion of the Five-Year CIP devoted to the Water System was principally directed at (i) compliance with the 2006 Drinking Water Settlement Agreement and the 2015 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 NRW. The Authority believes that the projects included in the Water System now Ten-Year 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 Ten-Year 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.

In order to review the Authority’s buried infrastructure, the Consulting Engineer analyzed the data collected on water leaks, including reported leaks and the Authority’s attention time to repair, but did not inspect such buried infrastructure. Reported active leaks and sewer overflows remain at high levels when compared to other utilities in

the United States and Canada. As stated in the 2016 and 2017 Consulting Engineer's Report in connection with the Authority's buried infrastructure (for the Systems), an analysis of the Authority's renewal and replacement needs and budget is recommended in order to develop a sound renewal and replacement program that will allow the Authority to improve and extend the useful life of the Water System, and potentially reduce its high rate of water leaks. The Authority also recognizes that if it can reduce NRW, it may increase its revenues, reduce operation and maintenance costs, and reduce the need for certain capital improvements to increase water supply capacity (as needed). Therefore, the Authority is implementing a series of initiatives, including annual water audits and a NRW Reduction Plan, to address the primary contributors to water losses. In addition, the Authority has included in its certified Fiscal Plan other initiatives to continue reducing NRW and water losses such as: 1) a Private Public Partnership Project, intended to reduce mostly commercial losses; and 2) a Physical Losses Reduction initiative. See THE AUTHORITY's FISCAL PLAN.

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, 2017:

**Number of Customers with Water Service**

<b>Fiscal Year</b>	<b>Residential</b>	<b>Commercial</b>	<b>Industrial</b>	<b>Government</b>	<b>Total</b>
2013	1,185,538	58,125	1,006	11,003	1,255,672
2014	1,177,347	53,702	916	10,500	1,242,465
2015	1,175,072	51,869	864	10,334	1,238,139
2016	1,174,435	50,944	779	10,202	1,236,360
2017	1,175,344	50,188	741	10,053	1,236,326

**Water Production and Sales (Cubic Meters)**

In 2012, the Authority adopted the water balance methodology recommended by the International Water Association/American Water Works Association for estimating water losses instead of unaccounted-for water. The foregoing change in methodology has allowed the Authority to better understand the components that impact the water loss estimate, which has resulted in a more accurate and reliable estimate. Other measures taken by the Authority to improve the estimate and the understanding of water losses include: (i) installation of production flow meters at key high volume treatment plants; (ii) comparative flow tests of production meters; (iii) database analyses to estimate unauthorized uses; (iv) field investigations to identify unauthorized uses; (v) customer meter tests to estimate meter under-registration; and (vi) evaluation of operational practices to identify unbilled and unmetered authorized uses of water.

The following table sets forth the general water balance for the Authority's production and consumption (in cubic meters per year) for the fiscal years since 2012 ended June 30, 2017:

Year	Production	Authorized Consumption		Water Losses		Non-Revenue Water*	
		Billed	Unbilled	Commercial Losses	Physical Losses	Total	Volume
2012	894,361,222	343,628,951	23,873,131	91,056,132	435,803,008	526,859,141	550,732,272
2013	852,025,658	350,512,011	12,352,374	82,527,398	406,633,875	489,161,273	501,513,647
2014	825,543,120	340,572,144	11,661,780	77,067,677	396,241,519	473,309,196	484,970,976
2015	769,646,614	345,723,430	10,839,135	88,720,558	324,363,491	413,084,049	423,923,184
2016	703,934,300	290,696,607	10,012,556	60,801,906	342,423,232	403,225,138	413,237,694
2017**	700,896,386	287,264,169	9,450,661	58,016,557	346,151,182	404,167,739	413,632,217

\* Non-Revenue Water = Water Losses + Unbilled Authorized Consumption

\*\* Preliminary Results (FY2017 Water Audit is still ongoing and has not yet been finalized)

The Authority attributes the decline in water sales to the reduction in customers and to water consumption reduction measures after the rate increase implemented in July 2013 and to the drought experienced during fiscal year 2016. This is to be expected given that current economic conditions affecting the island are promoting water conservation among residential customers in order to reduce household expenses.

During the fiscal year ended on June 30, 2017, the estimated volume of NRW was 413.6 million cubic meters per year, or approximately 59.0% of annual water production, of which 57.7% was due to water losses (both apparent and real) and 1.3% was due to unbilled authorized consumption. It is estimated that 14% of NRW is due to commercial losses, while 84% is due to physical losses. The NRW volume (presented in the table above in cubic meters) for fiscal year 2017 shows a slight increase of only 0.1% when compared to the NRW of the prior fiscal year, but represents a reduction of 2.4% when compared to the NRW of fiscal year 2015 and a cumulative reduction of 25% when compared to the NRW volume for fiscal year 2012. From FY2012 to FY2017, the Authority reports to have reduced the amount (volume) of water produced (140 MGD reduction), amount of water losses (89 MGD reduction), and NRW (99 MGD reduction). As mentioned above, this improvement over the years is due in some part to a better understanding of the factors affecting the water loss estimates, water system optimization measures, and corrections made in water production and data collection practices. In addition, the Authority continues to carry out efforts to reduce NRW, such as: (i) leak repair campaigns to repair both leaks reported by the general public as well as leaks located through the proactive leak detection program started in 2014; (ii) reduction of pressures throughout the water system; (iii) continuous monitoring of water tank levels to prevent overflows; (iv) replacement of customer meters; and (v) a theft reduction program.

Reducing non-revenue water will have both a revenue enhancing impact and an expense reduction impact (as water production needs are reduced). The rate of leak occurrence in the Authority's Water System continues to be much higher than for that of mainland United States and Canadian water systems and contributes to the volume of NRW. With time, however, the Authority's steps in identifying and repairing leaks, replacing pipes and meters, and addressing commercial losses is expected to reduce the volume of NRW. The Authority intends on continuing with its meter replacement program to reduce as much as possible meter miss-reads and other inaccurate water consumption data. From February 2009 through June 2017, over 710,000 small meters (1-inch diameter or less) and 5,000 large meters (greater than 1-inch in diameter) have been replaced. Due to the Authority's current fiscal situation, however, the implementation of this initiative has slowed down since FY2016. Nonetheless, according to the Consulting Engineer's most recent asset condition assessment, after experiencing a reduction in performance as a result of staff reductions during fiscal year 2010, over the past five fiscal years the Authority has made significant improvements to its meter reading metrics and effectiveness in repairing leaks.

Further, the implementation of the Revenue Optimization Program, a component of the Authority's NRW reduction initiatives, has resulted in significant additional revenues to the Authority in the past five fiscal years. Specifically, during fiscal year 2016, the Authority collected approximately \$13.8 million above its budgeted amount for non-revenue water collection, raising collected amounts to \$112 million from the projected \$97.9 million for fiscal



year 2016. For fiscal year 2017, the Revenue Optimization Program resulted in additional revenues of approximately \$150 million, approximately \$52 million above its budgeted amount.

### **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 5,994 miles of lateral, trunk and interceptor sewers and transmission mains which carry wastewater to the 51 treatment plants from the points of connection with the Authority's customers. Approximately 824 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 59% 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 trunk and lateral sewers capital improvements 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 69% of the population being connected by 2030\*.

The Authority's 51 wastewater treatment plants are located throughout the island (all data provided is as of June 30, 2017). 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 for fiscal year 2017 was approximately 220 mgd. Total aggregate capacity of the treatment plants is approximately 378.6 mgd. The ten largest plants account for 78% of total Wastewater System capacity. By level of treatment, six plants are designed to provide tertiary treatment, 39 plants are designed to provide secondary treatment, and the remaining six facilities (aggregating 222 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 under EPA's Clean Water Act Section 301(h) waiver program. Should 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 Fiscal Plan's Ten-Year 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 an 80 mgd primary treatment plant commissioned in 1957. This plant was substantially rehabilitated and upgraded in 1999, 2008 and 2009, and is currently undergoing additional rehabilitation and capital improvements which are expected to be completed in the next four fiscal years. Other plants serve other portions of the San Juan metropolitan area, including the 45 mgd Carolina plant, commissioned in 1986, and the 52 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 (24 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. About 37 of the 51 plants in operation have capacities of less than 8 mgd, and 16 of these smaller plants have capacities of less than 1 mgd (all data provided is as of June 30, 2017). 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 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; Arecibo, where a composting facility serves this and several other plants, including Barceloneta; and at the Puerto Nuevo wastewater treatment plant. However, the Puerto Nuevo wastewater treatment

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\* As recommended in the Master Plan (as defined under CAPITAL IMPROVEMENT PROGRAM).

plant incinerator has been out of service and the Authority is currently in the process of rehabilitating it for compliance purposes and installing a co-generation unit.

The Authority approves sewer connections in accordance with the Authority's capacity management policy agreed to by EPA under the 2015 EPA Consent Decree. Under the capacity management policy, the Authority may not approve or add new sewer connections to any existing wastewater treatment facility if the average monthly flow for the specific facility exceeds 105% of the average permitted monthly flow for such facility for three consecutive months. 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. In fiscal year 2017, none of the plants comprising the Wastewater System capacity were affected by this limitation.

The condition of the Authority's existing Wastewater System facilities varies widely. In 2017, the Consulting Engineer inspected 23 of the 51 wastewater treatment plants currently owned by the Authority and 1.8% of the 824 wastewater pump stations and concluded that their condition ranged from poor to good, with effluent limit compliance and process control issues (at the treatment plants), equipment malfunctions, or inoperability (for the pump stations) along with inadequate security measures and general insufficient staffing (in select facilities) and monitoring being the greatest challenges. There was only one facility rated as poor compared to nine in the 2015 inspections. According to the Consulting Engineer, the greatest current concern is the physical condition of the facilities, which continues to deteriorate due to slowdown and suspension of the CIP and significant reduction in renewal and replacement. Of the 23 facilities inspected, four (17%) received a poor rating (Dorado, Corozal, Aguas Buenas and Rio Grande Estates) and nineteen (83%) received an adequate rating in terms of equipment/maintenance. However, of the nineteen facilities rated as adequate, fourteen were rated below 2.0 and if unattended, could fall to poor or unacceptable rating in the future. Process control continues to be a challenge in some of the facilities, even though the plant operators indicated that standard operating procedures and control strategies are followed. Also, future regulations may require additional capital improvements to comply with sterner levels of NPDES discharge parameters as per new WWTP's NPDES permits based on Water Quality Certificate and agreements in the 2015 EPA Consent Decree.

In order to review the Authority's buried infrastructure, the Consulting Engineer analyzed the data collected on sewer overflows including reported overflow occurrences and the Authority's attention time to repairs, but did not inspect such buried infrastructure. The Authority's sanitary sewer system overflows per 100 miles of sewer and their duration continue to be higher than for comparable United States or Canadian wastewater systems by a significant amount. The Authority is required under the 2015 EPA Consent Decree to implement sanitary sewer evaluations and has thus far complied with the 2015 EPA Consent Decree's milestones in this regard. The number of reported overflows has remained at more or less the same levels over the past five fiscal years, with up and down fluctuations from year to year. The Consulting Engineer has noted that from fiscal year 2015 to 2016, the number of reported overflows increased by 5%, but the Authority's operational performance metrics regarding effectiveness in attending overflows improved, as indicated by its average backlog achieving approximately 0.9 days of pending overflows and a backlog of 0.12 days of pending overflows with duration greater than seven days (although slightly increased from 2015). The Authority continued to work on the implementation of corrective measures to improve its performance and improve its effectiveness, or response time, in addressing sewer overflows throughout fiscal years 2016 and 2017.

Finally, 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 continue to require structural repairs and rehabilitation in order to reduce inflow and infiltration and to meet regulatory requirements.

The 2015 EPA Consent Decree requires PRASA to provide an assessment of the Infiltration/Inflow (I/I) of all its sewer systems, except for the seven Sewer Systems where I/I studies have already been completed. For the seven Sewer systems covered by the SSSEP and Sanitary Sewer System Repair Plan 1 requirements of the 2006 WWTP Consent Decree, the study found necessary repairs pertaining to 5 WWTP. The schedule for these repairs are included in the Prioritization System. To date, the Authority is presently unable to determine the total cost of the capital improvement projects to be required to bring the wastewater collection systems into regulatory compliance. In addition, future regulatory requirements may require additional capital improvements which are not contemplated in the Ten-Year CIP. As stated in the 2016 and 2017 CE Report regarding the Authority's buried infrastructure (for the Systems), an analysis of the Authority's renewal and replacement needs and budget is recommended in order to develop a sound renewal and replacement program that will allow the Authority to improve and extend the useful life of the Wastewater System, and potentially reduce its high rate of sewer overflows. In order to address the foregoing, the Authority has under the 2015 EPA Consent Decree undertaken the design of a comprehensive Sewer System Operation and Maintenance Program ("S2OMP") for the Puerto Nuevo wastewater collection system serving the San Juan metropolitan area, that will establish how the Authority will assess the plant's collection system and implement the necessary maintenance and operation measures to comply with EPA regulations, reduce the occurrence of sanitary sewer overflows, control the occurrence of combined sewer overflows and maintain acceptable levels of service. All matters pertaining to the foregoing contained in the 2006 EPA Consent Decree have been consolidated into and is superseded by the 2015 EPA Consent Decree. The S2OMP was completed and submitted for EPA's review and approval on June 30, 2016. By January 2017, EPA approved it. In addition, the Authority was required to submit annual reports on the status of the implementation of the S2OMP. The first annual report was submitted to EPA in May 2017.

The Wastewater System Ten-Year CIP is designed to comply with the 2015 EPA Consent Decree including the specific requirements for plant repair, improvement, expansions or plant decommissioning. See CAPITAL IMPROVEMENT PROGRAM and ENVIRONMENTAL MATTERS. In some of these cases, sewage flows will be diverted from an existing plant to facilities elsewhere. After completion of these projects, additional major improvements (not currently addressed in the Ten-Year 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 (all data provided is as of June 30, 2017).

*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, 2017:

<b>Fiscal Year</b>	<b>Residential</b>	<b>Commercial</b>	<b>Industrial</b>	<b>Governmental</b>	<b>Total</b>
2013	702,779	39,379	820	7,242	750,220
2014	709,147	37,275	748	6,937	754,107
2015	718,592	36,644	701	6,811	762,748
2016	720,491	36,081	679	6,728	763,979
2017	720,998	35,601	644	6,650	763,893

*Wastewater Sales.* The Authority meters water consumption but does not meter wastewater usage. Wastewater usage is estimated based on the consumption of water metered for clients with water and sewer services.

**Operation and Maintenance**

For many years the Authority did not devote sufficient resources (both financial and operating) to its infrastructure. 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.

However, 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 put in place an integrated maintenance program, which includes planned (i.e., preventive, predictive and proactive) and corrective maintenance activities for the Systems' above ground assets. Much of this effort has been memorialized in requirements set forth for improving operating and maintenance practices in the 2015 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.

The Consulting Engineer concludes in the 2016 and 2017 CE Report that the Authority's operation and maintenance practices are adequate. Currently, certain Authority operational and cost metrics (i.e., accounts per staff, cost per account, and cost per million gallons produced/treated) are comparable to the median values for utilities in the United States, a positive change when comparing the Authority's historical results with previously published benchmarks. However, these benchmark comparisons also show that the Authority has areas that could be improved and that represent large opportunities, especially with regards to the reduction of its NRW and increasing its billings and collections. The Authority continues to develop and implement operational initiatives with the ultimate goal of improving and optimizing its operations.

## **RATES, BILLINGS AND COLLECTIONS**

### **Rate Setting Powers**

The Act No. 40 of 1945 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 determined 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 therefore; and
- c. provide a margin of safety for making such payments.

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, under the Act, may change its rates and charges upon the holding of a public hearing after publication of reasonable notice. Act 21 also permits the Authority to impose temporary rate increases in case of a state of emergency for a period not to exceed one hundred eighty (180) days or for the duration of the state of emergency. Such emergency rate increase shall be made public before the date of commencement and must begin the public hearing process for such rate increase within thirty (30) days from the implementation of the rate increase. The Authority's rates are not subject to regulation by the Commonwealth or any of its public agencies.

In 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 has calculated its operating margin using the same formula of total operating expenses and debt service (including necessary reserves) divided by total revenues as it used to calculate the base year operating margin. If the ratio in a post-2009 fiscal year is higher than the base year ratio (.94 as set forth above), meaning its operating margin has declined, the Authority will be allowed under Resolution 2167 to adjust its rates upward by the percentage increase that is obtained by dividing the post-2009 fiscal year ratio by the 2007 fiscal year ratio. Regardless of the percentage increase called for by the prior sentence, the Authority may not, without implementing the uniform public hearing and review procedures called for in Act No. 21, adjust rates upward in any post-2009 fiscal year by more than 4.5% nor may its cumulative upward increase in rates from the aforesaid adjustment mechanism exceed 25%.

On February 1, 2013, in compliance with the requirements of the 2012 Fiscal Oversight Agreement (“FOA”; See “Fiscal Oversight Agreement” under THE AUTHORITY) by and between the Authority, the Commonwealth and the Government Development Bank, the Authority submitted to Government Development Bank an updated *Fiscal Improvement Plan* which presented annual deficits starting in fiscal year 2014. The Government Development Bank, in turn, informed that it would not appropriate additional funds to supplement the Authority’s revenues for fiscal year 2014. As a result, and in compliance with the 2012 Master Agreement of Trust by and between the Authority, Banco Popular as Trustee, and the bondholders, and the 2012 Fiscal Oversight Agreement, the Authority moved forward with its rate revision and increase process. The process was completed on July 3, 2013, when the Authority’s Governing Board approved the final rate structure and become effective on July 15, 2013 (approved under Resolution 2794). The Governing Board-approved rate structure includes increases of the Authority’s base and volume charges and it incorporates a new monthly fix rate, the Environmental Compliance and Regulatory Charge (“ECRC”), which varies by customer class and by either consumption or meter size. Subsequently, on December 18, 2013 the Governing Board amended the ECRC for non-residential customers.

The Authority also included an additional \$2.00 monthly special charge for all customers, to facilitate the development of CIP projects that focus on the sustainable management of water resources in accordance with the existing Environmental Public Policy Law (Act 416 of September 2004, as amended) and the Puerto Rico Water Resources Comprehensive Plan (2008); and both water and wastewater improvement projects in Non-PRASA systems.

*Future Rate Increase as included in the Authority’s Fiscal Plan.* To cover all projected operating expenses, CIP needs and debt service obligations (assuming debt restructuring or new external financing), the Authority included in its Fiscal Plan a series of consistent, but moderate rate increases as required by the Oversight Board. Therefore, assuming that all initiatives will be implemented and that a debt relief will be achieved through the current negotiations, the following annual rate increase per customer type shall be applied starting FY2018 through FY2026:

<b>Customer Type</b>	<b>Annual Rate Increase</b>
Residential	2.5%
Commercial	2.8%
Industrial	3.5%
Government	4.5%

As the proposed annual rate increase is less than 4.5% per year, the Authority is expecting to implement the change as stipulated by the existing Rate Resolution. See “THE AUTHORITY’S FISCAL PLAN” for more details.

### **Authority Budgeting Process**

The Authority’s long-term financial 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 MAT and the Office of Administration and Finance that is further reviewed and approved by the Executive President. Pursuant to the provisions of the Fiscal Oversight Agreement, the Authority is also required to provide to the Consulting Engineer and to the Puerto Rico Fiscal Agency and Financial Advisory Authority (AAFAF) a draft of its Annual Budget, capital expenditure budget and Disbursement Schedule no later than April 15 of each year. Final copies of the budget approved by Authority's Governing Board should be delivered to AAFAF no later than June 30 of each year. 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. With resolution 3038, the Authority's budget for fiscal year 2018 was approved by the Board on June 27, 2017. The Authority's ten-year Fiscal Plan was certified on August 26, 2017 and is currently undergoing a revision and a re-certification process. See "THE AUTHORITY'S FISCAL PLAN".

### **Rate Structure and Current Rates**

In compliance with the requirements of the 2012 FOA, on February 1, 2013, the Authority submitted an updated Fiscal Improvement Plan to GDB which included projected annual deficits beginning with fiscal year 2014. GDB in turn informed the Authority that the Commonwealth would not appropriate additional funds to supplement the Authority's revenues for such year. As a result, in compliance with the provisions of the Master Trust Agreement and the FOA, the Authority, commenced on February 21, 2013 a rate increase process following the procedure set forth in Act 21. On July 3<sup>rd</sup>, 2014 the Authority adopted the New Rate Structure, which became effective on July 15, 2013, pursuant to Resolution No. 2794 ("Resolution 2794"), composed of (i) a fixed base rate for service charge; (ii) service for consumption charge; (iii) environmental and regulatory compliance charge; and (iv) a \$2.00 fixed special fee. Under Resolution 2794, the Authority may adjust rates by 4.5% annually and 25% in the aggregate without complying with certain public hearing and review procedures required by Act 21 starting in fiscal year 2018.

The Environmental and Regulatory Compliance Charge ("ERCC"), which varies by customer class, consumption and meter size, included in the New Rate Structure, is an increase to the Authority's base and volume charges and it has incorporated as a new monthly fixed charge based on meter size. After facing public scrutiny and undergoing additional public hearings, the Board amended the ERCC billing structure for non-residential customers to a fixed charge based on meter diameter for customers with meters greater than 2" in diameter and a consumption based charge for smaller meters. Pursuant to Resolution 2794, the ERCC shall cover operating costs associated with environmental compliance and debt service for the Authority's indebtedness incurred to cover mandatory environmental compliance projects in the Authority's capital improvement program costs through fiscal year 2018.

The following table sets forth the approved structure for the ERCC for the Authority's residential clients included in Resolution 2794:

<b>Consumption Block</b>	<b>Residential</b>		<b>Water and Sewer</b>
	<b>Water</b>	<b>Sewer</b>	
0-10 m <sup>3</sup> Block 1	\$1.00	\$1.00	\$2.00
> 10 - 15 m <sup>3</sup> Block 2	\$6.50	\$6.50	\$13.00
> 15 - 25 m <sup>3</sup> Block 3	\$10.50	\$10.50	\$21.00
> 25 - 35 m <sup>3</sup> Block 4	\$17.50	\$17.50	\$35.00
> 35 m <sup>3</sup>	\$31.50	\$31.50	\$63.00

The following table sets forth the approved structure for the ERCC for the Authority's non-residential clients as amended and implemented on December 23, 2013:

**ERCC for Non-residential: Commercial/Government for meters <=2"**

<b>Consumption Block</b>	<b>Consumption</b>	<b>Water</b>	<b>Sewer</b>	<b>Water and Sewer</b>
<b>Block 1</b>	0-100 m <sup>3</sup>	\$1.18	\$0.98	\$2.16
<b>Block 2</b>	100-200 m <sup>3</sup>	\$1.22	\$1.01	\$2.23
<b>Block 3</b>	> 200 m <sup>3</sup>	\$1.26	\$1.04	\$2.30
<b>Block 4</b>	> 0 m <sup>3</sup>	\$1.54	\$1.22	\$2.76

**ERCC for Non-residential: Commercial/Government for meters >2"**

<b>Meter Size</b>	<b>Water</b>	<b>Sewer</b>	<b>Water and Sewer</b>
<b>3"</b>	\$482.00	\$482.00	\$964.00
<b>4"</b>	\$839.50	\$839.50	\$1,679.00
<b>6"</b>	\$2,340.00	\$2,340.00	\$4,680.00
<b>8"</b>	\$3,703.00	\$3,703.00	\$7,406.00
<b>10"</b>	\$5,924.50	\$5,924.50	\$11,849.00
<b>12"</b>	\$9,479.50	\$9,479.50	\$18,959.00

The New Rate Structure also includes an additional monthly \$2.00 Special Fixed Charge for all customers to promote the development of capital improvement projects that focus on sustainable management water resources, in accordance with the existing Environmental Public Policy Act (Act No. 416 enacted on September 22, 2004, as amended) and the Puerto Rico Water Resources Comprehensive Plan (2008). The Special Fixed charge collect \$29.1 million in fiscal year 2015 and \$29.0 million in fiscal year 2016, and is expected to generate approximately an average of \$28.7 million in billings during each subsequent year. Additionally, the Authority also included rate revisions to other services provided by the Authority, including, without limitation: new service connection fees, service re-connection fees and sprinkler system services. These revised rates are designed to cover the Authority's cost of providing such services and were implemented in phases over fiscal years 2014 through 2016.

*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 (applicable only to residential customers; non-residential customers no longer have a volume allocation in the base charge). The amount of the base charge is fixed for residential and non-residential customers and by 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 non-residential customers is \$24.37. If the water service line diameter is ¾-inch, the corresponding charges are \$18.40 and \$36.09, 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.

Although all customers pay for service, the Authority provides a 35% subsidy to the base charge for residents over 65 years of age who are eligible under certain government assistance programs. The Authority provided this 35% subsidy to approximately 701,126 customers as of June 30, 2017. Also, since fiscal year 2010, the Authority has been complying with the provisions of Act No. 69-2009, approved by the Legislative Assembly of Puerto Rico on August 11, 2009, which provides a subsidy to all public housing customers by limiting their monthly payments to the water and wastewater base charge. The Authority had approximately 52,182 customers that qualify for this subsidy as of June 30, 2017.

*Wastewater.* Wastewater service is billed together with water bills for those clients who have both services. The wastewater rate structure resembles the water rate structure, although the amounts are slightly lower. For example, the monthly base charge to wastewater residential customers with ½-inch and ¾-inch water service is \$9.11 while the corresponding charge to non-residential customers is \$20.10. The consumption component is calculated by

reference to the customer's water use, except for certain commercial and industrial customers that have metered sewer discharges. 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 from industrial and commercial clients 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.

The following tables set forth the monthly base charge for residential and non-residential customers, established pursuant to Resolution 2794 and in effect from July 15, 2013:

**Residential Monthly Base Charge per Account  
(includes first 10 cubic meters of monthly consumption)**

<u>Water Service Line</u>	<u>Water</u>	<u>Wastewater</u>	<u>Water &amp; Wastewater</u>
1/2" & 5/8"	\$ 10.60	\$ 9.11	\$ 19.71
3/4"	18.40	15.86	34.26
1"	30.23	20.36	50.59
1-1/2"	57.12	31.32	88.44
2"	97.24	53.56	150.80
3"	149.15	89.23	238.38
4"	335.50	156.69	492.19
6"	894.72	731.19	1,625.91
8"	1,431.55	835.64	2,267.19
10"	2,290.50	1,337.02	3,627.52
12"	3,664.80	2,139.25	5,804.05

**Residential Volumetric Rate per Cubic Meter<sup>1</sup>**

<u>Use Block (m<sup>3</sup>)</u>	<u>Water</u>	<u>Wastewater</u>	<u>Water &amp; Wastewater</u>
>10 – 15	\$1.25	\$1.02	\$2.27
>15 – 25	1.99	1.59	3.58
> 25-35	2.69	2.14	4.83
>35	2.84	2.27	5.11

<sup>1</sup> Under the Board-approved rate structure, the number of residential volumetric blocks was increased from three to four and the use block thresholds were modified.

**Non-Residential Monthly Base Charge per Account<sup>1</sup>**

<u>Water Service Line</u>	<u>Water</u>	<u>Wastewater</u>	<u>Water &amp; Wastewater</u>
1/2" & 5/8"	\$ 24.37	\$ 20.10	\$ 44.47
3/4"	36.09	31.85	67.94
1"	61.10	44.85	105.95
1-1/2"	122.43	75.23	197.66
2"	194.62	117.32	311.94
3"	436.87	243.86	680.73
4"	725.75	459.81	1,185.56
6"	1,858.58	1,474.93	3,303.51
8"	2,939.80	2,288.04	5,227.84
10"	4,703.70	3,660.87	8,364.57
12"	7,525.91	5,857.39	13,383.30

<sup>1</sup> Under the Board-approved rate structure, the allotment of the first 10 cubic meters of consumption previously included in the base charge was eliminated.



### Commercial and Government Volumetric Rate per Cubic Meter

<u>Use Block (m<sup>3</sup>)</u>	<u>Water</u>	<u>Wastewater</u>	<u>Water &amp; Wastewater</u>
>0 – 100	\$1.74	\$1.44	\$3.18
>100 – 200	2.16	1.73	3.89
> 200	2.84	2.27	5.11

### Industrial Volumetric Rate per Cubic Meter

<u>Use Block (m<sup>3</sup>)</u>	<u>Water</u>	<u>Wastewater</u>	<u>Water &amp; Wastewater</u>
>0	\$2.27	\$1.82	\$4.09

*Environmental and Regulatory Compliance Charge (“ERCC”)* The ERCC included in the New Rate Structure, which varies by customer class, consumption and meter size, is an increase to the Authority’s base and volume charges. Under Resolution 2794, the ERCC was a fixed charge based in meter size. After facing public scrutiny and undergoing additional public hearings under Act 21, pursuant to Resolution 2825 approved December 18, 2013 and effective December 23, 2013, the Board amended the ERCC billing structure for non-residential customers to a fixed charge based on meter diameter for customers with meters greater than 2” in diameter and a consumption based charge for smaller meters. Pursuant to Resolution 2794, the ERCC shall cover operating costs associated with environmental compliance and debt service for the Authority’s indebtedness incurred to cover mandatory environmental compliance projects in the Authority’s CIP costs.

The following table sets forth the proposed structure for the ERCC applicable to the Authority’s residential clients as included in Resolution 2794:

### Residential Environmental and Regulatory Compliance Charge (ERCC)

<u>Use Block (m3)</u>	<u>Water</u>	<u>Wastewater</u>	<u>Water &amp; Wastewater</u>
Base Charge (0 – 10)	\$ 1.00	\$ 1.00	\$ 2.00
>10 - 15	6.50	6.50	13.00
>15 - 25	10.50	10.50	21.00
>25 - 35	17.50	17.50	35.00
> 35	31.50	31.50	63.00

The following table sets forth the proposed structure for the ERCC applicable to the Authority’s non-residential clients as amended by Resolution 2825 and effective December 23, 2013:

### ERCC for Non-residential: Commercial/Government for meters less than or equal to 2”

<u>Consumption Block</u>	<u>Consumption</u>	<u>Water</u>	<u>Sewer</u>	<u>Water and Sewer</u>
Block 1	0-100 m <sup>3</sup>	\$1.18	\$0.98	\$2.16
Block 2	100-200 m <sup>3</sup>	1.22	1.01	2.23
Block 3	> 200 m <sup>3</sup>	1.26	1.04	2.30

### ERCC for Non-residential Industrial meters less than or equal to 2”

Block	> 0 m <sup>3</sup>	\$1.54	\$1.22	\$2.76
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**ERCC for Non-residential: Commercial/Government Industrial meters greater than 2"**

<u>Water Service Line</u>	<u>Water</u>	<u>Wastewater</u>	<u>Water &amp; Wastewater</u>
3"	\$ 482.00	\$ 482.00	\$ 964.00
4"	839.50	839.50	1,679.00
6"	2,340.00	2,340.00	4,680.00
8"	3,703.00	3,703.00	7,406.00
10"	5,924.50	5,924.50	11,849.00
12"	9,479.50	9,479.50	18,959.00

*Special Fixed Charge.* The New Rate Structure also includes an additional monthly \$2.00 Special Fixed Charge for all customers to promote the development of projects that focus on sustainable management of water resources, in accordance with the existing Environmental Public Policy Act (Act No. 416 enacted on September 22, 2004, as amended) and the Puerto Rico Water Resources Comprehensive Plan (2008). The Special Fixed charge billed \$29 million for both fiscal year 2016 and 2017, and is expected to generate approximately an average of \$28.7 million in billings during each subsequent year.

*Other Charges.* The following table sets forth the charges for residential and non-residential customers for certain activities and services, established pursuant to Resolution 2794 and in effect from July 15, 2013. These revised rates are designed to cover the Authority's cost of providing such services and will be implemented in phases over fiscal years 2014 through 2016.

**Revised Rates for Activities and Services**

<u>Type</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016 and beyond</u>
Reconnection – Residential	\$ 10.00	\$ 20.00	\$ 30.00	\$ 40.00
Reconnection – Commercial	10.00	31.67	53.33	75.00
Reconnection – Industrial	10.00	31.67	53.33	75.00
Fire Control Systems 1"	29.59	32.45	35.31	38.17
Fire Control Systems 2"	44.39	48.68	52.97	57.26
Fire Control Systems 3"	66.59	73.03	79.46	85.90
Fire Control Systems 4"	99.89	109.55	119.20	128.86
Fire Control Systems 6"	149.84	164.32	178.81	193.29
Fire Control Systems 8"	224.76	246.49	268.21	289.94
Fire Control Systems 10"	337.14	369.73	402.32	434.91
Fire Control Systems 12"	505.71	554.60	603.48	652.37
New (tap) Connection 5/8"	400.00	533.33	666.67	800.00
Meter Testing 1/2" a 1 1/2"	15.00	20.00	25.00	30.00
Meter Testing >= 2"	40.00	53.33	66.67	80.00

A new disconnection fee was included as part of the Authority's initiatives to enhance revenue in the Authority's Fiscal Plan. This initiative consists on the implementation of a new \$15 charge for the cost of disconnecting the service (in addition to the reconnection fee already in place as presented above). See "THE AUTHORITY'S FISCAL PLAN" for more details.

*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, 2017 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.

### Gross Water and Wastewater Billings

<u>Fiscal Year</u>	<u>Residential</u>	<u>Commercial</u>	<u>Industrial</u>	<u>Governmental</u>	<u>Total</u>
2013	480,130,184	129,219,381	36,093,672	122,114,583	767,557,820
2014*	684,222,855	220,732,709	52,095,392	163,231,306	1,120,282,262
2015	697,292,124	218,119,347	53,040,877	137,907,488	1,106,359,836
2016	637,678,532	198,209,894	48,422,678	121,496,624	1,005,807,728
2017	645,381,502	202,457,241	50,737,690	148,937,010	1,047,513,443

\* Information is presented according to the Authority's financial records. The information for fiscal year 2014 is official and may defer from preliminary previous information reported. The increase in billings from fiscal year 2013 to fiscal year 2014 is related to the implementation of the new Rate Structure on July 15, 2013, as amended.

### 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 incurred. However, for Master Trust Agreement purposes, Authority Revenues are recognized when collected. Current Expenses are recognized when accrued for purposes of the Rate Covenant and the Annual Budget and on a cash basis for all other purposes, including the Disbursement Schedule. See the definition of Current Expenses in *Summary of the Trust Agreement and Summary of the Proposed Amendment to the Trust Agreement* in *Appendix III* to the Official Statement.

The Authority's policy is to treat accounts past due for thirty days or more as in arrears, and its collection policies for arrearages include account monitoring, contacting customers, and service termination. All 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, the Act 33 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 provides all of its customers with the option to pay past due amounts under a payment plan.

As mentioned, starting on July 15, 2013, the Authority revised its service reconnection charges, among other charges, for all customer accounts in an effort to further mitigate account collection risk. For fiscal year 2016 onwards, reconnection charges for residential and for commercial and industrial accounts were raised to \$40.00 and \$75.00, respectively; up from the \$30.00 and \$53.33 respective reconnection charges in effect during fiscal year 2015.

The Authority's preliminary collection rate during fiscal year 2014, following the implementation of the New Rate Structure was 93% (this percentage takes into account a 94% collection rate for industrial, commercial and residential accounts resulting from, among other things, a new revenue optimization initiative implemented by the Authority that has collected \$103 million during fiscal year 2014, and certain one-time, extraordinary collections from government agencies of amounts due for prior fiscal years). The Authority's collection rate for fiscal year 2015 was 96.9%. Unlike historical results, the Authority's collections surpassed its billings during fiscal year 2016 by \$6.5M thus achieving over 100% collection rate. Factors contributing to this unusual, and likely one-time, result include: (1) lower billings because of reduced customer consumption and water control measures implemented during the drought, (2) time lag between billings and collections due to the Authority's billings cycle, and (3) proactive collections efforts of government accounts. The Authority's collection rate for fiscal year 2017 was 96.8%. See "The Water System" under THE WATER AND WASTEWATER SYSTEM.

For more information on Rate, Billings and Collections, please refer to the 2016 and 2017 Consultants Engineer's Report, which is published in the Authority's web site "Acueductospr.com".

## 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” below.

### Water System Regulation

The Safe Drinking Water Act 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 Safe Drinking Water Act enforcement process. In Puerto Rico, enforcement responsibility for Safe Drinking Water Act regulations developed by EPA is delegated to DOH.

Amendments to the Safe Drinking Water Act in 1986 enhanced the public health protection mandated by the Safe Drinking Water Act 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 Safe Drinking Water Act 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 and Copper 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 when trigger levels are exceeded. 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, as needed, to reduce the corrosivity of the water so that lead concentrations at customers’ taps are reduced.

Pursuant to the Lead Rule, the Authority is required to conduct sampling to detect the presence of lead and copper 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. These required remedial actions include conducting a public education program and the implementation of a corrosion control treatment and/or service replacement program in affected communities where applicable levels were exceeded. These programs have been implemented in those facilities that have exceeded the trigger levels of the Lead Rule.

*Annual System Report.* The Safe Drinking Water Act 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 Safe Drinking Water Act 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](http://www.acueductospr.com).

*Security and Bioterrorism.* The Public Health Security and Bioterrorism Response Act of 2002 mandate 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.

*Drinking Water Regulations.* In January 2006, EPA published two drinking water supply regulations, developed pursuant to the Safe Drinking Water Act: the Long Term 2 Enhanced Surface Water Treatment Rule ("LT2") and the Stage 2 Disinfectant and Disinfection By-Products Rule ("DBP2"), which became effective March 2006. The LT2 rule defines four (4) compliance schedules that are based on the population served by the Systems and designed to allow the Systems to comply simultaneously with the DBP2.

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 has completed all monitoring phases of the LT2 Rule compliance schedule and has sampled and characterized its water sources to determine treatment requirements. Eight of the Authority's water systems were initially identified as requiring capital improvements – namely, the Aguas Buenas, Orocovis, Barranquitas, Luquillo, Morovis Urbano, Morovis Sur, Vega Baja and Quebrada-Camuy Water Filtration Plants, and these improvements have been commenced. As of the date hereof, at least three of such projects have been completed, while the remaining five are pending the close-out documentation processes. Additionally, the construction and completion of 20 Schedule 4 capital improvement projects to other systems is required to remove microorganisms required to achieve compliance with the LT2 Rule. The Five-Year CIP does not include funds to cover these pending capital improvement projects within the required LT2 Rule deadlines. Therefore, on May 12, 2015, the Authority and DOH submitted a joint motion to amend the 2006 Drinking Water Settlement Agreement to include these projects under a revised schedule of compliance. Specifically, under this proposed amendment, the Schedule 2 and Schedule 3 LT2 Rule compliance projects would be included in the Base List and the Schedule 4 projects would be included in a Prioritization System which would allow for extension of the deadlines for completion of these projects. This joint motion was granted by the court on May 22, 2015. See "Amendments and Modifications to Existing Consent Decrees" in ENVIRONMENTAL MATTERS.

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 systems. The foregoing notwithstanding, the Authority is currently in compliance with the requirements of the DBP2 Rule. In this respect, the Authority has performed Operational Level Evaluations and complied with all regulation and action plans submittals required thereunder. Some of these evaluations have included the performance of hydraulic modeling. In most cases, the Authority has been able to implement the recommendations of its consultants resulting from such assessments. Additional recommendations, requiring improvements such as pump and control system replacements, among other like projects, are currently under evaluation of the funds necessary to comply with such recommendations. According to the 2017 and 2016 Consulting Engineering Report, on average, the Authority's WTPs were rated "adequate" with a score of 2.1. This is indicative of the fact that approximately 77% of the WTPs are able to produce water that meets standards for disinfectant residual, turbidity, and disinfection byproducts (DBPs) at least most of the time.

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

Authority is currently complying with the GWR monitoring requirements by the Total Coliform Rule monitoring. Under the GWR, the Authority has developed action plans for the systems that had showed risk for microbial pathogens, but additional corrective actions to reduce microbial pathogens may be required in systems that continuously show contamination. In order to assess the foregoing, the Authority and DOH agreed to categorize the GWR systems into five different groups based on their priority.

As 2017 the Authority has completed the Ground Water Under the Influence (GWUDI) assessment on 138 out of 155 wells initially identified at risk due to their proximity to superficial body of water or geological conditions. The wells not assessed were due to water quality sampling interrupted for different reasons, problems with the sampling schedule and operational conditions of the wells. From the water quality assessments, 24 well were identified as No-GWUDI and 114 Potential GWUDI. The 114 wells identified as Potential GWUDI, 30 has been sampled for Microscopic Particulate Analysis (MPA) and 28 resulted No-GWUDI, one GWUDI (closed) and one Potential GWUDI awaiting further evaluation. The 84 remaining wells are schedule for MPA sampling, 20 this year and the rest divided in groups of ten the following years.

The Safe Drinking Water Act requires EPA to conduct research into the occurrence and health effects of new and emerging contaminants. According to the most recent Consulting Engineer's Report, there are several contaminants that may be regulated in the future based on this requirement. The Consulting Engineer could not make any determinations regarding the likely impact on the Authority due to potential regulations due to these candidate contaminants, but recognized that treatment for some of these contaminants may require more advanced technologies. As of the June 30, 2017, the Authority has not identified any specific proposed regulatory requirements that may affect it in the next five years.

On March 16, 2011, EPA published its memorandum on "Working in Partnership with the States to Address Phosphorus and Nitrogen Pollution through the Use of a Framework System for State Nutrient Reductions". Such memorandum reaffirmed EPA's commitment to partner with states and collaborating stakeholders to make progress in accelerating the reduction of nitrogen and phosphorus loadings nationwide. Part of the framework proscribed by EPA in its memorandum includes the development of numeric nutrient criteria for protecting and restoring the designated uses of a body of water. The EQB has completed and implemented numeric criteria for phosphorus for all lakes/reservoirs, rivers/streams and estuaries. Nevertheless, in regards to the numeric criteria for nitrogen, the EQB has completed the planning for development of criteria, data collection and analysis phases of the framework for lakes/reservoirs and streams/rivers, and presented EPA with its proposed criteria on June 30, 2014. As approved by EPA, the criteria was implemented in April 2016. As a result of such implementation the Authority will have to undertake the necessary actions to ensure its compliance with the new criteria in all of its water treatment plants and wastewater treatment plants, which could result in annual expenditures of up to \$55 million for mandatory compliance CIP projects and operation and maintenance initiatives related thereto. The Authority is prepared to comply with new regulations regarding numeric nutrient criteria for nitrogen by requesting interim limits, as necessary, for its water and wastewater treatment plants.

In general, the Ten-Year CIP does not include projects intended solely to address future regulations, but the Authority is implementing some improvement projects with consideration for compliance with the LT2 Rule. In addition, the Authority has established a policy for new water treatment plants to be designed with the appropriate effluent turbidity levels to aid in compliance with the LT2 rule.

### **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 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 and their associated collection systems appurtenances. 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 industrial pretreatment program and the Fats, Oils and Grease (FOG) program.

The rehabilitation, improvement and expansion of the Wastewater System are required in significant respects by the Clean Water Act. In particular, the Clean Water Act requires publicly owned treatment works to achieve secondary treatment by a certain date, with some exceptions. In general, the Ten-Year CIP contains projects including plant upgrades and capacity expansion 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 operating costs. The Authority has not updated these estimates since the execution of the memorandum of agreement but believes that these capital costs may be significantly in excess of these amounts. The Authority, however, continues to operate these primary treatment plants pursuant to the Section 301(h) waivers and believes that it will continue to obtain such waivers when the permits for these plants are renewed. To date, the Carolina, Bayamón, Aguadilla, Arecibo and Puerto Nuevo wastewater treatment plants have renewed their 301(h) permits, while Ponce is operating under administrative extensions, pending final approval of their applications for permit renewal. To date the federal funding for the construction of these facilities has not been received or appropriated, nor does the Authority believe that the Commonwealth is in a position to provide the required "matching share" of funds for such constructions. Under the memorandum of agreement, the deadline for the construction of the projects would commence upon the receipt of such funds.

In addition, as further discussed below, in connection with the Wastewater System, the 2015 EPA Consent Decree, which also addresses non-compliant sanitary sewer overflows, requires the Authority to conduct a sanitary sewer evaluation and implement a related repair plan at several specified sewer systems. The Authority has also received EPA administrative orders under the Clean Water Act requiring the Authority to cease non-compliant discharges into bodies of water and implement remedial measures addressing sanitary sewer and combined system overflows and a notice from the Department of Justice recommending the filing of federal action against the Authority for alleged violations of the Clean Water Act for unauthorized combined sewer discharges from the Puerto Nuevo Regional wastewater treatment plant. The Authority is the owner or the operator of sewer systems that were either designed and/or constructed in the mid-twentieth century or before as combined sewer systems or that operates as such, including the Puerto Nuevo wastewater collection system, portions of which have been identified as operating as combined sewer systems. Typically, combined sewer systems transport all of their wastewater to wastewater treatment plants, where wastewater is treated and then discharged into a body of water. During rainfall events, wastewater volume in combined sewer systems can exceed the capacity of the sewer system or the wastewater treatment plant causing CSO that discharge storm water influenced wastewater into nearby bodies of water. The Clean Water Act prohibits unpermitted CSO, and in order to establish a national framework to control these discharges, EPA issued the Combined Sewer Overflow Control Policy ("CSO Policy"). The CSO Policy requires permittees to engage

in characterization of their combined sewer systems and CSO discharges, demonstrate compliance with certain technology and water quality-based controls identified in the policy, and develop long-term CSO control plans to achieve compliance with the Clean Water Act (these controls are termed “Nine Minimum Controls” and “Long Term Controls”, respectively) which EPA may include in the plant’s discharge permit. In this regard, the Authority has received EPA administrative orders under the Clean Water Act requiring the Authority to cease non-compliant discharges into bodies of water related to Puerto Nuevo wastewater collection system and implement remedial measures addressing these overflows.

Although detailed information regarding all combined sewer systems in this collection system is not yet available, the Authority is currently performing sanitary sewer evaluations to determine which systems are conveying both sanitary wastewater and storm water and to identify needed corrective actions as part of achieving compliance with the Nine Minimum Controls/Long Term Control Plan requirements established for the systems in the current Puerto Nuevo wastewater treatment plant’s NPDES permit. Until the evaluation process of these combined sewer systems is completed, the Authority has obtained permitted outfalls for certain identified CSO outfalls. As part of the Authority’s efforts to characterize and comply with the Nine Minimum Controls/Long Term Control Plan requirements for the collection system of the Puerto Nuevo wastewater treatment plant, the Authority has proposed certain additions to the operating and maintenance program of such facility, have been included in the 2015 EPA Consent Decree.

On March 16, 2011, EPA published its memorandum on “Working in Partnership with the States to Address Phosphorus and Nitrogen Pollution through the Use of a Framework System for State Nutrient Reductions”. Such memorandum reaffirmed EPA’s commitment to partner with states and collaborating stakeholders to make progress in accelerating the reduction of nitrogen and phosphorus loadings nationwide. Part of the framework proscribed by EPA in its memorandum includes the development of numeric nutrient criteria for protecting and restoring the designated uses of a body of water. EQB has completed and implemented numeric criteria for nitrogen and phosphorus for all lakes/reservoirs, rivers/streams and estuaries. As approved by EPA, the new criteria implemented by EQB by amendment to its Water Quality Standards Regulation was made effective on September 30, 2014. As a result of the latter, the Authority will have to undertake the necessary actions to ensure its compliance with the new phosphorus and nitrogen criteria in all of its water treatment plants and 35 of its wastewater treatment plants discharging in rivers and streams, which could result in an aggregate of approximately \$1.0 billion in capital improvement projects and annual expenditures of approximately \$55 million for operation and maintenance initiatives related thereto. Since these capital improvement projects are not included in the Existing Consent Decrees nor under the 2015 EPA Consent Decree, were no funds assigned under the current Ten-Year CIP for the construction of such projects. Rather, the Authority proposes to include these projects in the Prioritization System that is included in the 2015 EPA Consent Decree. As of the date hereof, the Authority has not received any permits that contain the above criteria. Renewals of such permits will be issued to the Authority subject to the completion of the internal administrative procedures. Pending the issuance of such permits, the exiting permits will be deemed extended. The foregoing notwithstanding, the Authority expects to request interim limits for its water and wastewater treatment plants in order to comply with newly implemented regulations regarding numeric nutrient criteria for nitrogen and phosphorus.

*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 Existing Consent Decrees. These include, but are not limited to, the imposition of more stringent monitoring limits for parameters such as fecal coliform 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 Ten-Year CIP and the Authority’s financial projections. Generally, future regulatory requirements provide for a period of time to achieve compliance and/or compliance plans. 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. The Authority would expect, however, to include any such new capital improvement projects under the Prioritization System as included in the 2015 EPA Consent Decree.



## Regulatory Compliance

*Clean Water Act and Safe Drinking Water Act Litigation against the Authority.* 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 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 United States 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.

*Previous Consent Decrees.* EPA's litigation against the Authority spans several decades resulting in various consent decrees, administrative orders and settlement agreements in connection with alleged violations of the Clean Water Act. Up until 2015, the Authority was subject to two consent decrees executed with EPA in 2006 and 2010 (the 2006 EPA Consent Decree and the 2010 EPA Consent Decree) for alleged violations of the Clean Water Act, which consolidate the requirements of prior enforcement actions and supersede these (with the exception of a prior Pump Station Consent Decree known as the Pump Station Consent Decree or "PRASA IV", which is in existence but has been complied with). Under these consent decrees, the Authority agreed to comply with federal mandates to meet schedules for numerous and extensive plant capital and operating and maintenance improvements in wastewater treatment plants (within the Wastewater System, as well as wastewater treatment facilities and sludge treatment plants within the Water System), among others. In addition, the consent decrees contain stipulated penalties for violations of their requirements. The Authority was also the subject of numerous administrative orders issued by the DOH and several settlement agreements with the DOH for alleged violations by its water treatment plants of the water quality contaminant limits and related requirements under the Safe Drinking Water Act.

*Pump Station Consent Decree.* The Authority is subject to a consent decree addressing violations of Clean Water Act requirements in certain of the Authority's wastewater pump stations, which was entered on or about July 2, 2003, and modified in 2007 (the Pump Station Consent Decree, also known as "PRASA IV"). The Pump Station Consent Decree required the Authority to implement 111 capital improvement remedial projects, pay stipulated penalties for bypass events associated with the pump stations, complete a Supplemental Environmental Project ("SEP") and implement an Integrated Preventive Maintenance Program ("IPMP") and a Spill Response and Clean-up Plan ("SRCP"). The Authority undertook and completed all 111 capital improvement projects at an approximate cost of \$16 million, and has completed the SEP. The Authority has paid and continues to pay from time to time stipulated penalties under the Pump Station Consent Decree for bypass events when these occur. Although no capital improvement requirements remain under the Pump Station Consent Decree, the IPMP and stipulated penalties include therein were incorporated to the 2015 EPA Consent Decree. A more in-depth description of the projects completed and the plans implemented under the Pump Station Consent Decree is included in the 2017-2016 Consulting Engineering Report.

*2006 EPA Consent Decree.* 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 of five drinking water treatment plants and sewage discharges from a portion of the Puerto Nuevo wastewater treatment plant's collection system without an NPDES permit. Under a guilty plea agreement, the Authority was placed on probation for five years, commencing on April 19, 2007 and paid a criminal fine of \$9 million to the federal government, among other things. The probation term expired on April 18, 2012.

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 (as superseded by the 2015 Consent Decree) and has met all deadlines to date. 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, as amended.

The 2006 EPA Consent Decree required the Authority to undertake extensive remedial and capacity expansion measures over the next 15 to 20 years at all of its wastewater treatment plants and sanitary sewer and collection systems (obligating the Authority to complete approximately 145 short-, mid-, and long-term capital projects). It also required the installation of dechlorination equipment, the installation of flow proportional chlorination equipment, the repair and replacement of equipment, and the implementation of a chemical treatment program for phosphorous removal, among other things. In addition, the 2006 EPA Consent Decree required the implementation of a \$3 million SEP (designed to provide sewer service to an unsewered community located at the La Plata Watershed and approved by EPA). Furthermore, the 2006 EPA Consent Decree required the Authority to adopt and implement an Integrated Preventive Maintenance Program (“IPMP”) and a Spill Response and Cleanup Program (“SRCP”) for its collection systems and wastewater lift stations. Moreover, it required the Authority to prepare and implement Sanitary Sewer System Repair Plans (“SSSRP”) for five (5) of seven (7) the Authority’s wastewater collection systems identified on the 2006 EPA Consent Decree. Sanitary Sewer System Evaluation Plans (“SSSEPs”) were performed for these initial seven systems, of which 5 demonstrated the need to perform system wide repairs. Furthermore, the Authority is required to update the 2008 island wide Preliminary Sanitary Sewer System Evaluation Plan (“PSSSEP”) for the remainder of the Authority’s collection systems and will be required to perform specific SSSEPs for the Facilities the PSSSEP identifies as requiring further evaluation (“SSSEPs 2”). Finally, as a result of those studies, the Authority may be required to implement repairs on those systems as well as needed. Although the emphasis of these studies and repairs is the elimination of sources of non-sewer infiltration and inflow it also focuses on general repair needs of the systems to maintain proper operation.

Under the 2006 EPA Consent Decree, the Authority was also required to pay stipulated penalties for failure to comply with various requirements contained therein, some of which are deposited in an escrow account. The Authority has the opportunity to recover certain stipulated penalties in this escrow account if it complies with or completes required remedial measures and capital improvement projects before the applicable completion deadlines, which have already been met. EPA oversight is augmented by the Authority’s tri-annual submission of progress reports and progress meetings with EPA.

Since 2006, the Authority has spent over \$600 million in its efforts to comply with the 2006 EPA Consent Decree. As of December 2015, the Authority had completed the following actions required under 2006 EPA Consent Decree: all short-term and mid-term remedial actions; the PSSSEPs, the SSSEPs, and the SSSEPs 2; the implementation of the SRCP and IPMP relating to the wastewater treatment plants; the SEP (which was completed on schedule and is currently in operation; the completion report will be included in the Triannual Report); and certain long-term capital improvement projects. With respect to the long-term capital improvement projects, the Authority completed all long-term capital improvement projects included in the first term of the 2006 EPA Consent Decree, except for the wastewater treatment plant in Barceloneta, for which the Authority submitted, on December 17, 2007, final disinfection alternative technical report for the bacteria mixing zone at such plant, pursuant to which, in the Authority’s view, the capital improvement project would not be necessary. To date, the Authority has not received a final determination from the EQB with respect thereto, and has therefore not undertaken the construction of such project. The Authority also completed the following Term 2 and Term 3 projects ahead of schedule: El Torito (Term 2), Mayagüez (Term 2), Maunabo (Term 2), Playa Santa (Term 2), Ponce (Term 2), Morovis (Term 2), Boquerón (Term 2), Orocovis (Term 2), Alturas de Orocovis (Term 2), Guayanilla (Term 2), Carolina (Term 3), Peñuelas (Term 3) and Ciales (Term 3). As previously mentioned this 2006 Consent Decree is currently superseded by the 2015 Consent Decree and it should be noted that a number of the Term 2 and Term 3 capital project deadlines were renegotiated and included in the 2015 EPA Consent Decree. See “Amendments and Modifications to the Previous Consent Decrees” under ENVIRONMENTAL MATTERS.

*2010 EPA Consent Decree.* In April 6, 2010, the United States of America, at the request of EPA, and the Authority entered into the 2010 EPA Consent Decree to resolve alleged Clean Water Act and Safe Drinking Water Act violations at the Authority’s water treatment plants and certain unresolved administrative enforcement actions and existing consent decrees related to sludge treatment systems (“STS”) at water treatment plants. The 2010 EPA Consent Decree implemented a system-wide NPDES permits compliance plan and measures to properly handle sludge disposals and the discharge of pollutants from water treatment plants, superseded prior administrative enforcement actions and water treatment plant STS consent decrees, and consolidated all STS compliance projects, simplifying both the Authority’s management and regulatory agency monitoring of required improvements. The 2010 EPA

Consent Decree was approved by the United States District Court for the District of Puerto Rico on August 24, 2010 and applied to all of the Authority's water treatment plants and three unfiltered plants located at Naguabo, Lares and Las Marías. As previously mentioned this 2010 Consent Decree is currently superseded by the 2015 Consent Decree.

Under the 2010 EPA Consent Decree, the Authority had to implement remedial measures to address wastewater discharges at water treatment plants owned and operated by the Authority, as well as a \$2.5 million SEP to provide for an aeration system for Lake Toa Vaca. These remedial measures were to be completed in three phases. As of December 31, 2015, all short-term and mid-term remedial measures, all first term capital improvement projects, three second term capital improvement projects, third term capital improvement projects for six of its facilities, implementation of EPA-approved IPMP, capacity evaluation plans, operator training program, alternative power units ("APUs") for all STSs installation of flow meters and high level indicators, standard operating procedures for filter backwashing and washing of process treatment units, remedial actions for unfiltered plants and implementation of standardized recordkeeping were completed. Also, the Authority must monitor and sample the wastewater discharges from each STS, and comply with the respective interim limitations set forth in the 2010 EPA Consent Decree. It should be noted that a number of Term 2 and Term 3 capital improvement project deadlines were renegotiated and included in the 2015 EPA Consent Decree. See "Amendments and Modifications to the Previous Consent Decrees" under ENVIRONMENTAL MATTERS.

Existing STS were to be evaluated to determine: (1) whether the existing STS has the capacity to adequately treat the water treatment plant wastewater discharges to comply with the effluent limitations contained in its NPDES permit; and (2) identify the actions the Authority must undertake to ensure that wastewaters are adequately treated including, but not limited to, the construction of additional facilities to adequately treat the sludge and achieve compliance with the respective NPDES permit. Additionally, the Authority must provide the necessary training to its operators, standardize all record keeping and reporting procedures for STS at its water treatment plants, and operate and maintain all STS in accordance with EPA-approved integrated preventive maintenance program.

Finally, pursuant to the 2010 EPA Consent Decree, the Authority paid a \$1.0 million civil penalty and is required to pay stipulated penalties for failure to comply with various requirements of the 2010 EPA Consent Decree, some of which may be partially returned to the Authority if it completes remedial measures prior to the applicable deadlines.

From the commencement of these litigations against the Authority through May 2006, the Authority had paid substantial amounts (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. Since 2006, the Authority's record of compliance with its existing consent decrees, administrative orders and settlement agreements and the noticeable transformation in communications with regulatory agencies further supports the Authority's efforts and ongoing commitment to bring its systems into compliance. A description of prior consent decrees is included in the 2017-2016 Consulting Engineering Report.

*Existing Consent Decrees.* On September 15, 2015 the DOJ, acting at the request of EPA, filed the Complaint against the Authority and the Commonwealth, as a required party (pursuant to Section 309(b) and (d) of the Clean Water Act (defined below)), in the District Court seeking injunctive relief and the assessment of civil penalties against the Authority for violations of the Clean Water Act, 33 USC §1251, et seq. Specifically, the Complaint alleges the Authority violated Section 301(a) of the Clean Water Act, by discharging pollutants, and/or failed to comply with the terms of the NPDES permits issued to the Authority's facilities under Section 402 of the Clean Water Act, as well as failed to report unauthorized discharges required under such permits.

Concurrently with the filing of the Complaint, DOJ also filed the 2015 EPA Consent Decree executed among EPA, the Authority and the Commonwealth settling the matters addressed in the Complaint, under the terms agreed upon by the Authority and EPA. The 2015 EPA Consent Decree is the result of an extensive negotiation process aimed, among other things, at resolving the claims alleged in the Complaint and the requirements of previous consent decrees (the Pump Station Consent Decree, also known as "PRASA IV", the 2006 EPA Consent Decree and the 2010 EPA Consent Decree) related to the allegations included in the Complaint. Pursuant to the terms of the 2015 USEPA Consent Decree entered on May 10, 2016, on May 23, 2016, Judgement was entered dismissing the Complaint with prejudice and civil case number 15-2283 was closed. The 2015 EPA Consent Decree supersedes all other EPA Consent Decrees. In the 2015 EPA Consent Decree, EPA and the Authority acknowledge that the work to be undertaken under such agreement will enable the Authority to better understand its wastewater system, but will not resolve all of the

Authority's Clean Water Act obligations with respect to such system. See "Amendments and Modifications to the Previous Consent Decrees" under ENVIRONMENTAL MATTERS.

*Drinking Water Settlement Agreement.* The Water System was subject to approximately 180 administrative orders arising from enforcement actions by DOH (EPA's local delegate for Safe Drinking Water Act implementation and enforcement) against the Authority for violations of the Safe Drinking Water Act and to three administrative consent agreements with DOH addressing monitoring and turbidity violations. On December 2006, the Authority entered into the 2006 Drinking Water Settlement Agreement, 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 Drinking Water Act and the violations by the Authority of two of the prior consent agreements. 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 on June 16, 2008, and is now in effect. The 2006 Drinking Water Settlement Agreement replaces and supersedes all prior DOH administrative orders and consent agreements.

The 2006 Drinking Water Settlement Agreement provides for remedial and compliance actions by the Authority in its water treatment plants in accordance with agreed-upon schedules and for the payment of stipulated penalties for non-compliance. 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. Additionally, under the 2006 Drinking Water Settlement Agreement, the Authority paid a \$1 million civil penalty to the Commonwealth and is required to pay stipulated penalties for violations of the agreement. Certain stipulated penalties paid by the Authority may be returned to the Authority under certain circumstances to be used to finance any action directed at achieving or maintaining compliance with the Authority's obligations under the 2006 Drinking Water Settlement Agreement and under local and federal laws applicable to the Water System. The Authority submits quarterly progress reports to the DOH to inform on its compliance with the terms of the 2006 Drinking Water Settlement Agreement and self-assesses any applicable stipulated penalties. As of December 2015, a list of all 504 remedial actions classified as short-term measures have been completed, as well as all 115 remedial actions classified as mid-term remedial measures. Long-term measures were divided into three terms:

(i) Term 1 to be completed no later than December 31, 2011, included 38 projects, which were all completed on schedule, except for a water treatment plant located in the municipality of Guayama which was completed within the revised deadline of October 31, 2014;

(ii) Term 2 projects are to be completed on or before December 31, 2016, included a total of 19 projects of which thirteen have already been completed; and

(iii) Term 3 projects are to be completed on or before December 31, 2016 includes a total of 13 projects of which 5 have been completed as of the date hereof.

It should be noted that a number of the Term 2 and Term 3 capital project deadlines and implementation are being renegotiated with DOH and are expected to be included in the Proposed DWSA Amendment.

Although the Authority is committed to bringing the Systems into material compliance with applicable law, it is highly probable that the Authority can not to comply fully with all the requirements of the above mentioned consent decrees, administrative orders and 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 Ten-Year CIP) in the future. To prepare for this potential liability, the Authority makes a risk assessment of the average exposure for payment of stipulated penalties and non-compliance with its consent decrees, administrative orders and settlement agreements and creates a reserve for the amounts it believes should be sufficient to pay the stipulated penalties at current levels of non-compliance. In addition, the Ten-Year 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 Ten-Year CIP will result in regulatory compliance. However, the Authority expects to comply with its regulatory obligations in the near future.

*Impact of Ten-Year CIP.* As set forth in more detail under CAPITAL IMPROVEMENT PROGRAM, the Authority estimates that the capital cost of complying with the terms of the projects included in the 2015 EPA Consent Decree and proposed to be included in the Proposed DWSA Amendment being negotiated with DOH, based on project cost estimates included in the Ten-Year CIP. These estimates assume that the Proposed DWSA Amendment will be approved under terms substantially similar to those currently being negotiated with DOH, providing for extended deadlines for completion of capital improvement projects under the Existing Consent Decrees. Other Regulatory Projects consist of: projects to comply with the LT2 Rule, capacity evaluation projects for compliance of STSs, and certain other new projects required to comply with regulatory requirements not covered by the Existing Consent Decrees. New Mandatory Projects are certain projects resulting from negotiations with EPA. See “Amendments and Modifications to the Previous Consent Decrees” in ENVIRONMENTAL MATTERS.

Despite the inactivation of the CIP, there has been no negative impact regarding compliance with mandated requirements under the 2015 EPA Consent Decree and the 2006 Drinking Water Settlement Agreement, as amended, with DOH. However, as of June 30, 2017 the CIP is not reactivated, time extension requests to EPA and DOH was requested. The Authority has already given notice to the Regulatory Agencies that there is a possibility that time extensions will be required and thereby requested by the Authority. Due to the suspension of the CIP, the DOH has granted a time extension for the remaining Term 2 long term capital projects and further negotiations will take place in 2017 to continue the renegotiation process of the Proposed DWSA Amendment considering the suspension of the CIP.

### **Amendments and Modifications to the Previous Consent Decrees**

In light of the challenges faced by the Authority, resulting from the continued uncertainty and strain on the Commonwealth’s economy, although it is currently in material compliance with the capital improvement requirements of the Previous Consent Decrees, the Authority requested and negotiated the 2015 EPA Consent Decree and is in the process of negotiating the Proposed DWSA Amendment with DOH in an effort to modify certain pending requirements under the Consent Decrees, in order to re-align compliance priorities with the Authority’s current financial condition and economic prospects.

Among others, the 2015 EPA Consent Decree provides for: (i) the postponement or advancement in deadlines and completion dates of certain projects currently included in the Authority’s CIP; (ii) a revision to the scope of work negotiated for certain projects, in order to better address certain facilities’ current needs; (iii) the elimination of certain projects included in the 2006, 2010 and PRASA IV Consent Decrees, that due to declining population trends and current compliance with EPA regulations are no longer necessary or because such projects have already been completed and certified as such; (iv) the inclusion of the Other Regulatory Projects and New Mandatory Projects required by EPA as part of the negotiations of the 2015 EPA Consent Decree; (v) inclusion of the operation, maintenance and CIP requirements related to the Puerto Nuevo wastewater collection system, including alleged CSOs; (vi) reduce annual capital expenditure levels for mandated projects under the Previous Consent Decrees, based on a new comprehensive and holistic prioritization system for the scheduling and management of CIP projects, applied to CIP requirements under the 2015 EPA Consent Decree and the Proposed DWSA Amendment, as well as other CIP projects that may arise in the future under the Clean Water Act and the Safe Drinking Water Act and taking into account the Authority’s financial situation and available resources; and (vii) the completion of scheduled mandatory projects under the Base List.

The Authority continues its negotiations with DOH to modify the existing 2006 Drinking Water Settlement Agreement. Modifications to include: (i) an update of the Authority’s facilities; (ii) the elimination of certain projects and/or requirements included in the 2006 Drinking Water Settlement Agreement because such projects and/or requirements have already been completed and certified as such; (iii) the acceptance and the implementation of the Prioritization System and the Base List; and (iv) the inclusion of scheduled mandatory projects under the Base List.

The Prioritization System is a comprehensive and holistic project scheduling methodology utilized by the Authority in planning capital improvement projects and regulatory environmental projects. In prioritizing upcoming and required projects, the Prioritization System takes into consideration regulatory and environmental compliance, quality of service and reliability, operational requirements and needs, as well as population served by a specific capital improvement project. The Authority has identified specific criteria and developed a scoring methodology to objectively rank and prioritize the capital improvement projects required. Through the application and analysis of the Prioritization System the Authority will establish the relative priority of all projects required under the 2015 EPA

Consent Decree and the Proposed DWSA Amendment, except for certain projects identified in a Base List of high priority mandatory compliance, to objectively allocate its limited financial resources.

The Prioritization System, as included in the 2015 EPA Consent Decree and proposed to be included in the Proposed DWSA Amendment, will permit the Authority to apply lower annual expenditures to mandatory projects on the basis of their rank in the priority list and would require that any other mandated regulatory projects also be ranked under the Prioritization System, as well as allow the Authority to assess any significant change in circumstances or additional environmental obligations, stemming from new regulations approved by Regulatory Agencies or unforeseen events such as emergencies, that are not addressed in any of the Previous Consent Decrees.

The 2015 EPA Consent Decree includes, and the Proposed DWSA Amendment is expected to include, the following modifications:

- The postponement or advancement in deadlines and completion dates of certain projects currently included in the CIP. Compliance deadlines were extended through approximately 2034.
- A revision to the scope of work negotiated for certain projects to better address certain facilities' current needs.
- The elimination of certain projects from the consent decrees and agreements given that the facility is in compliance and/or due to the declining population trends the project no longer needs to be performed or because the project has already been completed and certified. The 2006 Consent Decree CIP Term 2 has four projects that were eliminated through the renegotiation. These projects are: Fajardo WWTP expansion, Lares WWTP expansion, Santa Isabel WWTP outfall improvements, and Barceloneta WWTP expansion. The CIP Term 3, on the other hand, has six projects that were eliminated through the renegotiation. These projects are: the Comerio WWTP flow diversion, the Dorado and Vega Baja WWTPs' retrofit and flow diversion, the Unibón flow diversion, and the Las Marías and Maricao WWTPs' retrofit and capacity increase. Two projects were eliminated from the 2010 EPA Consent Decree CIP Term 2 and 3 remedial measures. These projects are: Perchas WTP STS construction and Quebradillas WTP STS construction.
- The addition of new compliance projects (categorized as Other Regulatory Projects and New Mandatory Projects) – Several projects that were not originally included in the consent decrees or the agreement were negotiated to be included. Additional projects proposed for the 2006 DOH Agreement involve compliance projects required by the Long Term 2 Enhanced Surface Water Treatment Rule. This rule requires further treatment of cryptosporidium and other pathogenic microorganisms with the purpose of reducing the illness associated with them. Additional projects added to the EPA Consent Decrees include: capacity evaluation projects for compliance of STSs, I/I studies, and Caño Martin Peña/ENLACE projects. These additional projects are included in the Governing Board's approved Five-Year CIP with the exception of four I/I studies for the Isabela, Bayamón, Caguas and Unibón services areas to be completed by 2034. The Authority should update its CIP plan to include these projects.
- The inclusion of the operation, maintenance and capital improvement program requirements related to the Puerto Nuevo wastewater collection system, including alleged CSOs. The Authority shall comply with all the requirements of its NPDES Permit and with the Permit concerning CSOs. The most recent NPDES permit for the Puerto Nuevo WWTP requires that the Authority implement the Nine Minimum Control measures and a Long-Term Control Plan for the Puerto Nuevo WWTP service area to address wastewater collection system and CSOs occurrences. As such, the Authority implemented a Sewer System Operation & Maintenance Plan ("SSOMP or S2OMP") for the Puerto Nuevo WWTP service area. The SSOMP will manage both the combined sewer systems and the sanitary sewer system requirements as stipulated in the NPDES permit in addition to a comprehensive capacity, management, operations, and maintenance program for all the Puerto Nuevo sanitary sewer system. The following tasks, are performed by either the Authority personnel or a private contractor as part of the SSOMP: sewer system reconnaissance to enable complete inspections, observation and cleaning of the sewers; fats, oil and grease control; sewer cleaning; sanitary sewer overflows, dry-weather overflows and unauthorized release prevention and control; and mapping. The Authority submitted an annual report on the status of the implementation of the SSOMP as requested. Through these efforts, the Authority expects to identify System needs related to overflows (including CSOs) and to be able to better estimate the effort and expected costs of a future repair plan. Within 60 days of

completing the sewer system reconnaissance of the Puerto Nuevo WWTP service area, the Authority shall submit to EPA for review and approval its proposed plan to undertake the Condition Assessment of the Puerto Nuevo WWTP sewer system, which shall include a series of remedial measures.

- Amendments to the interim limits – the Authority expects to request interim limits for its water and wastewater treatment plants to comply with newly implemented regulations regarding numeric nutrient criteria for nitrogen and phosphorus. It is anticipated that in order to comply with the lower discharge limits to be imposed by EPA for these parameters in NPDES permits, operational modifications and even additional capital improvements to the WWTPs may be required, which would be subject to the CIP Prioritization System.
- Completion of scheduled mandatory projects under the Base List of projects – Includes high priority mandatory compliance projects that have already started the process of planning, design or construction and will not be subjected to the prioritization process. Specific deadlines for these high priority projects were individually discussed and negotiated between the Authority, EPA and are being negotiated with the DOH.

In addition to the modifications explained above, in the 2015 EPA Consent Decree, EPA acknowledged the Authority's record of compliance with the EPA Consent Decrees, in light, of the fact that as of the date hereof the Authority has completed all short and medium term remedial actions, first-term capital improvement projects, the SSSEP, the SSSRP and the SSSEPs 2 required under the 2006 EPA Consent Decree and has also developed and implemented EPA-approved IPMP, now the Integrated Maintenance Program or "IMP", and Spill Response and Cleanup Plan ("SRCP"), as well as a capacity management system policy. EPA also acknowledged that the Authority has completed all the short and medium term remedial actions, all first term capital improvement projects, some second and third term capital improvement project, implementation of EPA-approved IPMP, capacity evaluation plans, operator training program, alternative power units ("APUs") for all STSs installation of flow meters and high level indicators, standard operating procedures for filter backwashing and washing of process treatment units, remedial actions for unfiltered plants and the implementation of standardized recordkeeping required under the 2010 EPA Consent Decree.

### **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 Safe Drinking Water Act 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. Compliance with such future requirements may result in the Authority having to make capital and operating expenditures that are not reflected in the Five-Year CIP and the Authority's financial projections. Generally, future legal/regulatory requirements provide for a period of time to achieve compliance and/or compliance plans. 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.

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, which may affect the Authority's ability to comply with regulatory deadlines or other requirements. 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**

The purpose of the CIP is to modernize and simplify the Systems, to achieve operational efficiency, protect public health and safeguard environmental quality, while enabling continued economic development. The CIP achieves these objectives by bringing the Systems into material compliance with all regulatory requirements, including the 2015 EPA Consent Decree and the 2006 Drinking Water Settlement Agreement.

The CIP is a dynamic program that is constantly evolving and undergoing revision as needs and funding are identified, and as projects transition from planning through design, construction and startup. 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. The program has been funded with external financing from bond issuances and federal assistance in accordance with standard utility financing practices. Bond financing of long term capital improvements, is consistent with the Authority's mission and results in lower, more affordable water rates than would be possible if these expenses were to be paid on a current basis.

### **CIP Suspension**

The Government's fiscal situation and resulting rating agency classification downgrades had a major impact on the Authority, as each downgrade also resulted in a concomitant downgrade for the Authority, thereby limiting its ability to access the capital markets to obtain financing to cover its immediate Five-Year CIP related expenses. The Authority was able to use operating funds to cover expenses related to its Five-Year CIP projects for some time. However, in fiscal year 2016, after expending all of its surplus operating income and reserves to repay bond anticipation note and cover a portion of its unfunded Five-Year CIP, the Authority was forced to essentially postpone or terminate the execution of all Five-Year CIP projects. As of today, execution of all regulatory-driven capital projects are on hold indefinitely. Important renewal work such as replacing inefficient meters and failed/leaking pipelines are also being deferred. There is a strong concern that the lack of capital investment will lead to short-term infrastructure degradation impacting the O&M expenses, which could lead to critical situation. Given the delays in the issuance of new revenue bonds and the resulting suspension of the Five-Year CIP projects, the Authority accumulated an outstanding debt of more than \$150 million owed to its Five-Year CIP contractors and suppliers, which has been reduced to approximately \$60M as of June 30, 2017. The Authority included in its 2017 Certified Fiscal Plan a modified Ten-Year CIP which includes all adjustments resulting from negotiations with Regulatory Agencies and the necessary investment to reflect the Authority's infrastructure current needs to ensure adequate operation and sustainability of the System. It covers the planning period from FY2017 through FY2026, instead of a five-year period. However, this Ten-Year CIP has not yet been approved by the Authority's Governing Board pending the identification of available funds to cover all required expenditures.

### **2017-2026 Ten-Year CIP**

The Ten-Year CIP as included in the Authority's Certified Fiscal Plan totals \$2.4 billion, in current dollars, in capital expenditures for project management, projects under construction as of June 30, 2015 and new projects scheduled to be executed in each of the years covered by the Ten-Year CIP. As shown in the following table, the Ten-Year CIP consists of \$309.7 million for improvements to the Water System and \$419.2 million for improvements to the Wastewater System. The remainder of the Ten-Year CIP, totaling approximately \$1,640.8 million, 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 ten-year period, \$396.3 million (17%) is required for projects specified by the amendments to the terms of the 2015 EPA Consent Decree, the 2006 Drinking Water Settlement Agreement, the Other Regulatory Projects and the New Mandatory Projects. Historically, the majority of the Authority's CIP investment (about 60%) was for mandatory and compliance driven projects. This reduction is mainly a result of the extensive renegotiation process that the Authority and the Regulatory Agencies entered to modify certain requirements of the existing consent decrees and agreements to re-align compliance priorities and, in turn, help alleviate the Authority's financial burden. The Authority expects that additional substantial expenditures will be necessary after fiscal year 2026 in order to comply with the long-term aspects of the 2015 EPA Consent Decree and the 2006 Drinking Water Settlement Agreement.

The Ten-Year 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 capital improvement program 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 Ten-Year CIP

The following table summarizes the Ten-Year CIP by year and by major expenditure category followed by a table breaking down the Ten-Year CIP into mandatory expenditures and other categories (all amounts in millions). A complete list of the projects included in the Ten-Year CIP can be found at the Authority's website, [www.acueductospr.com/INVESTORS/index.html](http://www.acueductospr.com/INVESTORS/index.html).

Category Type	Sub-Category	Fiscal Year Ending June 30,										Total*
		2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2017-2026
Water System	Water Supply	\$1.9	\$5.5	\$11.5	\$12.0	\$19.2	\$10.3	\$2.4	\$1.5	\$1.5	\$3.4	\$69.3
	Water Pump Stations	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.2
	WTP Capacity Increase	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	WTP Improvements	4.1	14.2	24.6	17.9	7.7	2.6	3.4	8.1	10.5	3.8	96.8
	WTP New	5.5	26.0	11.7	1.5	0.0	0.0	0.0	0.0	0.0	0.0	44.7
	Water Distribution	0.2	0.9	3.1	5.5	10.1	9.4	20.1	25.8	14.3	3.6	93.0
	Other Projects (Drought)	0.0	0.0	0.0	0.0	0.0	0.0	1.1	2.6	1.8	0.3	5.8
	<b>Subtotal</b>	<b>\$11.8</b>	<b>\$46.6</b>	<b>\$50.9</b>	<b>\$36.9</b>	<b>\$37.3</b>	<b>\$22.2</b>	<b>\$27.0</b>	<b>\$38.0</b>	<b>\$28.1</b>	<b>\$11.1</b>	<b>\$309.7</b>
Wastewater System	Wastewater Pump Stations	\$0.0	\$2.5	\$8.1	\$5.4	\$1.3	\$0.7	\$0.1	\$0.0	\$0.4	\$0.5	\$19.1
	WWTP Capacity Increase	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1.5	9.7	20.0	31.5
	WWTP Improvements	4.2	15.4	29.1	23.0	20.9	14.0	4.8	1.3	0.0	0.0	112.8
	WWTP New	1.3	9.1	6.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	17.16
	Wastewater Collection	10.2	22.6	33.1	41.6	38.9	27.7	31.3	20.8	9.9	2.5	238.7
	<b>Subtotal</b>	<b>\$16.0</b>	<b>\$49.7</b>	<b>\$76.7</b>	<b>\$70.3</b>	<b>\$61.2</b>	<b>\$42.5</b>	<b>\$36.2</b>	<b>\$23.7</b>	<b>\$19.9</b>	<b>\$23.0</b>	<b>\$419.2</b>
Others	Water Meters	\$0.1	\$5.0	\$4.6	\$4.5	\$4.5	\$4.5	\$4.5	\$4.5	\$4.5	\$4.5	\$41.2
	Buildings	0.0	0.1	0.0	0.3	3.0	3.2	0.3	0.0	0.0	0.0	7.0
	Fleet	1.5	12.5	10.4	10.2	9.0	8.1	8.0	8.0	8.0	5.8	81.5
	Integrated Maintenance Program**	0.1	0.3	1.0	1.9	1.2	0.3	0.0	0.0	0.0	0.0	4.9
	Minor Repairs	6.0	31.3	41.1	52.5	42.2	33.4	33.5	30.4	32.3	30.0	332.6
	Renovation & Replacement	18.0	88.6	65.0	77.7	73.9	127.5	145.5	155.5	132.7	183.7	1,068.0
	Technology	8.8	10.2	10.5	2.9	12.1	13.5	13.7	12.2	11.5	10.2	105.6
	<b>Subtotal</b>	<b>\$34.5</b>	<b>\$148.0</b>	<b>\$132.5</b>	<b>\$150.0</b>	<b>\$145.8</b>	<b>\$190.6</b>	<b>\$205.5</b>	<b>\$210.6</b>	<b>\$188.9</b>	<b>\$234.2</b>	<b>\$1,640.8</b>
<b>Total***</b>		<b>\$62.2</b>	<b>\$244.3</b>	<b>\$260.2</b>	<b>\$257.3</b>	<b>\$244.3</b>	<b>\$255.3</b>	<b>\$268.7</b>	<b>\$272.3</b>	<b>\$236.9</b>	<b>\$268.4</b>	<b>\$2,369.8</b>

\* Numbers may not add up due to rounding.

\*\* Does not include actual maintenance costs related to Integrated Maintenance Program; these are included in the Authority's Operation and Maintenance budget.

\*\*\*The Five-Year CIP was approved by the Authority's Governing Board during fiscal year 2015 under Board Resolution No. 2909. However, the Five-Year CIP uses of funds for fiscal year 2015 and fiscal year 2016 were revised by the Authority due to delays in the implementation of certain CIP projects as a result of the delay in the issuance of the 2015 Senior Bonds. These delays are not reflected on this table.

\*\*\*\* The projections for Fiscal Year 2016 do not reflect the revisions made by the Authority to the sources and uses of funds revised by the Authority due to the delay in the implementation of certain CIP projects during Fiscal Year 2015 resulting from the delay in the issuance of the 2015 Senior Bonds.

The annual level of expenditures projected for the Five-Year CIP averages, over the five-year period, approximately \$280 million.

Project Category	Fiscal Year Ending June 30,										Total 2017-2026
	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021	
Mandatory Compliance (Consent Decrees, Admin. Orders, Agreements)	\$17.4	\$67.6	\$64.7	\$43.5	\$31.3	\$28.0	\$44.9	\$44.8	\$30.7	\$23.4	\$396.3
Non-Mandatory Compliance	11.9	32.1	47.2	44.7	30.8	17.6	9.3	11.4	14.7	6.8	226.5
Non-Mandatory Renewal and Replacement	15.8	81.9	69.8	89.7	91.7	139.0	158.2	165.3	145.1	196.8	1,153.3
Non-Mandatory Quality and Growth	1.0	10.1	26.9	29.0	37.0	26.1	13.7	8.4	5.5	3.5	161.2
Non-Mandatory Other	0.8	4.8	6.1	6.8	12.7	3.4	1.3	2.7	2.0	2.5	43.2
Non-Mandatory Structure	15.4	47.7	45.5	43.6	40.6	41.2	41.2	39.7	39.0	35.5	389.3
<b>Total *</b>	<b>\$62.2</b>	<b>\$244.3</b>	<b>\$260.2</b>	<b>\$257.2</b>	<b>\$244.1</b>	<b>\$255.3</b>	<b>\$268.7</b>	<b>\$272.3</b>	<b>\$236.9</b>	<b>\$268.4</b>	<b>\$2,369.7</b>

\* Numbers may not add up due to rounding.

The Consulting Engineer reviewed the Ten-Year CIP and has concluded that it addressed the general needs of the Systems and prioritized projects in accordance with the Prioritization System that the Authority included in the 2015 EPA Consent Decree. However, the Consulting Engineer cautions that the Authority may need to realign its projected CIP breakdown and use of funding sources if results show that the annual renovation and replacement investment (included in the Ten-Year CIP) is not adequate to properly maintain the Systems. Finally, since the existing Ten-Year CIP does not include projects intended solely to address new regulatory requirements that may be imposed on the Authority in the future, as the impact of future regulations becomes more defined, modifications to the Authority's Ten-Year CIP will be required to adequately accommodate resulting needs. The Authority anticipates, however, that with respect to new regulatory requirements arising under the Clean Water Act and the Safe Drinking Water Act, these would be subjected to the Prioritization System. Under the Prioritization System, these requirements would be prioritized and scheduled for implementation depending on the Authority's financial capacity. To the extent that the Authority's fiscal situation does not improve, and that identification of CIP financing continues unresolved, the Ten-Year CIP implementation will continue on hold. The delay in CIP development and implementation could negatively affect the System's renewal, replacement, and overall up-keeping. It will also affect the Authority's ability to meet regulatory obligations.

In February 2009, the Authority with the support of the Consulting Engineer started updating its Water and Wastewater Infrastructure Master Plan extending through 2030 (the "2010-2030 Master Plan"). The 2010-2030 Master Plan provides a clear roadmap for the implementation of its future investments in water and wastewater infrastructure over the next 20 years and will allow the Authority to review in detail and update its CIP. The 2010-2030 Master Plan was completed in April 2011. The 2010-2030 Master Plan concluded that, for the 20-year planning period, the total investment cost for water infrastructure and compliance cost is approximately \$4.31 billion and that the total investment cost for Wastewater System infrastructure projects is approximately \$308 million. Recognizing the need to keep the 2010-2030 Master Plan up to date, in fiscal year 2013, the Authority began revising it to reflect

infrastructure needs based on the analysis of the most recent population projections provided in the U.S. Census 2010, the Puerto Rico Planning Board population projections, and the Authority's updated compliance results (*i.e.*, water quality parameters and discharge requirements) and capacity data. This revised plan also assumed that the 2015 EPA Consent Decree was to be approved as filed and the Proposed DWSA Amendment was to be approved under terms substantially similar to those currently being negotiated with DOH. The Authority completed the service area re-assessment evaluation and demands update, and the infrastructure needs and project scopes update during fiscal year 2014.

Considering the revised population projections, lower demands are projected in the future. Also, an overall improvement in compliance with water quality parameters and discharge requirements was observed. Hence, results presented in the Master Plan Update show that, if demand projections hold true and compliance continues to improve, fewer projects than those previously recommended will be required over the planning period. As such, the Master Plan Update focuses more in the maintenance, renovation, and optimization of the System. Due to the CIP suspension, the Authority have yet to complete the reconciliation of the Master Plan Update project list and its long-term CIP plan. All projects will be subject to the Authority's Prioritization System and a project scheduling timeframe will be applied considering the Authority's available funds and commitments with Regulatory Agencies. It is the Authority's intention to continuously revise its Master Plan to maintain its CIP up to date with the Systems' needs.

## **THE AUTHORITY'S FISCAL PLAN**

On May 25, 2016, the U.S. Congress passed PROMESA, designed to give Puerto Rico tools to address its economic crisis and restructure its debt. The bill addresses Puerto Rico's debt by establishing an oversight board, a process for restructuring debt, and expedited procedures for approving critical infrastructure projects. The Oversight Board established under this Act shall oversee the development of budgets and fiscal plans for certain Puerto Rico's instrumentalities and for the government, including the Authority. Pursuant to the Oversight Board request/mandate for the submission of a Fiscal Plan, on December 22, 2016, the Authority submitted its draft version. On February 21, 2017, April 28, 2017, and May 28, 2017 revised versions of the Fiscal Plan were resubmitted to the Oversight Board addressing the Oversight Board comments and requirements and the impact of new legislation since the draft versions were submitted. On August 26, 2017, the Oversight Board granted final approval and certification on the Authority's Fiscal Plan.\*

The Authority's Fiscal Plan has been developed to ensure compliance with its mission. That is, the provision of quality water and sewer services at the lowest possible cost to its customers. Therefore, the Fiscal Plan provides for a safe, reliable and high-quality drinking water and wastewater treatment services to its customers to comply with federal environmental regulations, protect public health, safeguard environmental quality, and avoid potential penalties and criminal charges. As such, the Authority's Fiscal Plan provides for the required investment for the necessary infrastructure to ensure compliance with required standards while promoting a much-needed economic growth throughout the island, the timely execution and implementation of its measures, and the Authority's long term financial self-sustainability.

In its 2017 certified Fiscal Plan, the Authority included its CIP to cover a ten-year period from FY2017 to FY2026 (the Ten-Year CIP). However, this Ten-Year CIP has not yet been approved by the Authority's Governing Board pending the identification of available funds to cover all required expenditures. The Ten-Year CIP was updated to: (1) reprioritize non-regulatory compliance CIP projects to give more importance to efficiency projects; (2) further extend regulatory compliance timeframes so that the Authority can better coordinate capital spending to achieve other outcomes within the timeframe; and (3) address long-term infrastructure rehabilitation and replacement by increasing the amount of investment in capital renewal including buried infrastructure. See "2017-2026 Ten-Year CIP" under CAPITAL IMPROVEMENT PROGRAM.

The Authority's certified Fiscal Plan major revenue assumptions include a reduction in billings at a compounded annual growth rate (CAGR) of 0.25%, an increase in collection rates up to 98% of total billings (excluding government accounts), and the expiration of Act 66-2014 benefits effective FY2018. Expense assumptions

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\* The Authority has submitted proposed revised Fiscal Plan drafts to the Fiscal Oversight Board and working through the certification process for the revised fiscal plan. Financial and other information in the revised fiscal Plan may be materially different from the information set forth in the certified Fiscal Plan and in this disclosure and therefore the information provided herein should not be relied upon to assess the Authority's current financial condition or the status of the systems.

reflect the impacts of active legislation such as Act 3-2017 and Act 26-2107 and consider the amended PREPA rates impact. Also, the Authority management has identified several new efforts and initiatives that could provide additional financial benefits if implemented successfully. Some of these projects and initiatives are relatively new, while others have been discussed in the past but have not been executed. These key initiatives include:

- Rate increases: One of the amendments required by the Oversight Board is that the Fiscal Plan must include consistent, but moderate rate increases distributed broadly across all customer types and categories, including residential customers, taking into consideration income of such customers. As proposed in the Authority's Fiscal Plan, annual rate increases shall be applied in accordance with the current Rate Resolution adopted in 2013 starting in FY2018 as follows:
  - Residential: 2.5%
  - Commercial: 2.8%
  - Industrial: 3.5%
  - Government: 4.5%
- Public-Private Partnership Project (P3 Project): In 2010, the Authority undertook a formal procurement process through the Puerto Rico P3 Authority, to among other things: incorporate advanced metering infrastructure, develop a geo-referenced customer database, and re-engineer, assume and operate all the Authority's commercial activities to guarantee the effectiveness and benefits of the technological improvements. During the procurement process, changes in the Government's public policy forced the Authority to modify the scope of work, making the proposed endeavor commercially impracticable and financially unfeasible. Therefore, the effort to pursue the P3 Project was discontinued.

Now, the Authority seeks to implement a P3 Project with one or more firms to reduce the current amount of NRW, optimize the Authority's metering system, and further enhance customer service activities efficiency and client satisfaction. With no access to capital markets and with a CIP program still in suspension, the Authority expects to leverage private sector capabilities and capital to, above all, improve metering accuracy and replace aged meters. To date, the Authority is currently working on clearly defining the scope of work and beginning the procurement process. All improvements and capital investments including the meter replacement program shall be assumed by the private firms.

- Electronic Bill Discount: The Authority has taken steps to modernize the way it interacts with its customers. In FY2016, the Authority created a "virtual office" in its website which allows customers to perform all transactions and claims via the internet. Additionally, a mobile application for smart phones has been developed. Also in FY2016, the Authority developed the capacity to send customers electronic bills. With this initiative the Authority proposes to provide a discount rate of \$1 per month to each customer subscribed to the electronic bill.
- Adjustment Policy Revision: In February 2017, the Authority's Governing Board Approved Regulation 8901, which among other customer service updated requirements and measures, states that adjustments made for bills where a hidden leak is detected will only apply to the sewer bill portion (not both water and sewer) as the water has already been consumed or lost in the system and the Authority has already incurred in its production cost.
- New Disconnection Fee: Also included in the Regulation 8901, this initiative consists on the implementation of a new \$15 charge for the cost of disconnecting the service (in addition to the reconnection fee already in place).
- Physical Losses Reduction: Physical losses are the largest component of the Authority's NRW. This initiative includes a series of efforts to reduce physical losses and thus NRW. Some of the identified efforts include: the continuation of the water leak detection program, monitoring systems' pressure to optimize flows, reducing the number of days required to repair leaks, and the installation of telemetry monitoring equipment at tanks to reduce overflows.
- Hydroelectric Power Generation: The Puerto Rico Electric Power Authority (PREPA) currently owns and operates 21 hydroelectric units (at 11 sites) with installed capacity of 100 MW. Additionally, PREPA operates

three irrigation systems at a net economic loss. Hydroelectric facilities account for less than 2% of the total PREPA energy generation. Given PREPA's economic condition and need to upgrade its equipment to more efficient and economic thermoelectric units, very little capital is (or will be) available to improve, maintain or upgrade the water related assets. Because of this, the infrastructure has not been renewed or replaced, which is evidenced by the lack of maintenance of facilities and reservoirs, the amount of equipment in state of disrepair and the high levels of sedimentation in reservoirs.

In 2011 and 2012, the Authority and PREPA engaged in negotiations for the transfer of all water related assets from PREPA to the Authority. Initially, all hydroelectric generation assets (including the reservoirs) and all irrigation system assets would be transferred to the Authority. Nevertheless, as negotiations advanced, time ran out on the political cycle making the approval of required legislation to be impossible. The transaction evolved into an asset purchase transaction specifically for hydroelectric generating plants.

Between 2009 and 2013, the hydroelectric facilities generated an average of 129 million kilo-watt hours per year (kWh/yr). While this total generation represented less than 1% of PREPA's total energy generation at the time, it amounts to approximately 20% of the Authority's total consumption. This creates a strong incentive for the Authority to operate such assets. With this initiative, the Authority expects to assume the operation of the hydroelectric generation units and all their related equipment. Among the benefits that this initiative offers are: lower energy costs for the Authority, better control and management of water resources, cost savings, leverages existing infrastructure and reduces the amount of future water/sewer rate increases. Currently, the P3 Authority, PREPA and the Authority are evaluating the feasibility of entering into a P3 agreement with a private entity to rehabilitate and operate the hydroelectric facilities.

- Other Expenses: The Authority expects to have an additional reduction in Other Expenses of about \$2M per year.
- Forbearance Agreements with Federal Agencies: Historically, the Authority has received federal funds for its CIP through State Revolving Loans (the SRF Loans) granted by EPA through the Clean Water State Revolving Fund Programs (CWSRF) and the Drinking Water State Revolving Fund Programs (DWSRF), administered locally by the Government's Environmental Quality Board (EQB) and the Puerto Rico Department of Health (PRDOH), respectively; and, from bond proceeds from the USDA Rural Development Program by issuing revenue bonds as authorized under the Authority's Resolution No. 1224, adopted by the Authority on August 12, 1986, as amended (the RD Bonds). The SRF Loans and the RD Bonds are secured by a guaranty from the Government under Act No. 45 of the Legislative Assembly of Puerto Rico, approved on July 28, 1994, as amended. However, due to the Authority's fiscal situation, on June 30, 2016, the Authority entered into forbearance agreements related to both programs, which time periods were later extended in various occasions and are currently due and will terminate on April 30, 2018 (RD Bonds) and June 30, 2018 (SRF Loans). The forbearance agreements granted the Authority a reduction of principal and interest on both programs of approximately \$60M per year. The Authority is currently in negotiation efforts with EPA and USDA and expects to have agreements on debt restructuring and new federal funds provided in the upcoming months.
- Superaqueduct Debt: The Superaqueduct is one of the main assets owned and operated by the Authority, producing around 100 mgd or around 20% of water production. The Authority's debt balance includes a portion of the 2011 Series B Bonds issued by the PFC on December 2011 to refinance certain outstanding debt related to the construction cost of the North Coast Superaqueduct. In the past, the Authority and the Government agreed that the Authority will pay the debt service on the portion of this debt related to the Superaqueduct (\$162.7 million) only if sufficient funds were available for such purpose. However, this is not a general obligation of the Authority and is otherwise payable solely from appropriations received from the Government. The Authority has been unable to make such payments in recent years. As provided in the Master Agreement of Trust, if the Authority is unable to make these payments, the obligation is not cumulative, and therefore does not carry forward to future periods. Therefore, since the Authority is not legally required to make this payment, the related debt service payments were eliminated from the Authority's Fiscal Plan financial projections.

Even though the Authority plans to implement all these new initiatives to enhance its revenues and reduce its expenses and obligations, the Authority would still need to plan for debt restructuring and secure additional external funding to be able to meet its financial projections.

## 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 therefore. 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 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, 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 Legislative Assembly of Puerto Rico, approved July 28, 1994, as amended. As described below in "Commonwealth Guaranteed Indebtedness," the Authority refinanced the 1995 Commonwealth Guaranteed Bonds with the proceeds of the 2008 Commonwealth Guaranteed Bonds. Under the Guaranteed Bond Resolution, the Authority is permitted to issue bonds and other obligations having a claim on Operating Revenues senior to the claim thereon of the Guaranteed Bonds. With the implementation of the rate increase during fiscal years 2006 and 2007 and later 2013, the creation of a new organizational and management structure, and the collective bargains agreements between the Authority and its labor unions, the financial condition of the Authority improved significantly from that which existed from the early 1990's until fiscal 2006 and required substantial annual operating and capital subsidies from the Commonwealth. Since 2009, the Authority has incorporated a series of initiatives to improve its revenues and better control its expenses. The results achieved are the product of the Authority's commitment to becoming a self-sustainable entity.

The \$180 million revolving line of credit with GDB for the purpose of financing the operating reserve, required by the Master Agreement of Trust securing its revenue bonds. The maturity date of the line of credit was on June 30, 2016 and the Authority did not renew the credit facility. There was no outstanding balance as of June 30, 2016. Pursuant to the Master Agreement of Trust amended by the Sixth Supplemental Agreement of Trust, on July 2016, the Authority made the require monthly deposits into an operational fund reserve account with the Authority's trustee agent, in order to establish an operating reserve fund of \$180 million at the end of sixty periods.

The following table sets forth the debt of the Authority as of June 30, 2017. Following the table is a discussion of the material terms of certain debt instruments the Authority has incurred to finance the Ten-Year CIP

	<u>June 30, 2017</u> <u>(In thousands)</u>
Revenue Bonds:	
2012 Series A Bonds (Senior) .....	\$1,768,375
2012 Series B Bonds (Senior) .....	230,545
2008 Series A Bonds (Senior)* .....	1,276,340
2008 Series B Bonds (Senior).....	22,445
Commonwealth Guaranteed Indebtedness:	
2008 Commonwealth Guaranteed Bonds.....	284,755
Guaranteed RUS Bonds .....	392,646
State Revolving Loans Funds .....	581,276
Commonwealth Supported Obligations (PFC Superaqueduct Bonds)† .....	162,700
Notes:	
Fleet Term Loan .....	1,611

Transition Line of Credit .....	65,550
Total bonds and notes payable .....	<u>\$4,786,243</u>

\* Includes accreted value of approximately \$28 million related to Convertible Capital Appreciation Bonds issued as part of the 2008 Senior Bonds.

† Represents Commonwealth Appropriation Debt that the Authority has agreed to pay as long as its Operating Revenues are sufficient for such purposes. See "Commonwealth Supported Obligations" under DEBT for a description of other Commonwealth Appropriations Debt related to the Authority.

## Commonwealth Guaranteed Indebtedness

*2008 Commonwealth Guaranteed Bonds and Guaranteed RUS Bonds.* As of June 30, 2017, the Authority had outstanding \$284.8 million principal amount of the 2008 Commonwealth Guaranteed Bonds that were issued under Resolution No. 1583. The proceeds of the 2008 Commonwealth Guaranteed Bonds were used to refinance the Authority's outstanding \$262.8 million of Revenue Refunding Bonds, Series 1995, Guaranteed by the Commonwealth of Puerto Rico, in order to achieve cash flow benefits. Under Act No. 45 of the Legislative Assembly 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 Commonwealth Guaranteed Bonds, in the event Authority Revenues after payment of all Senior Indebtedness are insufficient to pay debt service on the 2008 Commonwealth Guaranteed Bonds as they become due.

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 2% to 5%. The Commonwealth agreed to guarantee the payment of debt service of bonds issued to RUS to finance certain urban aqueduct projects. As of June 30, 2017, \$392.6 million principal amount of such Guaranteed RUS Bonds was outstanding. The Rural Development Bonds are guaranteed by the Commonwealth, and Act No. 96 of June 30, 2015 provides that RUS Bonds issued by the Authority on or before June 30, 2020 will be guaranteed by the Commonwealth.

On June 30, 2016, the Authority requested that USDA Rural Development Program to provide a short-term forbearance period, during which it would refrain from exercising its rights and remedies, including the enforcement of the Commonwealth Guarantee, under the Rural Development Bond ("RD Bond") documents or grants or loan agreements. To this effect, the Authority and USDA Rural Development Program executed a forbearance document, effective as of June 30, 2016 (the "USDA Forbearance Agreement"). The USDA Rural Development Program granted the Authority a three (3) month forbearance period, through September 30, 2016, subject to the terms and conditions set forth in the USDA Forbearance Agreement, in order to provide for additional time to examine all options available to correct the Authority deficiencies and restore loan repayments.

As pursuant to the USDA Forbearance Agreement, the payments due on July 1, 2016 under the RD Bond documents were also deferred for the duration of the forbearance period and USDA Rural Development Program agreed to forbear from exercising, or consenting to the exercise of, any enforcement of rights or remedies available to it under the RD Bond documents or any grant or loan document in relation thereto. As part of the forbearance agreements, USDA Rural Development Program required a payment of \$1.4 million, on July 12, 2016 the Authority made the payment as part of the agreement. On September 30, 2016, the forbearance agreement matured, and an additional forbearance period was granted until December 31, 2016. As part of the extension agreement, the USDA Rural Development Program required an additional payment for \$2.4 million. On October 6, 2016, the Authority made the requested payment \$1.2 million payment and on the first business day of November and December made payments of \$0.6 million each to be applied to overdue loan payments. On December 30, 2016, USDA Rural Development Program further extended the USDA Forbearance Agreement, through March 30, 2017 and on that date a new extension through June 30, 2017 was granted by the USDA Rural Development Program. On June 30, 2017, the USDA Rural Development Program extended the USDA Forbearance Agreement, through September 30, 2017. As part of the requirements, the Authority made payments on July 15, 2017 for \$500,000, on August 01, 2017 for \$700,000, and on September 1, 2017 for \$850,000. On September 30, 2017, USDA Rural Development granted an extension until October 31, 2017, and on that date, it was further extended until January 15, 2018. As part of the conditions, the extension did not required additional payments. PRASA and USDA Rural have subsequently agreed to extend the agreement until April 30, 2018 with payments of \$250,000 on each of February 1, 2018, March 1, 2018 and April 1,

2018. As the date hereof, the Authority and USDA Rural Development are still engaged in negotiations of the definitive agreements for the restructuring of the outstanding principal balance of \$392.6 million

The Authority's obligations under 2008 Commonwealth Guaranteed Bonds and Guaranteed RUS Bonds are subordinate to the Senior Subordinate and Subordinate Indebtedness and are payable from the Commonwealth Payments Fund.

*Revolving Funds.* 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, the Commonwealth appropriates and deposits a portion of its available revenues into the Revolving Funds to meet its responsibility for matching funds requirements under these federal laws (approximately 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 Five-Year CIP). The Authority's obligations under such revolving loans are subordinate to the Senior, Senior Subordinate and Subordinate Indebtedness and are payable from the Commonwealth Payments Fund. The Authority's existing obligations to the Revolving Funds are guaranteed by the Commonwealth, and Act No. 96 of June 30, 2015 provides that Revolving Funds obligations incurred by the Authority on or before June 30, 2020 will be guaranteed by the Commonwealth.

PRIFA provides administrative and managerial assistance to the Authority through the Revolving Funds, which were created by Commonwealth legislation and are constituted separately and independently from each other as well as any other funds or resources of the Commonwealth. As of June 30, 2017, the Revolving Funds' loans had an outstanding principal amount of \$581.2 million.

On June 30, 2016, the Authority executed a Forbearance Agreement (the "Forbearance Agreement") with the Puerto Rico Department of Health ("DOH"), administrator of the Drinking Water State Revolving Fund Programs, the Commonwealth's Environmental Quality Board ("EQB"), administrator of the Clean Water State Revolving Fund Programs ("CW-SRF"), and PRIFA, a public corporation and instrumentality of the Commonwealth, as operating agent for the SRFs, authorized to assist the DOH and the EQB in the administration, financial and accounting activities of the SRFs. Under the Forbearance Agreement, the payments due on July 1, 2016 and after under the SRF Loans were deferred and the parties thereto agreed to forbear from exercising, or consenting to the exercise of, any enforcement of rights or remedies available to each under the SRF Loans.

PRIFA, DOH and EQB, with the acknowledgment and support of the United States Environmental Protection Agency ("EPA"), granted such forbearance, subject to the terms and conditions set forth in the Forbearance Agreement, for a period of six (6) months. On December 14, 2016, the Forbearance Agreement was amended to extend the forbearance period until June 30, 2017. During such forbearance period, the Commonwealth Guaranty will not be enforced either. PRIFA, EQB and DOH, with the support of EPA, contemplate that during the forbearance period the parties will negotiate new terms and conditions to the SRF Loans under a restructuring of such loans and a revision of underlying agreements between the Authority, PRIFA, EQB, DOH and, where applicable, EPA, understand that given current circumstances, such forbearance and possible restructuring protects the perpetuity of the DW-SRF and CW-SRF programs beyond the financially stressed scenario faced by both the Authority and the Commonwealth at this time. On December 14, 2016, PRIFA, EQB and PRDOH, with the support of EPA further extended the SRF's Forbearance Agreement, through June 30, 2017. On June 30, 2017, PRIFA, DOH and EQB, with the acknowledgment and support of the EPA, entered into a Second Amendment to Forbearance Agreement ("the Second Amendment") and further extended the Forbearance Agreement until December 31, 2017. As of hereof, the parties continues the negotiations of the definitive agreements for the restructuring of the Authority's obligations under the State Revolving Funds loans facilities. As part of the conditions of the agreement, On July 01, 2017, August 01, 2017, September 01, 2017 the Authority will submit principal payments of \$250,000 and on October 01, 2017 November 01, 2017 and December 01, 2017 will submit a principal payment of \$500,000. The Forgoing payments shall be deemed to be applied toward principal on a pro rata basis, among all SFR loan facilities. PRIFA establish with Banco Popular de Puerto Rico two escrow accounts for DW-SRF and CW-SRF, respectively.

On September 20, 2017, a catastrophic category 4 hurricane made landfall on Puerto Rico causing widespread destruction throughout the entire island, leaving the entire population without power. The hurricane damaged the



Authority's infrastructure resulting in less than half of the population having the water and wastewater service. The hurricane impact may result in a material adverse change in the financial condition of the Authority, and will require amendments to the Fiscal Plan certified by the Fiscal Oversight Board. As a result of the uncertainty of the impact of the hurricane damage on the Authority's operations and financial condition, the Authority needed to preserve sufficient liquidity in order to continue to provide service to the population and restore the damage to Authority's system and therefore requested that PRIFA, DOH EQB and EPA agree to waive the requirements payments of November 01, 2017 and December 01, 2017, included in the Second Agreement and extend the Forbearance Agreement until June 30, 2018, without additional principal payments required. As a result, a Third Agreement was agreed and was further extended as requested.

*Future Guaranteed Obligations.* Act 96- 2015 authorized the Authority to incur before July 1, 2020 Indebtedness that is guaranteed by the Commonwealth. Until June 30, 2020, any Authority bonds purchased by U.S. Department of Agriculture – Rural Development acting on behalf of Rural Utilities Service and loans taken from the Revolving Funds will be guaranteed and included as Commonwealth Guaranteed Indebtedness under the Master Trust Agreement.

Failure to pay principal of or interest on Commonwealth Guaranteed Indebtedness is not an Event of Default under the Master Trust Agreement.

### **Commonwealth Supported Obligations**

The outstanding Commonwealth Supported Obligations consist of the PFC Superaqueduct Note held by PFC, the proceeds of which were used to finance the costs of construction of the Northcoast Superaqueduct and secure, in part, the PFC Bonds. The terms of the PFC Superaqueduct Note provide that debt service thereunder is payable solely from budgetary appropriations to be made by the Commonwealth. Since 2006, the Authority made debt service payments on the PFC Superaqueduct Note in fiscal years 2007, 2008, 2009 and 2011. For fiscal years 2010 and 2012 through 2015, other funding sources were used for the payment of debt service on the PFC Superaqueduct Note, including, but not limited to, capitalized interest from the proceeds of the PFC Bonds.

Under the Master Trust Agreement, funds on deposit in the Commonwealth Supported Obligations Account are required to be transferred by the Trustee to the trustee of the PFC Bonds prior to the applicable debt service payment date. Due to the non-appropriations of funds for the payments of the Notes in the Commonwealth's annual budget for fiscal year 2017 and 2016, none of the payments on the Notes, or any corresponding payments on the PFC Bonds, that have come due and payable in fiscal year 2017 have been paid. As publically disclosed by GDB and PFC following the approval of the Commonwealth's annual budget for fiscal year 2017, the non-appropriation of the necessary funds to make the payments on PFC Bonds reflects the reality of the Commonwealth's current liquidity situation and fiscal challenges, in combinations with the balance of the Commonwealth's obligations to its creditors and the equally important obligations to the citizens of Puerto Rico to ensure the provisions of essential services. As of June 30, 2017, the outstanding balance of the PFC Superaqueduct Note was approximately \$162.7 million

Failure to pay principal of or interest on Commonwealth Supported Obligations is not an Event of Default under the Master Trust Agreement.

### **Notes**

#### *Operating Reserve Fund Line of Credit*

On March 18, 2008, the Authority entered into a revolving line of credit agreement with GDB. This agreement provides the Authority with an available maximum amount of \$150 million to be used to satisfy the Operating Reserve Requirement pursuant to the Master Agreement of Trust dated as of March 1, 2008 between the Authority and the bond trustee related to the 2008 Revenue Bonds. On February 29, 2012, the maximum amount was increased to \$180 million. There was no outstanding balance as of June 30, 2017. This line of credit matured on June 30, 2016 and was not renewed. Pursuant to the MAT, amended by the Sixth Supplemental Agreement of Trust, on July 2016 the Authority made the required monthly deposits into an operational fund reserve account with the

Authority's trustee agent, in order to establish an operating reserve fund of \$180 million at the end of a sixty (60) months term.

#### *Transition Line of Credit*

On February 29, 2012, the Authority entered into a line of credit agreement with GDB. This agreement provides an available maximum amount of \$150 million for the purpose of assisting with the Authority's cash flows needs during the transition period after amending and restating the Master Agreement of Trust as a result of the issuance of 2012 Revenue Bonds Series A and B. On June 27, 2014, the Authority and GDB executed an Amended and Restated Loan Agreement (the "Loan Agreement") reducing the line of credit to the outstanding balance as of that date of \$72.3 million and converting the interim loan to a term loan due and payable on March 31, 2019. The Loan Agreement has an amortization period of fifteen (15) years, which shall be payable in nineteen (19) quarterly payments, commencing on June 30, 2014, plus a final balloon payment (of such amount as may be the balance then outstanding) on the maturity date.

On December 30, 2015, the Authority gave notice to GDB that it would not be making the payment due GDB on December 31, 2015, under the Amended and Restated Loan Agreement, dated as of June 27, 2014, by and between the Authority and the GDB, as further amended. The Authority's payment obligations under the Loan Agreement were not designated as Other System Indebtedness and are therefore not payable on a parity basis with the Authority's Senior debt and have no rights under the MAT, as the parties expressly agreed, that such payment obligations would be junior and subordinate in all respects to the requirements of the MAT. In this respect, the nonpayment of the amounts due to GDB under the Loan Agreement do not constitute an Event Default under the MAT, inasmuch as the nonpayment defaults contemplated under Section 8.01(a) and Section 8.01(b) of the MAT relate to a default in payment of amounts due under the Bonds or Other System Indebtedness. As of June 30, 2017, the term loan outstanding balance was \$65.6 million. As of this date the term note has not been declared in default by GDB.

#### *Fleet Term Loan*

As authorized by the Board's Resolution No. 2844, adopted on April 23, 2014, on November 3, 2014, the Authority entered into a credit agreement with Popular Auto, LLC, a limited liability company organized and existing under the laws of the Commonwealth, pursuant to the term of which such institution agreed to make borrowings available to the Authority in the aggregate principal amount of \$7.5 million (the "Fleet Term Loan") to be repaid by November 2, 2017. The Fleet Term Loan was designated by the Authority as Senior Subordinate Indebtedness, Other System Indebtedness and a Refundable Principal Installment pursuant to the terms of the Master Trust Agreement. The outstanding balance of the Fleet Term Loan as of June 30, 2017 was \$1.6 million.

#### **Revitalization Act**

On July 12, 2016, the Governor of Puerto Rico signed into law Act 68 of 2016 ("Act 68"), providing for the creation of a new public corporation, to be known as the Puerto Rico Aqueduct and Sewer Authority Revitalization Corporation (the "Corporation"), as a single purpose, bankruptcy remote entity. The Corporation is authorized to fix and collect securitization charges for the purpose of issuing bonds the proceeds of which may be used by the Authority for its Capital Improvement Program ("CIP"), refinancing of bond anticipation notes and the cancelation, defeasance and refinancing of its Bonds, among other approved financing costs. Act 68 limits the securitization charge which may be imposed by the Corporation to an amount equivalent to 20% of the Authority's revenues and provides that the Corporation may issue up to a maximum of \$900 million in bonds for the purpose of financing the development of the Authority's CIP. The difference between the \$900 million that may be used for the financing of the CIP and the maximum amount that can be financed with the 20% of Authority's revenues may be used to retire, cancel (defease) or refinance Bonds of the Authority, subject to certain conditions. As of the date of this reports this Corporation has not commenced operations.

## **ADDITIONAL SUBSEQUENT DISCLOSURE**

As a result of recent obstacles faced by PRASA in gaining access to the bond market for the issuance of its Revenue Bonds to cover the cost of construction of projects included in its Capital Improvement Program (“CIP”), it has been unable to pay certain outstanding contractor receivables and has had to suspend its ongoing CIP projects. In this respect, PRASA has been able to gradually reduce the amount owed to contractors.

On September 20, 2017, a catastrophic category 4 hurricane made landfall on Puerto Rico causing widespread destruction throughout the entire island, leaving the entire population without power. The hurricane damaged the Authority’s infrastructure resulting in less than half of the population having the water and wastewater service. The hurricane impact may result in a material adverse change in the financial condition of the Authority, and has required amendments to the Fiscal Plan certified by the Fiscal Oversight Board. As a result, the Authority has submitted updated drafts of the Fiscal Plan and is continuing to work with the Fiscal Oversight Board on certification of the revised Fiscal Plan.

As a result of the fiscal crisis and the insolvency of the Employees Retirement Systems of the Commonwealth of Puerto Rico (ERS), since July 2017 ERS began operating the pension benefits as “Pay as You Go”. All payments from the employees and employer contributions were made to the Treasury Department of Puerto Rico in order to act as fiscal agent for the ERS.

## OPERATING RESULTS

Set forth below is a table showing and a brief discussion of the changes in revenues, expenses and net position of the Authority (amounts in the table in thousands) within the three fiscal years ended June 30, 2017.

	2015	2016	2017*
Operating revenue:			
Water .....	\$737,321	\$674,758	\$705,448
Sewer .....	379,737	345,130	359,923
Bad Debt Expense.....	(62,570)	(41,170)	(33,368)
Total net operating revenue .....	1,054,488	978,718	1,032,003
Operating expenses:			
Payroll and payroll related .....	265,339	269,589	282,169
Service contract - Superaqueduct .....	3,495	3,667	3,852
Professional and consulting services .....	34,994	29,158	31,715
Chemicals .....	27,107	27,766	32,023
Materials and replacements .....	21,723	18,328	18,565
Repairs and maintenance of capital assets.....	39,254	36,116	34,433
Electricity.....	148,267	141,743	126,650
Insurance.....	8,058	7,985	7,890
Other operating expenses .....	94,423	89,470	85,334
Operating expenses (excluding depreciation and amortization) .....	642,660	623,822	622,631
Depreciation and amortization.....	274,573	278,702	285,228
Cost of Assets Disposition.....	22,179	85,238	12,516
Total operating expenses .....	939,412	987,762	920,375
Operating income (loss).....	115,076	(9,044)	111,628
Non-operating revenue and expenses:			
Interest expense, net of amortization of debt issuance cost, bond premium and discount, and deferred refunding loss .....	(244,545)	(247,688)	(256,614)
Impairment loss on deposits with governmental bank .....	-	(9,795)	-
Commonwealth contributions for interest payments on bonds and notes .....	9,817	-	-
Interest income.....	4,435	3,372	2,329
Other income.....	3,038	6,482	4,669
Total non-operating expense, net .....	(227,255)	(247,629)	(249,616)
Loss before capital contributions.....	(112,179)	(256,673)	(137,988)
Capital contributions:			
Federal grants and other contributions .....	26,054	18,257	3,894
Other Commonwealth contributions .....	50	-	122
Total capital contributions.....	26,104	18,257	4,016
Change in net position .....	(86,075)	(238,416)	(133,972)
Net position at beginning of period (as restated) .....	2,378,979	2,292,904	2,054,488
Net position at end of period (as restated) .....	<b>\$2,292,904</b>	<b>\$2,054,488</b>	<b>\$1,920,516</b>

\* Unaudited numbers subject to change

## **Management's Discussion of Historical Operating Results**

### **June 30, 2017 and 2016 Financial Highlights**

- The Authority's net position decreased by \$134 million to \$1,920.5 million, or 6.5%, which represents an increase of \$104.4 million when compared to the 2016 decrease in net position of \$238.4 million. The increase was primarily the net result of an increase in operating revenues of \$53.3 million, a decrease of total operating expenses, including depreciation and amortization of \$67.4 million, an increase in net non-operating expenses of \$2 million, and a decrease in capital contributions of \$14.2 million.
- Operating revenues increased by \$53.3 million to \$1,032 million, or 5.4%, for fiscal year 2017, the Authority's operating revenue was on a normal course of business without service interruption when compared to the severe drought that affected the prior fiscal 2016, as a result water service consumption increase by 4%. However, the number of clients served decreased during fiscal year 2017. In addition, the management continues the implementation of key performance initiatives with the private public partnership, which includes the replacement of meters in order to increase the operating revenues.
- Operating expenses, including depreciation and amortization, decreased by \$67.4 million to \$920.4 million, or 6.8%, primarily as a result of a decrease of cost of assets disposition of \$72.7 million, a decrease in electricity expense of \$15.1 million, a decrease in other operating expense of \$4.1 million, a decrease in repairs and maintenance expense of \$1.7 million, netted by, an increase in payroll and payroll related expenses of \$12.6 million, an increase in depreciation expense of \$6.5 million, an increase in chemicals of \$4.3 million, an increase in professional and consulting services of \$2.6 million, respectively.
- Non-operating expenses increased by \$2 million, or 0.8% to a net expense of \$249.6 million. The change is mainly due to an increase in interest expense net of amortization of bond premium and discount, and deferred refunding losses of \$8.9 million, a decrease in interest income of \$1 million, a decrease in other income of \$1.8 million. For the fiscal 2017, the Authority did not recognize an impairment loss on deposits held with governmental bank, which represents an increase in nonoperating revenue of \$9.8 million.
- Capital contributions decreased by \$14.2 million, or 78% to \$4 million, primarily as a result of a decrease of \$6.6 million in the USDA Rural Development contributions, a decrease of \$3.3 million in contributions and grants received from the Water Pollution Control Revolving Fund and the Puerto Rico Safe Drinking Water Treatment Revolving Fund, a decrease of \$4.5 million in developers contributions.
- Total assets and deferred outflows decreased by \$208.7 million to \$7,663.7 million or 2.7%, as result of a decrease in Authority's capital assets net of depreciation and amortization of \$259.5 million, a decrease in Authority's currents assets of \$20 million, a decrease of \$4.4 million in deferred outflow of resources on loss from debt refunding and, an increase in restricted cash of \$75.2 million. Total liabilities decreased by \$74.8 million to \$5,743.1 million or 1.3%, primarily as a result of a decrease of in accounts payable of \$76 million, a decrease of \$51.8 million in long term debt, a decrease in accrued liabilities of \$6.5 million, and an increase of \$53.7 in accrued interest, an increase of \$3.9 million in compensated absences and postemployment benefits.

### **June 30, 2016 and 2015 Financial Highlights**

- The Authority's net position decreased by \$238.4 million to \$2,054.5 million, or 10.4%, which represents a decrease of \$152.3 million when compared to the 2015 decrease in net position of \$86.1 million. The decrease was primarily the net result of a decrease in operating revenues of \$75.8 million, an increase of total operating expenses, including depreciation and amortization of \$48.4 million, an increase in net non-operating expenses of \$20.4 million, and a decrease in capital contributions of \$7.8 million.
- Operating revenues decreased by \$75.8 million to \$978.7 million, or 7.2%, mainly due to a decrease of water consumption of 8.5% compared to fiscal year 2015, as a result of the severe drought that affected Puerto Rico during the months of May 2015 until November 2015. In order to control the situation and maintain the water supply and service to the population, the Authority implemented a rationing of water; performed water pressure adjustment to go through the difficult time due to the impact of the severe drought that affected Puerto Rico. In addition, during fiscal year 2016 continued the decrease in the numbers of clients served.

- Operating expenses, including depreciation and amortization, increased by \$48.4 million to \$987.8 million, or 5.1%, primarily as a result of an increase of cost of assets disposition of \$63.1 million, increase in payroll and payroll related expenses of \$4.3 million, an increase in depreciation expense of \$4.1 million, netted by a decrease in electricity expense of \$6.5 million, a decrease in professional services of \$5.8 million, a decrease in other operating expense of \$5.0 million, a decrease in materials and replacement expenses of \$3.4 million, a decrease in repairs and maintenance expense of \$3.1 million, respectively.
- Non-operating expenses increased by \$20.4 million, or 9.0% to a net expense of \$247.6 million, primarily as a result of an increase of \$9.8 million in an impairment loss on deposits held with governmental bank, an increase in interest expense net of amortization of bond premium and discount, and deferred refunding losses of \$3.1 million, a decrease of \$9.8 million in commonwealth contributions for interest payments on bonds, a decrease in interest income of \$1.1 million and an increase in other income of \$3.4 million.

Capital contributions decreased by \$7.8 million, or 30.1% to \$18.3 million, primarily as a result of a decrease of \$4.8 million in contributions and grants received from the Water Pollution Control Revolving Fund and the Puerto Rico Safe Drinking Water Treatment Revolving Fund, a decrease of \$4.5 million in the USDA Rural Development contributions and an increase in other contributions of \$1.9 million.

- Total assets and deferred outflows decreased by \$337.4 million to \$7,872.4 million or 4.1%, as result of a decrease in Authority's capital assets net of depreciation and amortization of \$241.6 million, a decrease in restricted assets of \$132 million, a decrease of \$4.2 million in deferred outflow of resources on loss from debt refunding and, an increase in Authority's currents assets of \$40.3 million. Total liabilities decreased by \$99 million to \$5,817.9 million or 1.7%, primarily as a result of a decrease of \$117.2 million in long term debt, a decrease in accounts payable of \$27.1 million and an increase of \$32.1 in accrued interest, an increase of \$3.9 million in accrued liabilities.

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