

Puerto Rico Aqueduct and Sewer Authority

GOVERNMENT OF PUERTO RICO

2021 Fiscal Plan for the Puerto Rico Aqueduct and Sewer Authority (PRASA)

Transforming PR's Water and Wastewater System

Fiscal Years 2022 to 2026

As certified by the Financial Oversight and Management Board for Puerto Rico

May 27, 2021





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Acronyms

2008 Bonds	2008 Senior Revenue Bonds Series A&B and 2008 Revenue Refunding Bonds Series A&B, issued on March 18, 2008
2012 Senior Bonds	2012 Senior Revenue Bonds Series A&B, issued on February 29, 2012
2020 Senior Bonds	2020 Senior Revenue Refunding Bonds Series A&B issued on December 17, 2020
AAFAF	Puerto Rico Fiscal Agency and Financial Advisory Authority
AMWA	Association of Metropolitan Water Agencies
ARP	American Rescue Plan Act of 2021
ASES	Puerto Rico Health Insurance Administration
Authority	Puerto Rico Aqueduct and Sewer Authority
AWIA	America Water Infrastructure Act of 2018
AWWA	American Water Works Association
BAN	Bond Anticipation Notes
BBA	Bipartisan Budget Act
CAA	Consolidated Appropriations Act
CARES	Coronavirus Aid, Relief and Economic Security
CDBG-DR	Community Development Block Grant – Disaster Recovery
CDBG-MIT	Community Development Block Grant – Mitigation
CGI	Commonwealth Guaranteed Indebtedness
CIF	Capital Improvement Fund
CIP	Capital Improvement Program
CSO	Commonwealth Supported Obligations
COR3	Central Office for Recovery, Reconstruction, and Resilience
CRRSA	Coronavirus Response and Relief Supplemental Appropriations
CWSRF	Clean Water State Revolving Fund
DOH	Puerto Rico Department of Health
DOJ	Puerto Rico Department of Justice
DRA	GDB Debt Recovery Authority
DSA	Debt Sustainability Analysis
DWSRF	Drinking Water State Revolving Fund Programs
EPA	Environmental Protection Agency
EPCs	Energy Performance Contracts

EQB	Environmental Quality Board
ERPs	Emergency Response Plans
ERS	Employee Retirement System
FAASt	FEMA Accelerated Award Strategy
Federal Debt	Debt held by EPA (SRFs) and USDA RD
Federal Lenders	EPA and RD
FEMA	Federal Emergency Management Agency
FTE	Full-Time Employee
FY	Fiscal Year
GAAP	Generally accepted accounting principles
GDB	Government Development Bank for Puerto Rico
GIS	Geographical information system
Government	Government of Puerto Rico
Governor	Governor of Puerto Rico
HMGP	Hazard Mitigation Grant Program
HUD	United States Department of Housing and Urban Development
KPIs	Key Performance Indicators
kWh	Kilowatt-Hours
LIHWAP	Low-Income Household Drinking Water and Wastewater Assistance Program
MAT	Master Agreement of Trust
MGD	Million Gallons per Day
MHI	Median Household Income
MTBF	mean time between failure
NFMP	Non-Federal Match Program
NPV	Net Present Value
NRW	Non-Revenue Water
OH	Overhead
OMB	Puerto Rico Office of Management and Budget
O&M	Operations and Maintenance
ORF	Operating Reserve Fund
Oversight Board	Financial Oversight and Management Board for Puerto Rico
P3	Public-Private Partnership
P3 Authority	Puerto Rico Public-Private Partnership Authority

P3 Project	Metering System and Customer Service Optimization Project
PAN	Nutritional Assistance Program
PAPPG	Public Assistance Program and Policy Guide
PayGo	Pay-as-you-Go
PFC	Puerto Rico Public Finance Corporation
PM	Project Manager
PMCs	Project Management Consortium
PMO	Project Management Office
PMIS	Project Management Information System
PPAs	Power Purchase Agreements
PPE	Personal Protection Equipment
PRASA	Puerto Rico Aqueduct and Sewer Authority
PRDNER	Puerto Rico Department of Natural and Environmental Resources
PRDOH	Puerto Rico Department of Health
PREB	Puerto Rico Energy Bureau
PREPA	Puerto Rico Electric Power Authority
PRHUD	Puerto Rico Department of Housing
PRIFA	Puerto Rico Infrastructure Finance Authority
PROMESA	Puerto Rico Oversight, Management, and Economic Stability Act
PSI	Pounds per Square Inch
PWSIDs	Potable Water System Identification
RD	Rural Development
Regions	Operational Regions
RFC	Raftelis Financial Consultants
RFP	Request for Proposals
RFQ	Request for Qualifications
RRAs	Risk and Resiliency Assessments
R&R	Renewal and Replacement Projects
RSA	Rate Stabilization Account
SA	Robert T. Stafford Disaster Relief and Emergency Assistance Act
SAP	Computer software
SBA	Small Business Administration
SCADA	Supervisory Control and Data Acquisition

SOOMP	Sewer System Operation and Maintenance Program
SOP	Standard Operating Procedure
SIM	Integrated Maintenance System
SPI	Schedule Performance Index
SRF	State Revolving Fund
System	Authority's Public Water Supply and Wastewater System
TANF	Puerto Rico Temporary Assistant for Needy Families
STS	Sludge treatment system
UIA	Unión Independiente Auténtica (Independent Authentic Union)
US	United States of America
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
WRF	Water Research Foundation
WRO	Water Recovery Office
WTP	Water Treatment Plant
WWTP	Wastewater Treatment Plants
WWPS	Wastewater Pumping Stations

Disclaimer

The Financial Oversight and Management Board for Puerto Rico (the “FOMB,” or “Oversight Board”) has formulated this 2021 Fiscal Plan based on, among other things, information obtained from the Puerto Rico Aqueduct and Sewer Authority (the “Authority” or “PRASA”) and the Commonwealth of Puerto Rico (the “Commonwealth,” or “Government”).

This document does not constitute an audit conducted in accordance with generally accepted auditing standards, an examination of internal controls or other attestation or review services in accordance with standards established by the American Institute of Certified Public Accountants or any other organization. Accordingly, the Authority, the Commonwealth, and the Oversight Board (together herein, the “Parties”) do not express an opinion or any other form of assurance on the financial statements, any financial or other information, the internal controls of the Authority and the information contained herein. Numbers throughout this document may not perfectly reconcile due to rounding.

This 2021 Fiscal Plan is directed to the Governor and Legislature of Puerto Rico based on underlying data obtained from the Government. No representations or warranties, express or implied, are made by the Oversight Board with respect to such information.

This 2021 Fiscal Plan is not a Title III plan of adjustment. It does not specify classes of claims and treatments. It neither discharges debts nor extinguishes liens.

This 2021 Fiscal Plan is based on what the Oversight Board believes is the best information currently available to it. To the extent the Oversight Board becomes aware of additional information after it certifies this 2021 Fiscal Plan that the Oversight Board determines warrants a revision of this 2021 Fiscal Plan, the Oversight Board will so revise it.

For the avoidance of doubt the Oversight Board does not consider, and has not considered, any provision in the 2021 Fiscal Plan as a “recommendation” pursuant to PROMESA Section 205(a). Nevertheless, to the extent that anything in prior Fiscal Plans is ever deemed by the Governor or Legislature or determined by a court having subject matter jurisdiction to be a “recommendation” pursuant to PROMESA Section 205(a), the Oversight Board hereby adopts it in the 2021 Fiscal Plan pursuant to PROMESA Section 201(b), unless such recommendation is directly contrary to specific language in the 2021 Fiscal Plan, in which case the specific language of this Fiscal Plan controls

Any statements and assumptions contained in this document, whether forward-looking or historical, are not guarantees of future performance and involve certain risks, uncertainties, estimates and other assumptions made in this document. The economic and financial condition of the Authority, Government and its instrumentalities is affected by various legal, financial, social, public health, economic, environmental, governmental and political factors. These factors can be very complex, may vary from one fiscal year to the next and are frequently the result of actions taken or not taken, not only by the Authority or the Government, but also by the Oversight Board and other third-party entities such as the government of the United States. Examples of these factors include, but are not limited to:

- The effect of COVID-19 on the health and well-being of the people of Puerto Rico;

- The economic effects of COVID-19 on the global, United States and Puerto Rico economies which impact the Authority’s financial situation and projections;
- The amount of federal aid in response to COVID-19 and the efficacy and speed of disbursement of such aid to the people of Puerto Rico;
- The need to shift resources to create a more resilient public health structure to prevent or mitigate future pandemics;
- The amount and timing of receipt of any distributions from FEMA, USDA and USEPA and private insurance companies to repair damage caused by Hurricanes Irma and Maria and the January 2020 earthquakes;
- The impact of the measures and situation described herein on outmigration; and
- The impact of the resolution of any pending litigation in the Title III cases

Because of the uncertainty and unpredictability of these and other factors, their potential impact cannot be reasonably included in the assumptions contained in this document. Future events and actual results may differ materially from any estimates, projections, or statements contained herein. Nothing in this document should be considered as an express or implied commitment to do or take, or to refrain from taking, any action by the Parties or an admission of any fact or future event. Nothing in this document shall be considered as a solicitation, recommendation or advice to any person to participate, pursue or support a particular course of action or transaction, to purchase or sell any security, or to make any investment decision.

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Executive Summary

The Puerto Rico Aqueduct and Sewer Authority (the “Authority” or “PRASA”) is committed to providing reliable, affordable, and safe water and wastewater services to the people of Puerto Rico.

Over the past several years, PRASA has made substantial progress implementing measures that have improved its fiscal responsibility. However, PRASA has made moderate progress addressing historical challenges that have previously and continue to hinder its operational performance. Therefore, additional improvements are required in key operational areas, including:



Non-revenue water: PRASA’s significantly high levels of non-revenue water (“NRW”) presents challenges to its fiscal responsibility and water availability, increasing rates and making Puerto Rico’s residents and businesses particularly vulnerable to droughts. Even though PRASA has made some progress by installing production meters to properly measure water production, PRASA must focus on reducing physical water losses resulting from leakage and commercial losses resulting from inaccurate metering.



Accurate metering and effective customer service: PRASA continues to depend on old mechanical meters which, consistent with industry experience, exhibit a high and growing level of inaccuracy and degradation. Inaccurate billed consumption precludes PRASA from properly billing for actual consumption, measuring the scale and impacts of non-revenue water, and understanding customer consumption patterns. PRASA must prioritize installing new accurate meters in its highest usage accounts, wherever additional revenue is projected to exceed the cost of a new meter under a project scope that is both financially and operationally sensible.



Capital delivery: Despite PRASA’s inability to access credit markets to cover its capital project obligations, the expected influx of obligated Federal Funds (\$3.7B FEMA award¹) will allow PRASA to deploy capital works at pre-2015 levels and implement transformational capital improvements to its water and wastewater facilities that can permanently reduce operating costs, generate new revenue, and deliver improved performance to customers. It will be crucial that new capital projects are executed on-budget and on-schedule to rebuild PRASA’s infrastructure up to current standards.

¹ PRASA has assessed the coverage of the cost-share portion of ~\$400M with projected CDBG funds or through self funding. Refer to Chapter 7 (Federal Funds for Disaster Recovery and Resiliency) for greater detail.

PRASA will be continuously updating – every 90-days – its plan on deploying the FEMA funds. Additionally, the Federal Funds PRASA will deploy carry a significantly lower cost than traditional financing available to water utilities.

PRASA’s financial condition has improved materially since 2017 mainly due to the implementation of various revenue enhancing and expense reducing measures, including modest and gradual rate increases across all customer classes. Moreover, PRASA has made significant efforts in restructuring its debt by: (i) reducing its debt service cost by approximately \$380 million through the Federal Debt reprogramming with its federal partners in July 2019, (ii) settling a loan with GDB/DRA for savings of \$57.5 million in November 2020; and (iii) refinancing \$1.4 billion of PRASA’s debt with total debt service savings of \$350 million in December 2020. Furthermore, the recent obligation of \$3.7 billion in FEMA funds in concert with existing CIP planning and funding presents a unique – perhaps generational – opportunity to rebuild and recover critical water and wastewater facilities within the context of changed circumstances summarized in Chapter 1: “Introduction” in this Fiscal Plan. The previous factors have stabilized PRASA’s financial condition. Yet to achieve long-term responsibility further improvements are required to implement the operational measures outlined herein. This Fiscal Plan presents balanced projections and feasible measures aimed at promoting long-term fiscal responsibility and operational sustainability.

PRASA’s 2021 Fiscal Plan outlines numerous areas of opportunity, largely related to non-revenue water, capital delivery, and metering infrastructure improvements. By implementing each of the measures identified in this 2021 Fiscal Plan, PRASA will further improve its financial and operational performance, continue to invest in its System, and ensure the highest standards of water quality and reliability at affordable rates for the people of Puerto Rico.

The majority of PRASA’s efforts in the past have focused on addressing fiscal challenges with little emphasis given to operational deficiencies. Therefore, the 2021 Certified Fiscal Plan, and its underlying measures, seek to address both areas, including:

- Implementing a robust action plan to mitigate physical water losses
- Investing in water metering infrastructure in a cost-effective manner to address commercial water losses
- Setting forth sound practices from the enabling measures outlined herein; including measures to improve long-term fiscal responsibility, operational efficiency and sustainability, maintenance effectiveness, and asset management.
- Executing its CIP to maintain and upgrade water system safety, reliability and resilience; and
- Collecting sufficient revenues to achieve fiscal responsibility and regain access to credit markets at reasonable interest rates to meet its borrowing needs.

PRASA’s 2021 Certified Fiscal Plan provides a roadmap for its fiscal and operational transformation by addressing the structural deficiencies which have prevented PRASA from achieving long-term fiscal responsibility and operational sustainability.

Without the implementation of aggressive fiscal and operational reforms outlined herein, PRASA projects a structural baseline deficit of \$1.4 billion between FY2021-FY2026, driven by:

- falling revenues from a shrinking customer base and economy, and
- rising operating expenses in line with inflation; however,
- these challenges are partially offset by a significant influx of federal funding to cover material portions of PRASA’s projected CIP investment.

PRASA and the Oversight Board have identified several measures that, if successfully implemented, would improve PRASA’s financial and operational performance. This 2021 Fiscal Plan includes the following measures² related to revenue enhancement, cost reduction, and federal funding. These measures must be executed (or continued) by PRASA’s Project Management Office to derive a net impact³ of ~\$1.4 billion:

1. **Rate Adjustments (\$910 million between FY2021-FY2026)**⁴: continue with the scheduled implementation of modest rate increases in FY2022—consistent with past Fiscal Plans and standard utility practice—and complete the review of the current rate structure with the aim of ensuring simplicity, affordability, and adequate cost recovery in FY2023 and beyond.
2. **New Federal Funds (\$333 million)**: obtain financing from two federal loan programs: State Revolving Funds (USEPA) and the Rural Development Program (USDA).
3. **Pension reform (\$20 million)**: improve financial stability through reforms that ensure funding of retiree obligations through a PayGo structure and contributions to the existing defined contribution plan for existing employees.
4. **Electricity expense reduction (\$17 million)**: reduce electricity costs through increased efficiency and procurement of additional distributed generation capacity.
5. **Christmas bonus elimination (\$16 million)**: remove the annual bonus payment and accruals starting in FY2022.
6. **Healthcare savings (\$16 million)**: explore additional savings to ensure the Authority is receiving optimal market price and coverage.
7. **Physical water loss reduction (\$12 million)**: reduce physical water losses through leak reduction, pressure management, monitoring water balances, among others.
8. **Organization optimization (\$4 million)**: limit PRASA’s workforce size from an estimate of 4,700 to 4,677 while a comprehensive productivity and rightsizing assessment is conducted.
9. **Chemical expense reduction (\$4 million)**: reduce chemical usage and costs through improved inventorying, contracts negotiation, and installing technology improvements at Carraizo Dam.

² Unless provided otherwise, measure projections cover FY2022 through FY2026

³ In addition to the new measures, the post-measures financial results include ~\$89 million in completed measures; these are discussed in Section 3.1: Recently Implemented Measures.

⁴ Estimate includes rate adjustments enacted in FY2018-FY2021 and assumes 2% annual rate adjustments across all customer segments during FY2023-FY2026.

Table 0-1 provides an annual and cumulative view of PRASA's FY2021 pre-measures and post-measures financial results. By implementing each of the measures identified in this 2021 Fiscal Plan, and through continued commitment to invest in the necessary improvements to its System, PRASA's financial outlook through the Fiscal Plan projects balanced budgets in all years.

TABLE 0-1: POST-MEASURES FINANCIAL RESULTS FOR FY2021-FY2026, (IN \$ MILLIONS)

<i>In \$ Millions</i>	FY2021	FY2022	FY2023	FY2024	FY2025	FY2026	FY21/26
Authority Revenues	927.2	898.7	893.0	888.5	884.1	880.9	5,372.3
Senior Debt Service	(256.6)	(265.3)	(265.7)	(270.3)	(267.4)	(267.4)	(1,592.7)
Net Operating Expenses	(692.1)	(697.9)	(743.6)	(752.4)	(759.3)	(769.1)	(4,414.3)
Operating Reserve Fund	(36.4)	(2.1)	(6.4)	(2.2)	(1.7)	(2.4)	(51.3)
Capital Improvement Fund	(81.0)	(192.1)	(188.7)	(120.0)	(75.5)	(78.1)	(735.4)
Commonwealth Payment Fund	(7.2)	-	-	-	-	-	(7.2)
Baseline Financial Result	(146.0)	(258.7)	(311.5)	(256.4)	(219.9)	(236.2)	(1,428.7)
Measures Benefit	152.3	258.8	311.5	256.5	220.0	236.2	1,435.2
Post-Measures Financial Result	6.3	0.0	0.1	0.1	0.1	0.0	6.6
Deposits to the RSA	(6.3)	(0.0)	(0.1)	(0.1)	(0.1)	(0.0)	(6.6)
Final Annual Need	-	-	-	-	-	-	-

To support the execution of the measures listed above, the 2021 Fiscal Plan also requires PRASA to implement various enabling measures designed to support PRASA's ability to maintain long-term fiscal responsibility and operational sustainability through effective negotiations, planning, improved management controls, and increased operational efficiency and accountability:

- **Interagency debt settlement (between PREPA & PRASA):** this measure seeks to clear PRASA's balance sheet in FY2022 from aged and disputed outstanding debt through binding interagency negotiations or alternate dispute resolution methods.
- **Project Management Office (PMO) execution:** the PMO office has been tasked with the execution of the measures outlined in the 2021 Fiscal Plan and other key internal projects within the organization. However, to date, no PMO Director has been formally appointed.
- **Emergency response plan and climate risk preparedness:** develop and update PRASA's Emergency Response Plan and ensure findings are integrated across the organization and specifically into the CIP.
- **10-year Master Plan:** PRASA's 10-year plan, to be completed with the recently released 2020 US Census results, must provide a long-term roadmap to transform PRASA's system into a simpler, safer, operationally efficient, and fiscally responsible and operationally sustainable system and serve to consolidate recommendations from other plans and strategies (e.g., Fiscal Plan, Emergency Preparedness Plan, Climate Change Adaptability Plan).
- **Asset management and maintenance:** properly assess the condition of PRASA's asset management program in connection with asset tracking activities and efforts in promoting a more balanced target with higher preventative maintenance practices shifting away from primarily corrective practices.
- **Water availability increase:** implement a dredging program to increase the capacity on PRASA's reservoirs to manage drought period, thus minimizing the need of water rationing.

- **Utility Digitalization:** continue searching for innovation opportunities throughout PRASA’s operations and leverage information technology as a key tool to the successful implementation and monitoring of the Authority’s initiatives.







The 2020 US Census Bureau results indicate that Puerto Rico lost approximately 13% of its population since 2010, which illustrates the risk of a decreasing revenue base. This reality highlights the urgent need to rebuild and redesign a water and wastewater system sized to service a smaller population, which in turn should be less expensive to operate, thus resulting in a long-term reduction in ratepayer contributions. PRASA should prioritize the timely and comprehensive implementation of the 2021 Fiscal Plan measures. Failure to make progress on implementation threatens both the progress made throughout the last years, as well as PRASA’s long-term operational sustainability. If the Fiscal Plan measures are successfully executed, and fiscal responsibility and operational sustainability are achieved, PRASA will be able to access credit markets at reasonable rates once more, thus enabling it to provide reliable, affordable, and safe water and wastewater services to the residents of Puerto Rico for the foreseeable future. Furthermore, the Federal FEMA funds, and forthcoming water infrastructure funds, represent a generational opportunity for PRASA to transform its infrastructure in an affordable and more efficient System for the residents of Puerto Rico. It is essential that PRASA take full advantage of this opportunity, in parallel with implementation of the 2021 Certified Fiscal Plan.

1 Introduction

As the sole provider of public water and wastewater services in Puerto Rico, PRASA is committed to provide reliable, affordable, and safe water and wastewater services to the people of Puerto Rico. The 2021 Certified Fiscal Plan (the “Fiscal Plan”) outlines the actions that will enable PRASA’s transformation into a well-performing, safe, efficient, and sustainable water and wastewater utility to benefit the interests of the people of Puerto Rico and comply with PROMESA.

1.1 Purpose of the Fiscal Plan

The 2021 Certified Fiscal Plan has been developed with the commitment of delivering reliable, affordable, and safe water and wastewater treatment services while ensuring PRASA’s continued fiscal responsibility and operational sustainability. To implement this Fiscal Plan, PRASA must direct efforts as follows:

	Enhance revenues
	Reduce expenses
	Improve operational performance
	Improve customer satisfaction and reduce non-revenue water
	Increase water availability and reduce service rationing potential
	Execute a timely, on budget Capital Improvement Program (“CIP”) maximizing federal funding, including recovery funds

Successful completion of these objectives will place PRASA on a path towards financial and fiscal responsibility and operational sustainability, establishing the foundation for PRASA to become a well-performing utility with access to short-term and long-term credit markets at reasonable rates.

1.2 Changes from Previous Fiscal Plan

The major changes from the prior fiscal plan, as certified by the Oversight Board on June 29, 2020, are as follows:

1. Updated projection period (from FY2020 through FY2025). The period covered by the 2021 Fiscal Plan, from FY2021 through FY2026 is referred as herein as the 2021 Fiscal Plan Period.
2. Inclusion of known and preliminary projected impact of COVID-19 on PRASA’s revenues and collections.
3. Revised projections based on updated information, including electricity rates and macroeconomic assumptions.

4. Incorporation into the baseline financial projections the benefits of:
 - a) A recent debt refunding closed on December 17, 2020, and
 - b) Federal debt reprogramming activity closed in July 2019.
5. Inclusion of revised and updated action plans for proposed measures.
6. Updated CIP projections incorporating adjustments in its sources and uses reflecting the obligations of FEMA funds for recovery projects announced on January 5, 2021.
7. Inclusion of a new Chapter related to federal funding for disaster recovery and resiliency (Chapter 7).

1.3 Authority's general information

PRASA is a public corporation and governmental instrumentality of the Government of Puerto Rico (the "Government"). PRASA owns and operates the public water and wastewater system (collectively, the "System") of the Commonwealth of Puerto Rico.

1.3.1 Authority's Mission and Vision

PRASA's core mission is to provide high-quality, safe, reliable, and affordable water and wastewater services to the people of Puerto Rico, protecting their health and the environment. To accomplish its mission, PRASA has adopted a vision to become a top-performing utility while continuously exceeding customer expectations and ensuring sustainable water resources management.

1.3.2 History of the Authority

PRASA is an instrumentality of the Government created on May 1, 1945 for the purpose of owning and operating the Government's public water supply and wastewater systems.⁵ Exhibit 1-1 below provides a timeline of PRASA's history.

⁵ Act No. 40 of 1945

EXHIBIT 1-1: THE AUTHORITY'S HISTORICAL BACKGROUND TIMELINE

● 1945	Authority created through Act No. 40-1945
● 1990–1993	PRASA state of emergency declared by Governor • PRASA subsidized by Government (over \$400 million annually)
● 1994	• Debt downgraded below investment grade , no capital market access • Severe drought impacted Puerto Rico
● 1995–2004	PRASA's Management Privatization: • Operations directed by private operators and performed by both private and PRASA's employees
● 2004	Operational restructuring through Act No. 92-2004 • PRASA management transferred back to public sector • Operations reorganized into five Regions and Infrastructure Directorate
● 2005–2006	• Rate increase implemented in two phases (128% on average across customer segments) • Elimination of Government subsidies • Bond anticipation note obtained from private banks
● 2008	Investment grade rating recovered , allowing return to capital markets • Master agreement of Trust was created • \$1.3 billion in revenue bonds were issued and \$284 million in refunding bonds
● 2008–2012	• Lines of credit from GDB and BANs used to finance PRASA's CIP
● 2012	• MAT amended to enhance bondholder protections • \$2.1 billion in revenue bonds issued by PRASA
● 2012–2014	• Credit ratings downgraded to "non-investment grade" • Strategic Plan adapted to reduce dependence on bonds for CIP financing
● 2013	• Rate increase of 60% on average across customer segments • \$200 million bond anticipation note to finance CIP
● 2015	Severe drought required water rationing plan, resulting in decreased billings
● 2016	• PROMESA enacted in response to Puerto Rico's financial and debt crisis • The Authority was designed as covered entity under PROMESA
● 2017	• Hurricanes Irma and Maria caused extensive system damage • Series of gradual rate increases adopted from FY 2018 to FY 2022
● 2019	• Federal debt reprogramming allowing for re-access to federal funds and debt service savings of \$380 million
● 2020	• January 2020 earthquakes caused extensive system damage • Starting in March 2020, the COVID-19 pandemic caused collection delays due to economic impact on customers • New \$163 million CWSRF loan dated August 18, 2020 • On December 17, 2020, PRASA issued a limited offering to refund \$1.4 billion of the 2008 outstanding bonds for savings of \$348 million in debt service
● 2021	\$3.7 billion were obligated by FEMA on January 8, 2021, for projects to rebuild the Authority infrastructure after the 2017 Hurricanes impact

Beginning in the early 1990s, due to an inability to control operating expenditures and implement consistent, modest rate increases, the Authority's revenues became insufficient to meet all its obligations, including paying debt service on its outstanding revenue bonds. As a result, the Government provided the Authority with subsidies, including direct Government appropriations to fund the Authority's capital projects. In 1994, the Governor declared the Authority in a state of emergency, and its debt was downgraded below investment grade, eliminating the Authority's access to credit markets at reasonable rates to finance its CIP.

Between 1995 and 2004, to improve service and overall efficiency, the Government and the Authority engaged and contracted with private companies to manage, operate, and maintain its System. In 2004 the Government enacted Act 92-2004 which transferred all responsibilities back to the public sector. Post-privatization, and in efforts to allow the Authority to become more autonomous, a two-phased rate increase was implemented in October 2005 and July 2006; the first rate increase in almost 20 years. Implementation of the rate increase allowed the Authority to meet all operational and debt service obligations without the need for subsidies from the Government, which were discontinued shortly thereafter. However, the Authority still faced challenges in generating sufficient revenues to invest in its CIP. As such, the Authority covered CIP costs through interim financing until 2008.

In 2008, the Authority recovered its investment grade credit rating and was able to access the credit markets at reasonable rates. The Authority raised \$1.3 billion in new senior lien debt in March 2008 to finance its CIP and repay outstanding lines of credit. Also, \$284 million of PRASA's 1995 bonds were refunded for a total bond issuance of approximately \$1.6 billion.

Once the proceeds of the 2008 senior bonds were used for the construction of CIP projects, the Authority continued to finance its CIP with interim lines of credit from the GDB and bond anticipation notes ("BANs") from commercial banks until 2012. In 2012, the Master Agreement of Trust ("MAT") was amended to enhance bondholder protections and provide additional guarantees of repayment to senior bond holders by agreeing to a gross revenue pledge (i.e., senior lien debt service would be paid ahead of the Authority's operating expenses). The amendments to the MAT allowed the Authority to issue \$2.1 billion in senior revenue bonds in 2012, to term out \$1.1 billion in GDB and BANs interim lines of credit, and to provide \$350 million in additional funds for its CIP.

In 2013, a new rate adjustment was implemented, incorporating a new environmental, compliance, and regulatory charge into the rate structure, to generate enough revenue to cover all operating needs (i.e., expenses and debt service) at the time. In addition, a \$200 million BAN was extended to the Authority by a syndicate of local commercial banks to fund its CIP costs until a new, long-term bond issuance could be completed. The bond issuance was expected to be completed during FY2014 but was not executed due to downgrades in the Government's credit ratings, leading to subsequent downgrades in the Authority's credit ratings.

From late 2012 through 2014, the major credit rating agencies gradually downgraded the Authority's long-term credit ratings to non-investment grade territory, citing similar reasons for the decision.⁶ For example, Standard & Poor's justification for its downgrade was:

- "Relatively fragmented water and wastewater system, which, coupled with significant deferred capital needs, has resulted in high operational deficiencies;
- Historically poor financial performance stemming from unwillingness to raise rates, deficient billing and collection systems, and low liquidity;

⁶ Moody's: downgraded from Ba1 to Ba2 on December 2013; S&P: downgraded from BBB- to BB+ on March 2013; Fitch: downgraded from BBB- to BB+ on February 2014.

- Estimated \$1.5 billion in identified capital improvements over the next five years, stemming primarily from compliance-related mandatory projects, as well as other critical system improvements.”⁷

The downgrade in the rating would have been worse if not for the rate increase at that time that boosted confidence in the Authority’s financial operations.⁸

The lack of access to credit markets to finance its system improvements, coupled by years of underinvestment and systemic operational deficiencies, forced the Authority to suspend its CIP and accumulate approximately \$150 million by FY2016 in debt to its vendors and suppliers which was paid in full subsequently⁹.

In 2016, the US Congress enacted the Puerto Rico Oversight, Management, and Economic Stability Act (“PROMESA”) to address a fiscal emergency in Puerto Rico. In enacting PROMESA, Congress found, among other things:

- A combination of severe economic decline, and, at times, accumulated operating deficits, lack of financial transparency, management inefficiencies, and excessive borrowing has created a fiscal emergency in Puerto Rico.
- As a result of its fiscal emergency, the Government of Puerto Rico has been unable to provide its citizens with effective services.
- The current fiscal emergency has also affected the long-term economic stability of Puerto Rico by contributing to the accelerated outmigration of residents and businesses.
- A comprehensive approach to fiscal, management, and structural problems and adjustments that exempts no part of the Government of Puerto Rico is necessary, involving independent oversight and a federal statutory authority of the Government of Puerto Rico.

Accordingly, PROMESA provided for the creation of the Oversight Board, which provides oversight to the Authority so that it will achieve fiscal responsibility and access to the capital markets. On September 30, 2016, the Oversight Board designated the Authority as a covered territorial instrumentality subject to the requirements of PROMESA.

In September 2017, Hurricanes Irma and María struck Puerto Rico and caused devastating and lasting damage to the island. Both hurricanes badly damaged the electric power infrastructure, which in turn affected the continuity of water and sewer services to numerous customers

⁷ Chapman, Theodore, “Ratings Direct Summary: Puerto Rico Aqueduct & Sewer Authority; Water/Sewer”, Standard & Poor’s Rating Services, 26 March 2013.

⁸ “Moody’s downgrades Puerto Rico GO and related bonds to Ba2, notched bonds to Ba3 and COFINA bonds to Baa1, Baa2; outlook negative”, Moody’s Investors Service, 7 February 2014.

⁹ By the end of fiscal year 2018 the Authority was able to pay its outstanding debt with contractors after it commenced to make recurrent deposit to fund its CIP needs during fiscal year 2017.

throughout the island. The hurricanes also caused widespread damage to the Authority's infrastructure island wide, some of which is still affecting its operational performance.

Starting in 2016 and through July 2019, the Authority had in place various forbearance agreements that allowed for deferral of payments on its Federal Debt. On July 26, 2019, the Authority and AAFAF consummated definitive agreements that reprogrammed approximately \$1 billion in Federal Debt. This resulted in \$380 million in debt service relief over the next ten years, \$30 million in interest forgiveness, and renewed access to potential sources of federal funding.

Starting on January 1, 2018 the Authority implemented moderate annual rate adjustments through fiscal year 2022. The next rate adjustment is scheduled to become effective on July 1, 2021. The current rate adjustment schedule is an attempt at implementing more frequent, moderate rate increases to allow for financial self-sufficiency while being mindful of affordability concerns for low-income customers.

Starting in fiscal year 2019, the Authority re-activated regulatory-driven CIP projects. In addition, the Authority regained access to low interest federal loans during fiscal year 2020 as a result of the Federal Debt restructuring into Senior Indebtedness. In August 2020, the Authority obtained its first loan after the SRF debt restructuring from the CWSRF program for \$163 million at 1% interest rate with a 30-year maturity.

During 2020, Puerto Rico was affected by a series of earthquakes events and the worldwide COVID-19 pandemic, but nevertheless, on December 17, 2020, the Authority was able to refinance most of its 2008 Bonds with a bond issuance, through a limited offering, of \$1.37 billion resulting in \$350 million in debt service savings. Also, the new bondholders consented to a change of the revenue pledge from gross revenue pledge to net revenue pledge, which will become effective when all the remaining senior indebtedness holders, including Federal Lenders, consent to the change.

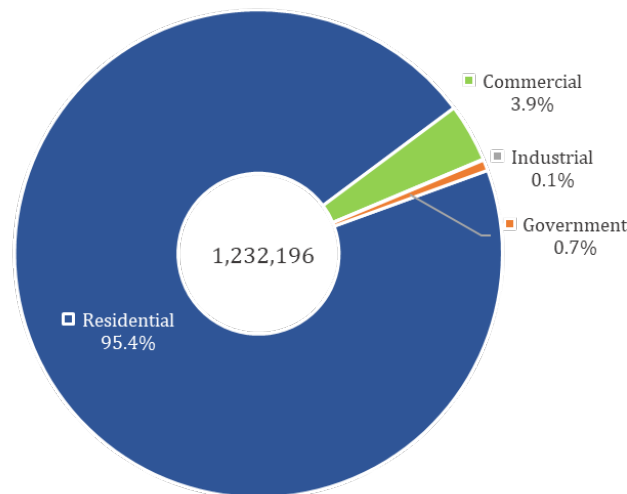
Lastly on January 5, 2021 after over three years of collaborative work by and among the Authority, COR3 and FEMA representatives, the President of the United States announced a total award of \$3.66 billion for infrastructure projects to rebuild PRASA's system from the devastation caused by the 2017 Hurricanes. Such funds were obligated by FEMA on January 8, 2021.

In recent years, the Authority, in collaboration with federal and local government parties and the Oversight Board, has made measurable progress towards reaching fiscal responsibility, as evidenced by its Federal Debt modification and subsequent access to SRF loans, its recent 2008 bond refunding, and the obligation of ~\$3.7B of disaster recovery funds from FEMA. For example, successful implementation of fiscal measures, such as mandated rate increases and more proactive and targeted collections practices, has improved the Authority's overall financial position. However, operational deficiencies remain. If left unaddressed, they pose a risk to water quality and supply, and affordability for the people of Puerto Rico. The Authority's history demonstrates that gaining access to credit markets, in and of itself, is not a predictive formula that guarantees long-term performance. Instead, the Authority must focus on achieving and maintaining sustainability across all areas of its operation, including management, finances, operations, and capital delivery.

1.4 Overview of the Authority’s system

The Authority serves most of Puerto Rico’s population, which based on the 2020 census as of April 2020 was 3,285,874 residents¹⁰ and millions of tourists every year. The Authority is the sole provider of two distinct services in Puerto Rico—clean water supply and wastewater management—serving approximately 96% and 59% of the population, respectively.¹¹ As of June 30, 2020, PRASA had 1,232,196 active accounts, of which 95% were residential accounts. Exhibit 1-2 provides a breakdown of customers by category.

EXHIBIT 1-2: CUSTOMER BREAKDOWN BY CATEGORY (FY20 FIGURES)



The Authority provides water and wastewater services throughout the island, which has an approximate area of 3,535 square miles (additional facts shown in Exhibit 1-3). Because Puerto Rico is an island with varied topography, dispersed demographic distributions, and a diverse mix of users, the Authority has a fragmented and localized system of water sources, treatment, and delivery (as shown in Exhibit 1-4 and Exhibit 1-5). While a few facilities serve the large urban centers and several adjacent communities in a single area, most of the Authority’s facilities are small in terms of service capacity and coverage.

¹⁰ Source: US Census Bureau – <https://www.census.gov/library/visualizations/2021/dec/2020-resident-population-map.html>

¹¹ Remaining 41% of wastewater service customers use septic tanks and other forms of wastewater disposal (smaller private effluent disposal systems).

EXHIBIT 1-3: OVERVIEW OF THE AUTHORITY’S INFRASTRUCTURE SYSTEM¹²



8 dams



113 Filter Plants with 136 intakes, producing ~540 MGD



51 Wastewater Plants treating ~207 MGD

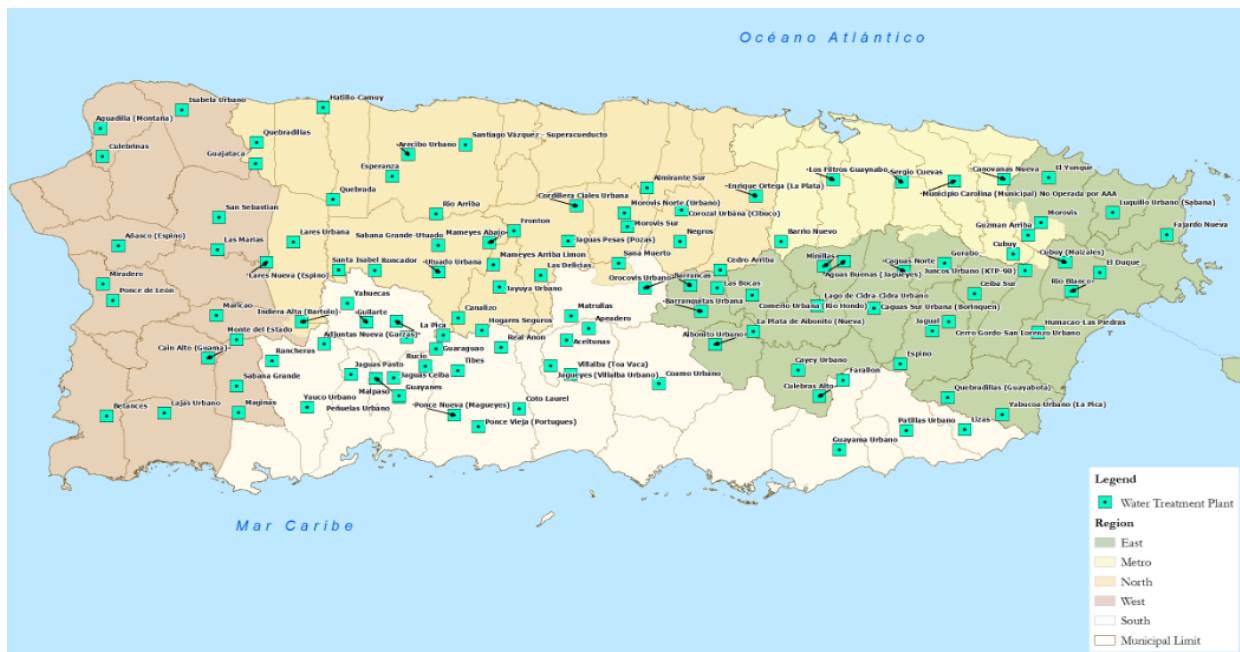


Over 3,700 auxiliary facilities:
Tanks - 1,557
Pump Stations – 1,976
Water wells - 249



Over 20,000 miles of pipes

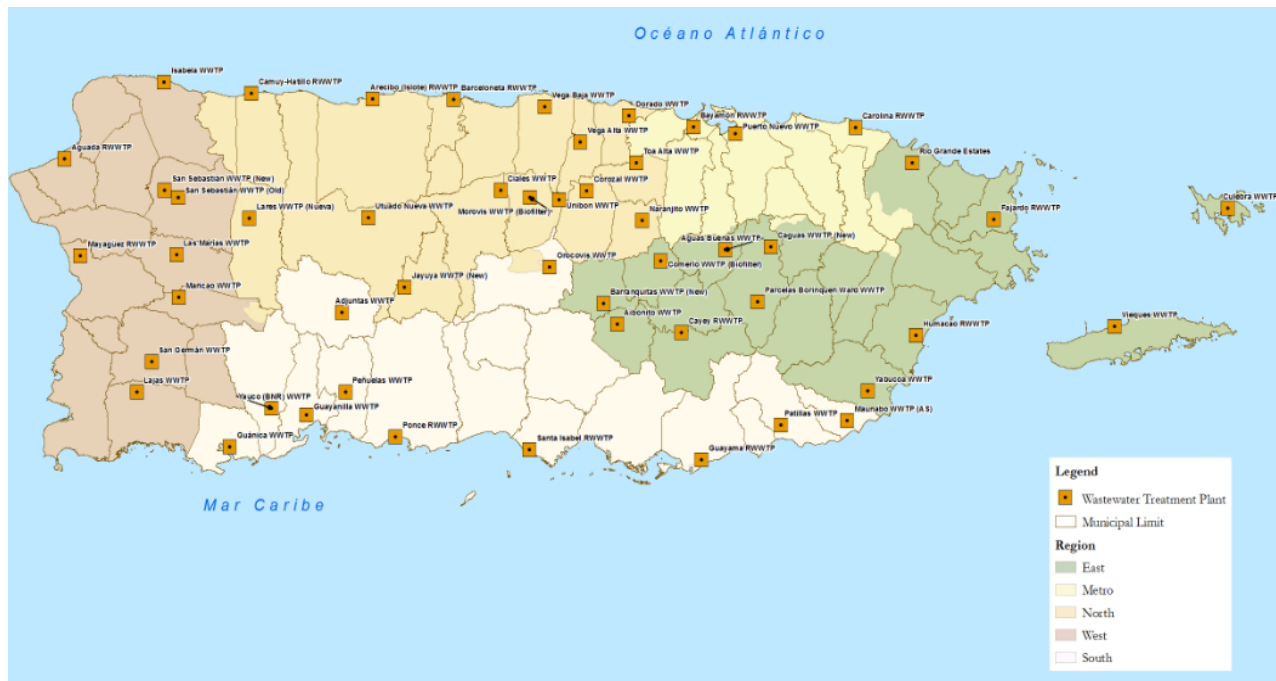
EXHIBIT 1-4: PRASA WATER TREATMENT PLANTS¹³



¹² Preliminary information on facilities is retrieved from PRASA’s GIS database as of June 30, 2020

¹³ Active facilities as of December 31, 2020, according to PRASA’s GIS database.

EXHIBIT 1-5: PRASA WASTEWATER TREATMENT PLANTS¹⁴



1.5 Governance and Organizational Structure

The Authority’s organizational structure and governance model are designed to facilitate the achievement of its mission, implementation of its Certified Fiscal Plan, and improvement of operational efficiency and accountability. Infrastructure Department plans and executes the CIP, in collaboration with, and the support of, the Finance Department.

- **Strategic and Corporate Planning Department** is responsible for the Project Management Office (“PMO”) that ensures the successful execution of PRASA’s Strategic and Fiscal Plan measures. Its Water Recovery Office is specifically responsible for all non-revenue water related measures.
- **Office of Environmental, Compliance, Health and Occupational Safety** focuses on providing quality water service and oversees compliance requirements related to the Authority’s agreements with the USEPA and the PRDOH.

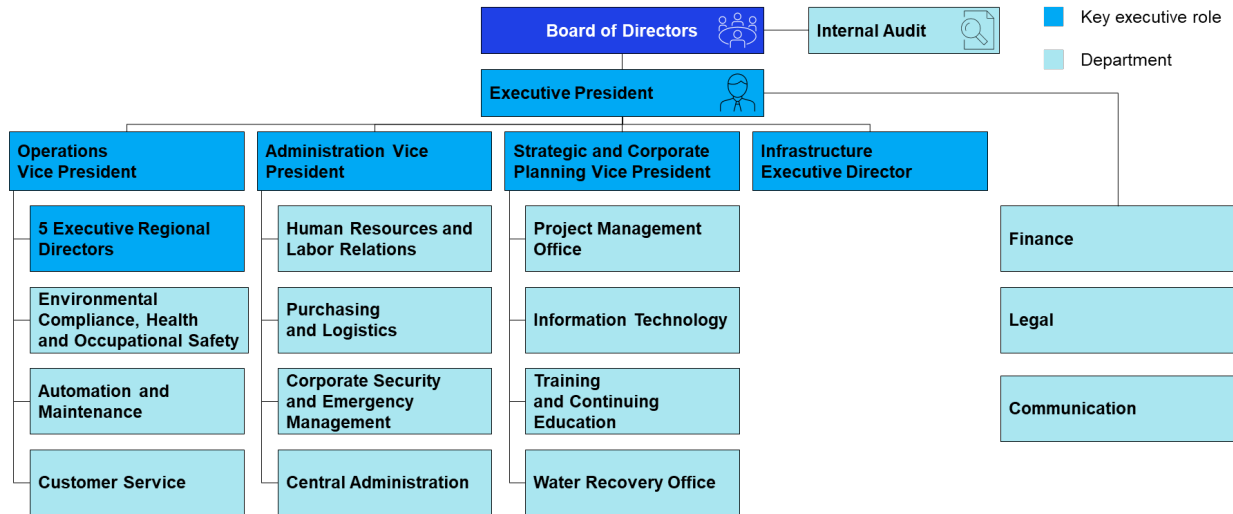
Exhibit 1-6 shows PRASA’s current organizational structure. Three key departments and offices to highlight are:

- **Infrastructure Department** plans and executes the CIP, in collaboration with, and the support of, the Finance Department.

¹⁴ Active facilities as of December 31, 2020, according to PRASA’s internal GIS database.

- **Strategic and Corporate Planning Department** is responsible for the Project Management Office (“PMO”) that ensures the successful execution of PRASA’s Strategic and Fiscal Plan measures. Its Water Recovery Office is specifically responsible for all non-revenue water related measures.
- **Office of Environmental, Compliance, Health and Occupational Safety** focuses on providing quality water service and oversees compliance requirements related to the Authority’s agreements with the USEPA and the PRDOH.

EXHIBIT 1-6: ORGANIZATIONAL STRUCTURE



1.5.1 Governing Board

PRASA has an experienced Governing Board that is independent from direct political influence and has the ability to effectively carry out its duties. Moreover, existing law ensures the board members are able to serve their entire term—and not be replaced due to changes in the political system—which is essential to maintain consistency and institutional knowledge in the decision-making process.

PRASA’s Governing Board is responsible for making and/or approving all major decisions taken by the Authority, including overall institutional policies, strategies and programs, operational budget and capital improvement, executive and key management recruitment and removal, approval of union contracts, major procurements and professional services and other contracts which are beyond the materiality limits awarded to the Executive President.

Pursuant to Act No. 68-2016, which sets requirements for a diversified and professionalized board, PRASA’s Governing Board was restructured to include seven members, consisting of four Independent Directors appointed by the Governor (with advice and consent from the Senate), two ex officio members, and one Consumer Representative, with the following qualifications:

1. One Professional Engineer licensed to practice in Puerto Rico with at least ten years of experience
2. One attorney with at least ten years of experience in Puerto Rico and licensed to practice in the Commonwealth of Puerto Rico

3. One Corporate Finance Specialist with wide knowledge and experience in the field
4. One Professional with expertise in any field related to PRASA's functions
5. The Executive Director of the Mayor's Association (ex officio member)
6. The Executive Director of the Mayor's Federation (ex officio member)
7. One Consumer Representative, a private citizen representing the Authority's customers

Additionally, an AAFAF representative will sit on the Governing Board while the Authority is a covered territorial instrumentality under PROMESA, thus temporarily increasing its size to eight board members as required by Act 2 of 2017.

Members appointed by the Governor shall be selected from a list of at least ten candidates, vetted by a recognized executive search firm, and evaluated according to objective criteria that includes the professional and educational backgrounds of the candidates.

Members not named by the Governor include the consumer representative, the Executive Director of the Mayor's Association, the Executive Director of the Mayor's Federation and the AAFAF representative. The consumer representative is elected by PRASA's customers through a process under the jurisdiction of the Puerto Rico Department of Consumer Affairs.

Term lengths for non-ex-officio members are as follows:

- The Consumer Representative will serve for a three-year term with no term limits.
- The Governor-appointed members shall serve staggered terms of five years and may only hold office for three terms¹⁵.

1.5.2 Executive Officers

Executive Officers are those appointed by the Governing Board. Having an independent and experienced Board select the leadership further protects the Authority from political influence and ensures only the most qualified individuals are selected for these roles.

The Executive Officers include:

- **Executive President:** The Chief Officer, based solely on experience, ability, and other qualities that especially enables them to lead the Authority, achieving its strategic mission and vision.
- **Infrastructure Executive Director:** Preferably a Licensed Professional Engineer with experience in activities related to the development and management of infrastructure projects.
- **Five Regional Executive Directors:** For the Metro, North, South, East, and West Regions.
- **Three Vice Presidents:** Operations, Administration, and Strategic & Corporate Planning.

¹⁵ Initially, two members were appointed for five years and two members for six years in order to achieve the staggered term requirement. After this, all members were shifted to five-year terms.

The President and the six Executive Directors serve five-year terms as established by Act No. 68-2016.

1.6 The Authority's Challenges

Over the past several years, Puerto Rico has faced significant economic and demographic challenges that have adversely affected the Authority, the effects of which have been aggravated by the 2017 hurricanes, 2020 earthquakes, and the current COVID-19 pandemic. Similarly, the Authority faces major financial, strategic, and operational challenges specific to water utilities.

PRASA faces a specific set of challenges related to its system complexity and Puerto Rico's economic environment, such as:

- Maintaining a large, complex, and capital-intensive system (managing over 20,000 miles of pipelines and a combined 164 water and wastewater treatment plants);
- Reducing longstanding and significant volumes of non-revenue water;
- Addressing System vulnerabilities to climate change and natural disasters;
- Declining population and water consumption;
- Meeting environmental and safety regulatory requirements, including implementing EPA/DOJ consent decree requirements;
- Maximizing available federal funding to enable the improvements of the System affected by the 2017 Hurricanes and 2020 earthquakes to industry standards.

While many of these challenges may be present in other water utilities, the Authority's challenges are heightened due to Puerto Rico's current economic situation and recent natural disasters, which at the same time are an opportunity to rebuild a better and more resilient System for the benefit of Puerto Rico.

1.6.1 Infrastructure System Challenges

1.6.1.1 Large and complex infrastructure

Water and wastewater utilities are among the most capital-intensive business entities in the world, requiring significant investment in property, facilities, and equipment in order to provide services.¹⁶ Water and wastewater utilities are approximately 76% more capital-intensive than power utilities, making investment and maintenance of the System more essential than other businesses.¹⁷

Exhibit 1-7 shows that PRASA has one of the most complex systems when compared to other US-based, peer utilities serving more than one million customers. This results in a higher degree of diversity throughout the Authority's assets in terms of size and age when compared to other

¹⁶ The term capital intensity is used to describe the amount of capital assets required to support a business in the generation of revenue.

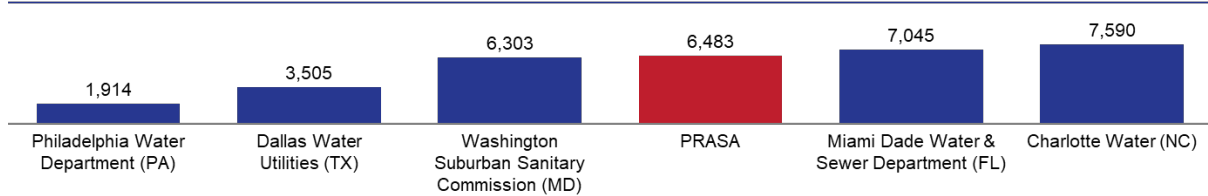
¹⁷ Improving Water Utility Capital Efficiency (USEPA and WRF, 2009).

utilities, driving up operating costs and capital requirements. There are also added safety challenges, system complexity, and structural risks when compared to more centralized infrastructure systems with larger regional facilities. Moreover, having such a large, complex network plays a role in the high level of water losses it experiences.

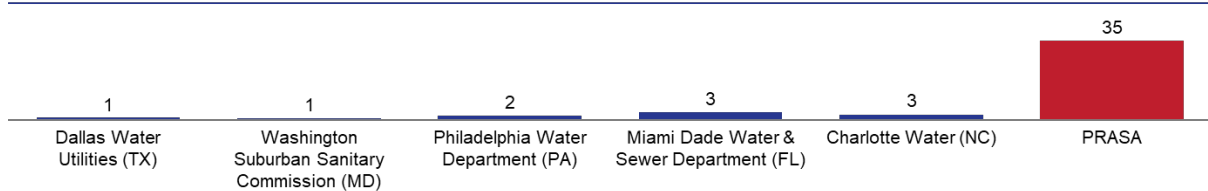
As a result of the complexity of the System and years of underinvestment, PRASA faces safety and reliability risks that will require high levels of capital investment to remediate. The long-term delivery of reliable, affordable, and safe water and wastewater services requires a near-term implementation of system improvement and water loss initiatives. PRASA plans to complete a Water and Wastewater 10-year Master Plan by September 30, 2021, focusing on achieving long-term structural integrity and ensuring it can provide reliable, affordable, and safe water and wastewater services for Puerto Rico while ensuring fiscal responsibility, operational sustainability and maximizing the benefits of the recently awarded \$3.66 billion in FEMA funds.

EXHIBIT 1-7: SYSTEM COMPLEXITY FOR COMBINED WATER AND WASTEWATER UTILITIES IN THE U.S. WITH MORE THAN ONE MILLION CUSTOMERS¹⁸

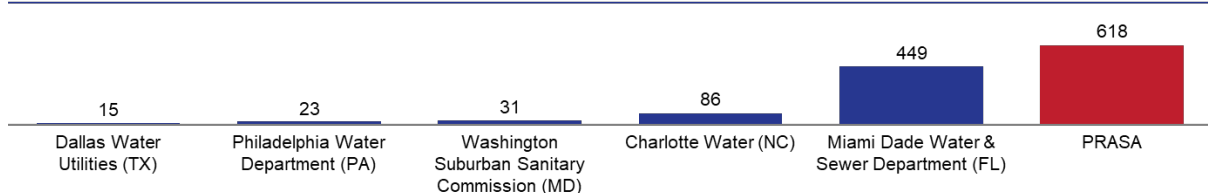
Network length¹ per million people in service population, miles



Water treatment plants per million people in service population



Pumping stations² per million people in service population



¹ Combined water and sewer network length
² Combined water and wastewater pumping stations

¹⁸ Utility specific data, available through public records.

1.6.1.2 High volume of Non-Revenue Water (“NRW”)

Water losses consist primarily of commercial and physical losses. The AWWA defines the water balance components of water losses as apparent (or commercial) and real (or physical) losses, as detailed in Table 1-1¹⁹.

Commercial losses are due to unauthorized activities such as theft, or operational shortcomings like meter error, misbilling, or data error. Hence, commercial losses represent water that is produced and reaches customers but is not billed, and therefore does not generate revenue for PRASA.

Physical losses, on the other hand, are due to leaks and breaks throughout the System network. It represents water that is produced but never reaches the end customer, and thus, is not billed. This is partially due to the gradual aging and depreciation of infrastructure. However, it’s also due to long-term under-investment, such as failure to install appropriate instrumentation for loss control and the lack of monitoring technology. As a result, PRASA is treating (i.e., producing) more water than is required, incurring significant added costs along the way (mainly through chemicals and electricity spending). Studies and recent events indicate this added production aggravates issues of water availability during periods of droughts, thus increasing the likelihood of rationing programs that affect ratepayers and may even interrupt critical functions across society.

TABLE 1-1: WATER BALANCE COMPONENTS AND OVERALL NRW (AWWA M36 MANUAL – NRW IN %²⁰)

System input volume (dispatched water)	Authorized consumption 36.9 ²¹ %	Billed authorized consumption	Billed metered consumption	Revenue water	
			Billed unmetered consumption		
	Water losses 63.1 ²² %	Unbilled authorized consumption		Unbilled metered consumption	NRW
				Unbilled unmetered consumption	
		Commercial losses (apparent losses)		Unauthorized consumption (theft)	
				Customer metering inaccuracies	
				Data handling (billing) errors	
		Physical losses (real losses)		Main line leakage	
	Storage tank overflows				

¹⁹ “M36 Water Audits and Loss Control Programs, 4th Edition”, AWWA, 2016.

²⁰ The NRW figures are based on a FY 2019 Water Audit assessment with preliminary estimates subject to change due to low level of water production metering during the audit period.

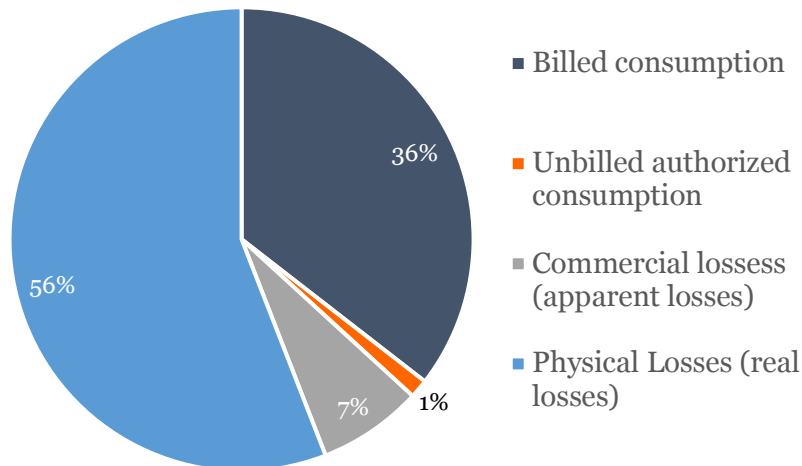
²¹ *Ibid*

²² *Ibid*

			Service connection leakage	
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Source: AWWA and International Water Association

TABLE 1-2: PRASA ESTIMATED NRW COMPONENTS (FY2019 WATER AUDIT–NRW IN %²³)



PRASA’s underinvestment in metering infrastructure affects both its customer service capabilities and its ability to address NRW more broadly throughout its system (see Table 1-2 for detailed information of types of loss and billing). To illustrate, some of PRASA’s old, mechanical meters have an estimated error margin of up to 14%.²⁴ Moreover, PRASA estimates that roughly 15% of all small meter accounts, a customer segment that comprises most of the Authority’s customer base are billed based on consumption estimates, not on actual meter readings. Inaccurate consumption data, combined with the fact that PRASA does not reliably measure its water production, effectively precludes PRASA from identifying, sizing, and managing the impacts of NRW.

Estimates from FY2015 indicate that approximately 55% of water (299 MGD of the average 557 MGD) produced is lost and/or not billed by PRASA. Of the total amount of water losses, approximately 64 MGD (~21%) was due to commercial losses and 235 MGD (~79%) due to

²³ The NRW figures are based on a FY 2019 Water Audit assessment with preliminary estimates subject to change due to low level of water production metering during the audit period.

²⁴ Professional Opinion report: Puerto Rico Aqueduct and Sewer Authority; prepared by Raftelis Financial Consultants, 2016

physical losses.²⁵ These levels of water loss are two to three times higher than comparable utilities.²⁶

Since commercial losses require less upfront capital than physical losses, PRASA is currently prioritizing commercial losses over physical losses. A portion of commercial losses can be converted into service revenues, primarily through meter replacement, resulting in a reduction of meter error, theft, and data mishandling. For this reason, PRASA must address commercial losses as a Fiscal Plan measure, either implemented independently or through a P3 agreement (further detailed in Chapter 3).

On the other hand, reductions in physical water loss can result in corresponding cost savings associated with water production (mainly chemicals and electricity). To address physical losses, typical operational measures include installing appropriate flow monitoring equipment, performing leak detection throughout the water system (i.e., water mains, service lines, meters, hydrants, valves), and reducing water pressure where potential leaks may occur. The capital investment requirements to decrease leaks include investing in the replacement of infrastructure, specifically underground water lines, making this a much more time and resource intensive effort compared to commercial loss reduction. However, since the majority of PRASA's NRW comes from physical water loss, leak repairs and reductions must be a top priority for PRASA. As with the recommended approach to addressing commercial losses described above, PRASA should also be strategic in identifying the leaks that have the most impacts and prioritize them accordingly. PRASA's efforts to reduce physical losses are detailed in Chapter 3.

Measuring NRW with reasonable precision, presupposes meter reading accuracy. In this regard, the reliability of the Authority information to evaluate NRW has been affected by damage to its metering infrastructure from hurricanes and earthquakes, including on the production side (master meters) and on the consumption side (customer meters); higher than desired meter degradation due to underinvestment in its meter replacement program has also been a factor.

PRASA's failure, over the years, to address both commercial and physical water losses contributes significantly to its financial and operational challenges. Thus, PRASA recognizes that it must first gain better data on the actual levels of water produced and on customer consumption to better understand how to prioritize works and resources to reduce system-wide NRW levels. Moreover, the Authority believes a lower NRW figure may lead to higher revenues, lower operation and maintenance costs, and more reliable water supply through resource conservation efforts, which may reduce the need for certain capital improvements to increase water supply capacity (as needed). For example, the System's high levels of physical water losses have increased costs and have placed a burden on Puerto Rico's residents, businesses, and local government, thereby increasing their vulnerability to rationing measures implemented during droughts. As such, the

²⁵ *Ibid*

²⁶ PRASA's commercial and physical losses for FY2015 were 44 and 160 gallons per service connection per day, respectively. For combined water and wastewater utilities, commercial losses of comparable utilities are 21 gallons per service connection per day and physical losses from 95 gallons; 2018 AWWA Utility Benchmarking

Authority's Management has established NRW reduction as a top priority in this Fiscal Plan and its 10-Year Master Plan.

1.6.2 Vulnerability due to climate change, natural disasters, and other COVID-19 considerations

1.6.2.1 Climate change and natural disasters

Worldwide, water utilities have been exposed to more frequent hazards from climate change and natural disasters such as hurricanes, droughts, storms, floods, and rising sea levels. In some regards, given its location, the Authority is even more exposed to these risks. Since FY2017, Puerto Rico has been affected by two Hurricanes (Irma and Maria in September 2017), and a major earthquake in Puerto Rico's southern region (January 7, 2020, with a magnitude of 6.4 on the Richter scale), and moderate to severe drought conditions (January to July 2020).

Hurricanes

Based on an evaluation and estimates performed by a third-party engineering firm contracted by PRASA, Hurricanes Irma and Maria alone caused \$769 million in damages to infrastructure based on certain site visits, but excluding most of the underground infrastructure (e.g., underground pipeline) and the cost to rebuild the facilities to current industry standards. Recently, on January 8, 2021 FEMA obligated a historic \$3.7 billion award to the Authority to restore damaged infrastructure from the Hurricanes to industry standards without regard to its pre-disaster condition.

Earthquakes

On January 7, 2020, Puerto Rico was struck by a 6.4 magnitude earthquake that caused infrastructure damages, mainly in the southern portion of Puerto Rico, an island-wide power outage, and associated water shortages. A preliminary assessment by the United States Geological Survey, estimated total economic damages of approximately \$838 million. According to a January 29, 2020, report by the United States Geological Survey, Puerto Rico is at risk of other, potentially catastrophic earthquakes in the near term. In addition, Puerto Rico continues to experience aftershocks that are not expected to stop in the near future. For example, on May 2, 2020, a 5.4 magnitude earthquake struck Puerto Rico's southern coast.

Drought

According to the Drought Report 2014-2016 published by PRDNER, Puerto Rico has been experiencing atypical drought conditions since November 2013, especially in the southern part of the Island. Conditions worsened in the summer of 2014 as the central area of Puerto Rico also began to feel the effects of water scarcity. By April 2015, the drought intensified, affecting the entire Island, triggering water rationing that affected over 400,000 customers.

In 2020, about half the Island experienced moderate to severe drought conditions. A water rationing plan was implemented for approximately 140,000 customers served by the Carraízo system from July 2 to July 27, 2020.

To minimize the impact of droughts and potential water rations, the Authority established a plan to implement measures to manage water pressure, reduce water production and activate

wells to protect and extend water source availability when declining reservoir levels and other trends indicate the possibility of a drought. Such NRW mitigating actions to minimize the service impact with system interconnections will reduce the vulnerability to potential water rationing measures.

Vulnerability Study

As the Earth’s temperature rises and ocean temperatures become warmer for longer periods of time, an increase in the frequency of severe weather events is expected.²⁷ In FY2015, PRASA completed a Vulnerability Study on the impacts of climate change on the System and concluded that the three following stressors present the highest impact risk to PRASA’s System:

- **Sea level rise** threatens flooding coastal infrastructure, which could force PRASA to decommission specific infrastructure along the coasts altogether. It could also make it more difficult to discharge stormwater and wastewater as well.
- **Changes in precipitation patterns** could negatively impact the Authority’s infrastructure and service levels. On one hand, more precipitation in the short-term increases turbidity, affecting the overall water quality, thereby increasing water treatment costs. On the other hand, less precipitation in the long term leads to water scarcity, which affects service reliability and billable water consumption.
- **Hurricane and tropical storms** and the damage caused by such events could generate significant infrastructure damage and impose large additional, and unforeseen, capital expenses.

The risks identified in the Vulnerability Plan served as the basis for PRASA’s Adaptation Plan, which was completed in April 2015.

PRASA is in the process of updating its Vulnerability Analysis and Emergency Response Plans to comply with the America Water Infrastructure Act of 2018 (“AWIA”). The updated plans will include an assessment of PRASA’s System vulnerability to several threats, including climate change and natural disasters. Similarly, PRASA is also updating its 10-year Master Plan with information from the 2020 census to be able to identify projects that properly address challenges arising from climate and population change. Integrating these capital investment requirements into future planning, strategies, and—most importantly—the CIP will be critical to PRASA’s preparedness to face climate change.

1.6.2.2 COVID-19 challenges

Like the rest of the world, Puerto Rico was confronted with the COVID-19 global pandemic in late February 2020, which required immediate and urgent action. Since March 15, 2020, the Government has enacted several Executive Orders, which have implemented social distancing measures such as the closure of all businesses in Puerto Rico, a curfew for all residents, and penalties to enforce compliance. Furthermore, on April 9, 2020, the Government approved Act

²⁷ Khan, J. Stuart et al., “Extreme weather events: Should drinking water quality management systems adapt to changing risk profiles?”, *Water Research*, Volume 85, November 2015

39-2020, which prevents PRASA and other utilities, from disconnecting residential and commercial customer’s water services due to non-payment during the on-going emergency.

The COVID-19 pandemic mitigation policies have affected both PRASA’s system and its day-to-day operations. Some of these effects include lower collections, higher operating costs caused by shortage of supplies and interruption to contracted services, delayed operating tasks, and CIP implementation. Furthermore, workforce safety issues have created challenges to service continuity as some employees were unwilling to perform work due to concerns for their health and their families, leading to work backlogs and delays.

Despite these challenging circumstances, PRASA has taken proactive actions to address these issues, including:

- Maintaining on-site employees at minimum required levels in order to ensure an adequate and uninterrupted service while minimizing potential virus exposure;
- Providing PPE to all employees required to report on-site;
- Promoting remote work for administrative and support personnel, significantly expanding the number of virtual tasks performed, and increasing virtual communication among PRASA’s personnel;
- Developing—in collaboration with labor unions—a Plan for Exposure Control on Return to Work, which establishes prevention and control policies to manage confirmed cases or symptomatic personnel, and security measures specific to site types (e.g., plants, commercial agencies, lab), amongst others;
- Promoting alternative payment options to improve collections; and
- A public awareness campaign to educate ratepayers about the risk of debt accumulation and eventual service disconnection, when applicable.

The American Rescue Plan Act of 2021 (the “ARP”) passed on March 10, 2021 and signed into law by President Biden on March 11, 2021 provides for additional funds to address the impact of COVID-19 in the United States and its territories. Chapter 7 provides more detail on the potential impact of ARP-relevant provisions.

1.6.3 Customer demographic challenges

1.6.3.1 Economic crisis and population decline

For over a decade, Puerto Rico’s economic crisis has caused severe hardships on its residents. This difficult economic landscape, underpinned by years of negative economic growth, has resulted in increased poverty levels, population decline, and reduced labor participation rates, all of which have negatively impacted PRASA’s finances and thereby, its operations. Recent natural disaster events have further exacerbated this situation, accelerating population out-migration although the most recent official 2020 US Census points to a reduction in the pace of outmigration.

Between 2010 and 2020, Puerto Rico’s population decreased by 11.8% based on estimates published by the U.S. Census Bureau.²⁸ This reduction resulted in an updated CIP oriented to compliance, recovery, and reconstruction projects rather than to growth or increased supply, other than projects to improve resiliency. Under this reality of population decline, customer meters replacement is key to properly account for water consumption.

1.6.3.2 Rate affordability

Affordability of service is an important concern for all utilities. The rate structure needs to achieve a balance between adequate cost recovery and minimizing financial burden on all customer classes. For this reason, one of the 2021 Fiscal Plan’s measures is to perform a comprehensive cost of service and rate structure design study to ensure PRASA has an optimal rate structure in place.

1.6.4 Regulatory Challenge

1.6.4.1 Environmental Regulations

Water utilities, such as the Authority, are highly regulated by multiple local and federal agencies to ensure the protection of consumers’ health and the environment. Implementing projects to comply with these regulations requires a high level of investment and increases operating costs, which must be balanced against funding availability and affordable rates.

The Authority is currently under a Consent Decree with the U.S. Environmental Protection Agency (USEPA) and the Puerto Rico Department of Justice (DOJ) and a Transactional Agreement with the Puerto Rico Department of Health (DOH). These agreements require the Authority to take certain actions, including the execution of certain projects based on a prioritization system. It is the Authority’s view that with renewed access to SRF funds, it will be able to execute compliance mandated projects which will result in improved quality of service.

1.6.5 Financing Challenges

As presented below, the Authority has not yet regained access to credit markets to fund its capital obligations. The Authority’s Senior Lien debt is currently rated Ca and CCC by Moody’s and Fitch, respectively. According to Fitch ratings definitions, PRASA’s current ratings indicate that PRASA’s bonds are below investment grade, and represent long-term, speculative credit risk to its investors. In December 2020, the Authority refinanced a portion of its outstanding debt through a limited offering that was non-rated given delinquent audited financials, among other items. The Authority’s main focus is to efficiently allocate and deploy low-cost federal funds to restore the earthquake and hurricane-damaged System to current industry standards while also prioritizing its fiscal health through implementation of sound fiscal management.

²⁸ Source: US Census Bureau: Table E: Numeric and Percent Change in Resident Population of the 50 States, the District of Columbia, and Puerto Rico: 2020 Census and 2010 Census

1.6.5.1 Access to FEMA funding

Recovery funds from FEMA are essential to restore the System after damage caused by the 2017 hurricanes.

FEMA obligated \$3.7 billion to the Authority to restore damaged infrastructure to industry standards without regard to pre-disaster condition and to restore components not damaged by the disaster, when necessary, to fully effectuate restoration of the disaster-damaged components and the function of the facility or system to industry standards. Some of the major challenges associated with these funds will be to (i) effectively ensure the proper match for such funds; (ii) deliver the planned CIP on-time and on-budget; and (iii) control costs under an environment of scarcity of qualified contractors and materials throughout the Island as a byproduct of pandemic-imposed restrictions. Nonetheless, the new FEMA funding offers a generational opportunity to update and upgrade PRASA's infrastructure and reduce its vulnerability to severe climate events moving forward. Chapter 7 covers, in greater detail, the process to obtain, disburse, and monitor the use of such funds.

With regard to the 2020 earthquakes, the Authority estimates that its System incurred damages of approximately \$10.6 million in the affected area, of which at least 75% is expected to be eligible for federal funding. As a result of the earthquakes, the Authority also incurred incremental operating costs of approximately \$5 million, of which 75% is expected to be reimbursed by FEMA.

1.6.5.2 Access to federal programs funds, other than FEMA

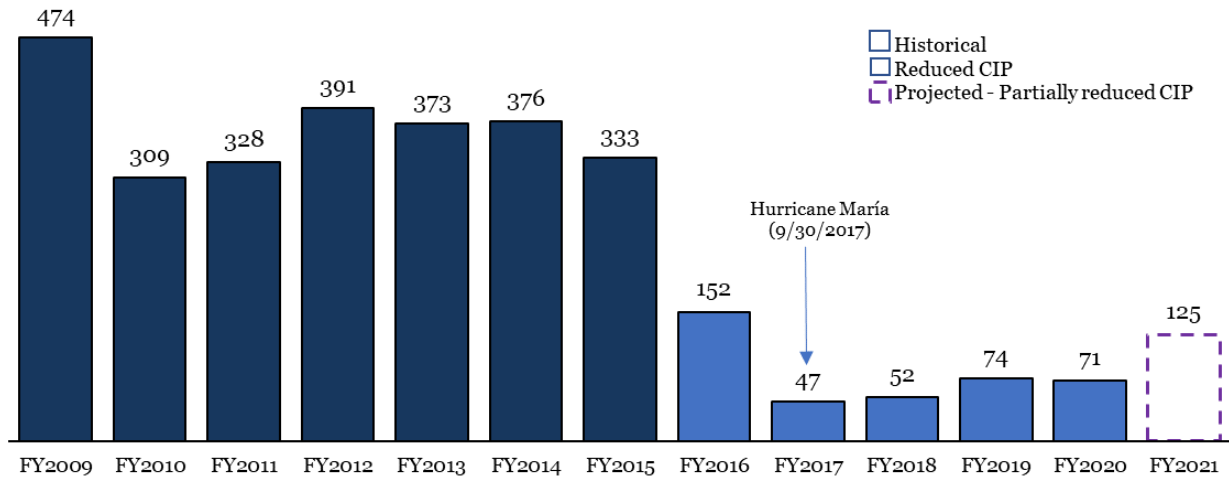
Historically, the Authority accessed federal funds from programs such as the USDA Rural Development Program and the USEPA State Revolving Fund Programs. From fiscal year 2016 to 2019, the Authority was not able to access such funds due to an ongoing debt restructuring process. However, since July 26, 2019, after the Federal Debt was consensually modified, PRASA regained access to funding under these programs. On August 18, 2020, the Authority received a loan of \$163 million from the CWSRF program and is in the process of obtaining new loans from the DWSRF and the CWSRF programs. Discussions with USDA Rural Development are also ongoing to obtain funds for capital projects that qualify under its programs. In addition, it is recommended that PRASA ensure its readiness for any additional Federal water infrastructure funding that may be made available in the near future, e.g., proposed Federal American Jobs Plan.

1.6.5.3 Credit markets

PRASA's inability to access credit markets at reasonable rates require, excluding federal funds, the Authority to self-fund its CIP. Since fiscal year 2017, the Authority made deposits into the CIP fund to retire its outstanding debt with contractors and pay for certain CIP needs. Nonetheless, PRASA's ability to invest in its CIP and other System needs has suffered from its lack of access to credit markets, as evidenced in Exhibit 1-8 below.

After the Federal Debt modification and moderate rate increases implemented recently, PRASA's financial condition improved and in December 2020 the Authority refinanced almost all its 2008 bonds without extending their original maturity and achieving approximately \$350 million dollars in total debt service cost reduction.

EXHIBIT 1-8: CAPITAL IMPROVEMENT PROGRAM FUNDING (FY2009-FY2021, IN \$ MILLIONS)²⁹



²⁹ Funding sources include deposits to CIP fund from operating revenues, FEMA reimbursements, and PRASA cost share (Discussed in greater detail in Chapter 7).

2 Pre-Measures Financial Projections

The Pre-Measures Financial Projections considers the Authority’s current financial situation and assumes the Authority will continue its current state of operations without implementing any new measures to increase revenues, reduce expenses, or modify existing debt service obligations. The Pre-Measures Financial Projections reflect the Authority’s financial needs if it were to cover all of its current obligations under a status-quo situation. The Pre-Measures Financial Projections includes the benefits from the completed debt restructuring measures. It does not include, however, the effects of the proposed measures in Section 3.4: “Summary of Proposed Measures” of the 2021 Fiscal Plan targeted to continue improving PRASA’s operational and financial situation.

The main assumptions underlying the four components of PRASA’s financial projections—(i) revenues, (ii) expenses, (iii) CIP and (iv) financing and debt service—are explained throughout this Chapter.

2.1 Main Assumptions

PRASA’s Pre-Measures Financial Projections presented herein reflect the best projections of future results based on (i) PRASA’s current financial situation and (ii) the following general assumptions:

- Service rates as approved in 2013 not including additional rate adjustments required as a revenue measure by the Oversight Board already implemented as of July 1, 2020;
- Current level of expenses mostly increased by inflation, including projected one-time cost, and excluding impact from unknown, extraordinary circumstances;
- Current contractual debt service, including the benefit of the Federal Debt modification completed on July 26, 2019 and the debt refinancing closed on December 17, 2020;
- Capital Improvement Program as approved by PRASA’s Governing Board on March 25, 2021 (Resolution 3209);
- Macroeconomic indicators developed for and presented in the 2021 Commonwealth Certified Fiscal Plan as of April 23, 2021.
- No impact from the ARP has been incorporated into the financial projections included herein until more visibility is attained regarding the potential funds to be assigned to the Authority; and
- No change in the federal minimum wage as is currently being discussed in the US Congress.

A summary of some specific assumptions used to develop the 6-year Pre-Measures Financial Projections are included in Table 2-1.

TABLE 2-1: ASSUMPTIONS SUMMARY TO DEVELOP THE FISCAL PLAN

Revenues	<ul style="list-style-type: none"> • Billings: Residential, Commercial and Government billings are projected based on macroeconomic and demographic indicators.³⁰ Industrial billing is projected based on real GNP macroeconomic indicators.³¹ • Collections Rate: <ul style="list-style-type: none"> ▪ Residential, commercial, and industrial: 96% ▪ Government: 91% in FY2022, which gradually increases to 93%³² by FY2026
Expenses	<ul style="list-style-type: none"> • Payroll and related costs: Based on average cost per FTE expected as of June 30, 2021 (4,677), including the assumption that headcount will increase to 4,700 by FY2022 and stay at that level throughout the Fiscal Plan period. • Electricity: Based on FY2021 preliminary consumption projections and electricity rates as included in the Commonwealth’s fiscal plan certified by the FOMB on April 23, 2021³³. • Other expenses: Projected based on identified needs for FY2022 and increased by associated inflation rate, excluding non-recurring items.
Capital Improvement Program	<ul style="list-style-type: none"> • Reconstruction and Recovery Projects: Estimated cost based on FEMA obligation of funds (for 90% of the total estimate) and the 10-year plan for projected disbursements to address the impact from 2017 Hurricanes to PRASA’s infrastructure, assuming the 10% match for such projects will be provided by the CDBG-DR Program. • Compliance Projects: Based on agreements with USEPA and DOH as being renegotiated. • Renewal and replacement: Estimated based on minimum projected needs of the System.

³⁰ The 2021 Fiscal Plan incorporates the macroeconomic and demographic projections developed for and presented in the 2021 Commonwealth Fiscal Plan submitted to the FOMB on March 26, 2021.

³¹ *Ibid.*

³² Gradual increase to 96% on government collections under recently implemented initiatives considers capturing outstanding past due amounts from government customers.

³³ The projected electricity rate for FY2022 excludes payments on debt and pension restructuring from the projected electricity rate structure in the Commonwealth’s Fiscal Plan (FY2022-FY2026).

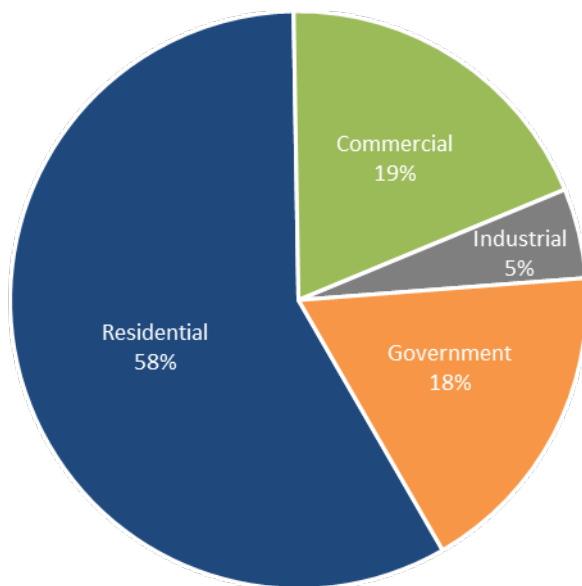
<p>Contractual Debt Service</p>	<ul style="list-style-type: none"> • Debt Service: Projected based on current debt service as per amortization tables, reflecting the benefit of the Federal Debt modification, the refunding of a substantial portion of the 2008 Bonds and exclusion of debt service on PFC SuperAqueduct debt.
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2.2 Revenues

2.2.1 Customers and Revenue Base

As of June 30, 2020, PRASA had 1,232,196 active accounts, of which 95% were Residential accounts. Residential customers account for 58% of the Authority’s revenues. Exhibit 1-2 included in Chapter 1 provides the breakdown of customers by category. Billings by customer type during FY2020 is presented in Exhibit 2-1.

EXHIBIT 2-1: FY2020 REVENUE BREAKDOWN BY CUSTOMER CATEGORY



2.2.2 Service Revenue

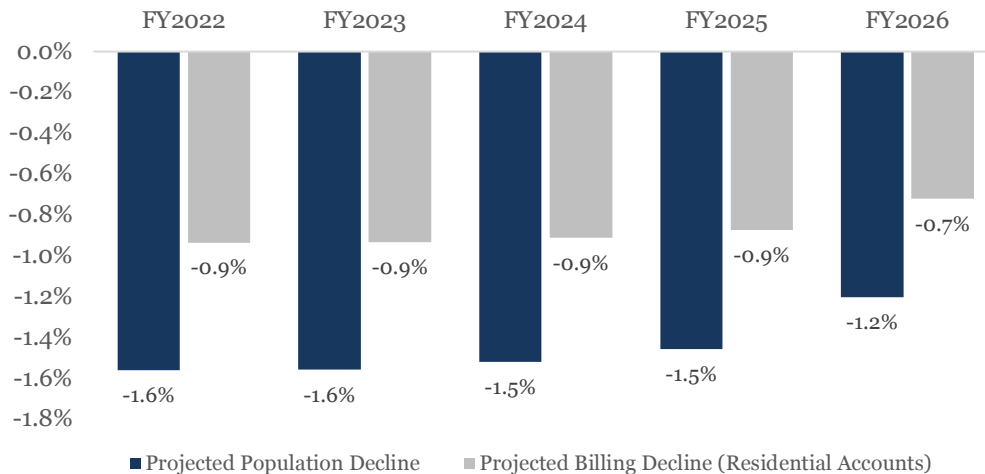
The Authority’s service revenues (base fee and service charges) are derived from water and wastewater service billings and are presented net of current subsidies (i.e., PAN, TANF, ASES and Public Housing), and are a product of the number of active accounts and monthly consumption per account. Service revenue projections in the 2021 Fiscal Plan start from FY2021’s projected billings and are presented based on the current rate structure and adjustments implemented as of FY2021. Pre-measure service revenues do not include future projected rate adjustments as those are further detailed in Chapter 3.

2.2.2.1 Billing Trend

Since the 2017 Hurricanes, and more recently due to the impact of the COVID-19 pandemic, revenue projections have been materially reduced as a result of declines in population, water consumption, and overall levels of economic activity in Puerto Rico.

Exhibit 2-2 illustrates the projected population decline as well as the expected reduction in billings.

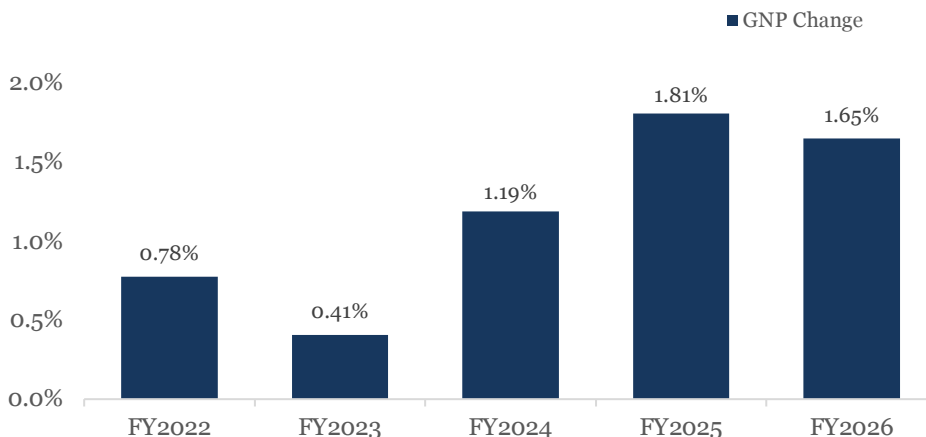
EXHIBIT 2-2: POPULATION AND RESIDENTIAL BILLINGS TREND³⁴



Billings for Industrial accounts are projected using the nominal Gross National Product (GNP) forecast as included in Exhibit 2-3.

³⁴ Based on the macroeconomic and demographic projections developed for and presented in the 2021 Commonwealth Fiscal Plan submitted to the FOMB on March 26, 2021.

EXHIBIT 2-3: GNP GROWTH RATES³⁵



2.2.2.2 Collections Rate

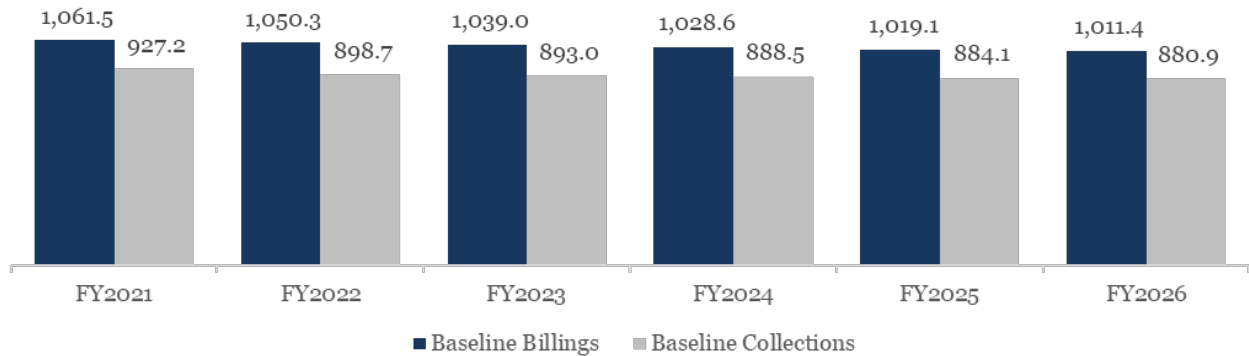
Prior to the 2017 hurricanes, the 2020 Earthquakes and the current pandemic, PRASA’s collection rate historically averaged 96%. During FY2021, year-to-date collection rates as of Q3 for government, industrial and commercial accounts averaged above 100%. Whereas the collection rate for residential accounts was 95%. Accordingly, PRASA experienced slight increases in its outstanding residential receivables partially driven by the effects of Act 39-2020 enacted in response to the pandemic state of emergency. However, starting in FY2022, PRASA projects to return to a 96% collections rate for residential, commercial, and industrial accounts and remain at that level through FY2026. For government accounts, PRASA is projecting a 91% collections rate for FY2022, increasing by 0.5% each fiscal year thereafter and reaching 93% by FY2026.

2.2.2.3 Projected Service Revenues

Based on the assumption set forth above, PRASA’s projected service revenues and collections are presented in Exhibit 2-4.

³⁵ Based on the macroeconomic and demographic projections developed for and presented in the 2021 Commonwealth Fiscal Plan submitted to the FOMB on March 26, 2021.

EXHIBIT 2-4: PRE-MEASURES BILLINGS AND COLLECTIONS (IN \$ MILLIONS)



2.2.3 Miscellaneous Income

Miscellaneous income includes revenues received mainly from interest income and Developers’ Contributions.³⁶ Based on historical results, miscellaneous income is projected at \$2 million per year during the 2021 Fiscal Plan period.

2.2.4 Summary of Project Pre-Measures Revenues

Table 2-2 summarizes projected revenues for the 2021 Fiscal Plan period, presented on a cash basis.

TABLE 2-2: PRE-MEASURES PROJECTED REVENUES (IN \$ MILLIONS)

In \$ Millions	FY2021	FY2022	FY2023	FY2024	FY2025	FY2026	FY21/26
Service Collections	925.2	896.2	890.5	886.0	881.6	878.4	5,357.8
Miscellaneous Income	2.0	2.5	2.5	2.5	2.5	2.5	14.5
Total Revenues	927.2	898.7	893.0	888.5	884.1	880.9	5,372.3

Accumulated impact from rate adjustments implemented in January 2018, July 2018, July 2019 and July 2020 is not reflected in the Pre-Measures Financial Projections and, instead is included in Chapter 3 under Recently Implemented measures. Moreover, projected rate adjustments to be implemented in the future are also included in Chapter 3 under Revenue Enhancement Measures.

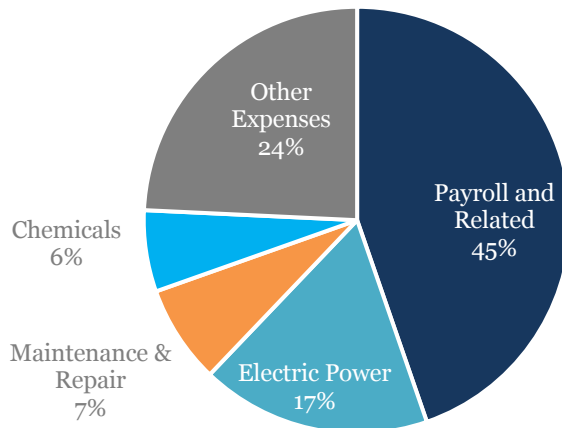
2.3 Expenses

Exhibit 2-5 provides the operating expense breakdown by category. Approximately two thirds of PRASA’s expenses are made up by payroll and electricity costs. Adding assets maintenance & repair and chemicals, these four cost categories represent approximately 75% of total expenses.

³⁶ Fees paid by developers to connect their projects to the Authority’s System

Other expenses consist largely of costs directly related to operations, including rentals, security services, insurance, billings and collections related costs, water purchase, sludge disposal, water transport, among others.

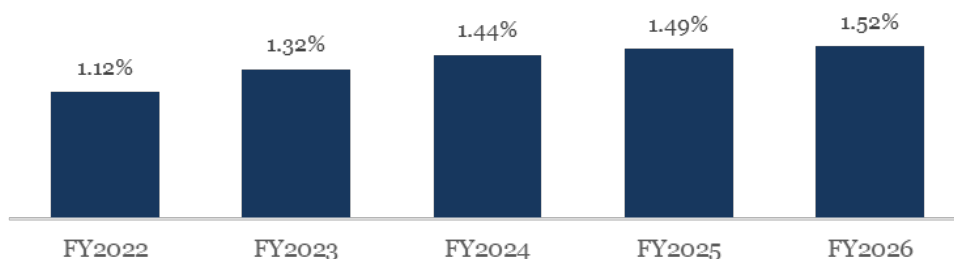
EXHIBIT 2-5: EXPENSE BREAKDOWN BY CATEGORY (FY2021), %



For the Pre-Measures Financial Projections most of the expenses were increased year-over-year to account for inflation. However, PRASA used different assumptions for payroll & related and electricity expenses, which are further explained below.

Inflation rates used to project expenses (other than payroll & related and electricity expense) are included in Exhibit 2-6.

EXHIBIT 2-6: PROJECTED INFLATION RATE³⁷



2.3.1 Payroll and Related Costs

PRASA’s largest expense category, representing 44% of its annual operating budget, is Payroll and Related Costs. This cost category includes direct labor costs and associated benefits, such as healthcare and pension obligations, and is presented net of capitalized labor costs related to capital projects (estimated at 3.7% of total operational expenses³⁸ starting in FY2022).

The following main assumptions were applied to develop the Payroll and Related Costs projections:

- Headcount of 4,700 throughout all years of the Fiscal Plan
- Implementation of Act 26-2017, including the following change in benefits:
 - Maximum overtime factor to 1.5 times³⁹
 - Reduction of vacation days to 15 days maximum
- 18 days of sick leave per year maximum as set forth by Act 176-2019
- Healthcare plan costs associated with the medical benefits plan in effect prior to the implementations of the FY2021 coverage
- Pension costs paid through “PayGo” based on the projections included for the Employees Retirement System (ERS) in the Commonwealth’s Certified Fiscal Plan as of April 23, 2021.
- Salaries have not been adjusted to reflect any potential impact of the change in the federal minimum wage currently being discussed and under analysis by the US Legislature nor any other change to PRASA’s current retribution scales.

³⁷ Based on the macroeconomic and demographic projections developed for and presented in the 2021 Commonwealth Fiscal Plan submitted to the FOMB on March 26, 2021.

³⁸ Source: PJ Sun LLC Report on Overhead Capitalization

³⁹ Prior to Act 26-2017, maximum overtime factor was 2.5 times.

2.3.2 Electricity

The cost of electricity represents PRASA’s second largest expense and is highly sensitive to fluctuations in electricity rates, which are established by the Puerto Rico Energy Bureau’s (PREB). To illustrate, a ±\$0.01 variation in the cost per kWh may represent approximately \$6.5 million per year in PRASA’s annual electricity cost.

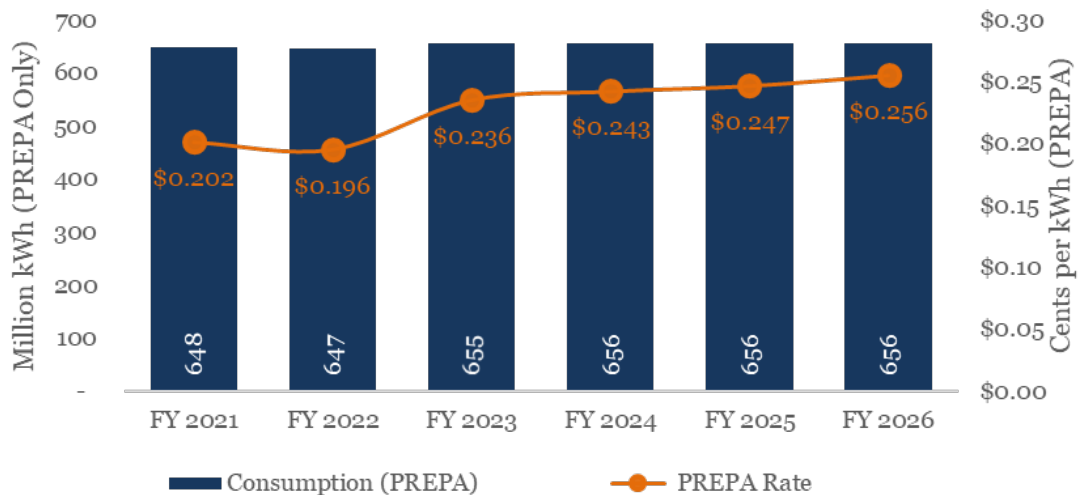
The expected cost of electricity purchased from PREPA is based on rates applicable to PRASA during the 2021 Fiscal Plan period, as included in the Commonwealth’s certified fiscal plan dated April 23, 2021. PRASA makes no representations with regards to such rates.

Electricity consumption is presented based on current level of usage, prior to the implementation of any additional savings measures.

PRASA has entered into PPA agreements that generate electricity at a cost of \$0.15 per kWh. Currently, PRASA consumes 11 million kWh produced through such PPAs, enough to cover ~2% of its total annual consumption.

Exhibit 2-7 below includes the projected electricity rates supplied by PREPA and PRASA’s projected annual consumption for the Fiscal Plan period.

EXHIBIT 2-7: PROJECTED ELECTRICITY COSTS AND CONSUMPTION (PRE-MEASURE)



2.3.3 Maintenance and Repair

Maintenance and repair costs are projected at almost \$60 million per year, representing PRASA’s third largest expense category within its operating budget. The maintenance cost includes only external contractor spend for both corrective and preventive maintenance and incremental costs of complying with the Sewer System Operation and Maintenance Program (“SSOMP”), as required by the USEPA. FY2022 was projected based on the specific requirements from operations and for subsequent years, PRASA has included an annual increase for this category based on the projected annual inflation rate (see Exhibit 2-6 above).

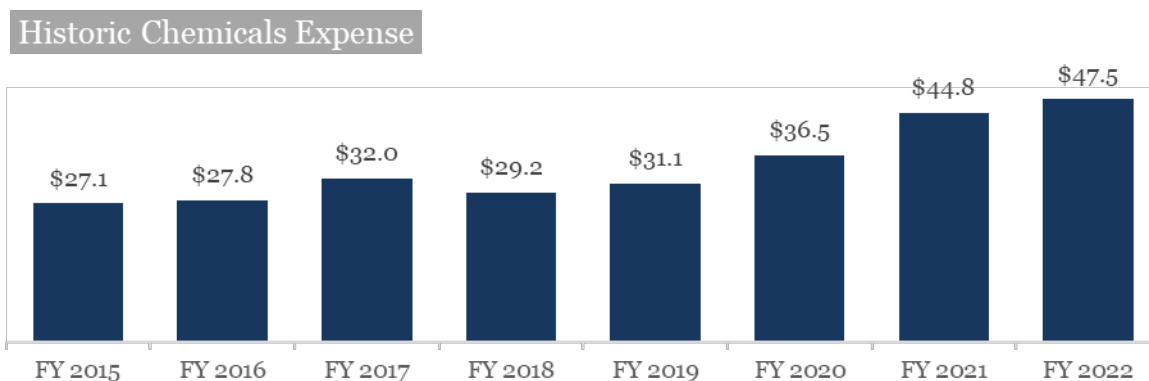
2.3.4 Chemicals

PRASA’s chemical expense includes costs for coagulants, flocculants, chlorine, and other chemicals required to properly treat water and wastewater. This expense is projected based on the requirements for treatment and disinfection at PRASA’s treatment plants and wells, which is necessary to comply with environmental standards and regulations set by federal and local agencies (e.g., EPA and DOH).

PRASA FY2022 projected chemical cost is based on actual identified needs as a base to project future costs. For subsequent years, the Authority has included an annual increase for this category based on the projected inflation rate (see Exhibit 2-6 above).

PRASA’s chemical spend has been on a steady rise since 2015, with an exception in 2018, mainly driven by increased chemical consumption to ensure compliance with environmental and health standards. Despite PRASA’s steady improvement with water quality standards, costs have nearly doubled in the span of 6 years. Exhibit 2-8 below includes PRASA’s historical chemicals spend since FY2015 (FY2022 is a projection).

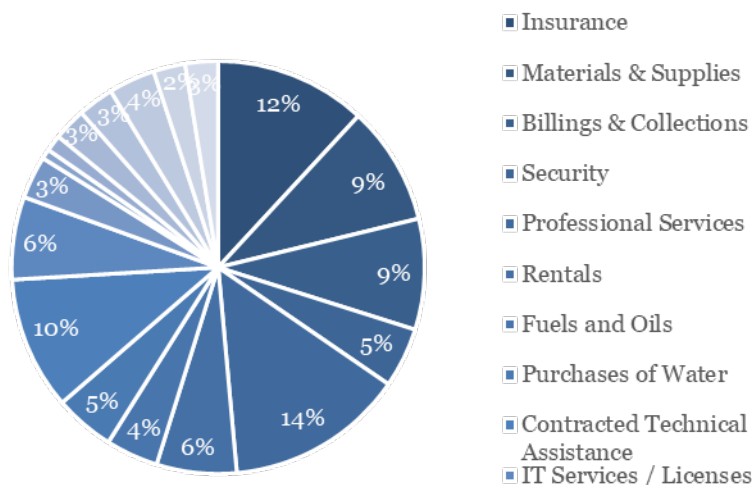
EXHIBIT 2-8: HISTORIC CHEMICALS EXPENSE (PRE-MEASURE)



2.3.5 Other Expenses

This expense category includes all other Operating Expenses, at around 24% of the total operating budget, not covered in the prior categories and are increased at the projected inflation rate (see Exhibit 2-6 above). Exhibit 2-9 included below presents the breakdown of the Other Expenses category.

EXHIBIT 2-9: OTHER EXPENSES BREAKDOWN (FY2021)



2.3.6 Summary of Projected Pre-Measures Expenses

Total operating expenses during the 2021 Fiscal Plan projected period are summarized in Table 2-3.

TABLE 2-3: PRE-MEASURES PROJECTED EXPENSES (IN \$ MILLIONS)

In \$ Millions	FY2021	FY2022	FY2023	FY2024	FY2025	FY2026	FY21/26
Payroll and Related	325.0	327.3	327.1	327.3	327.3	327.3	1,961.3
Electric Power	126.7	128.4	156.3	161.0	164.0	169.6	906.0
Maintenance & Repair	54.2	58.2	59.0	59.9	60.7	61.7	353.7
Chemicals	44.8	47.5	48.2	48.9	49.6	50.3	289.3
Other Expenses	176.3	183.2	181.6	184.2	186.9	189.8	1,101.9
FEMA Reimbursement	(28.0)	(20.0)	-	-	-	-	(48.0)
Capitalized Expenses	(6.9)	(26.8)	(28.6)	(28.9)	(29.2)	(29.5)	(149.9)
Operating Expenses, Net	692.1	697.9	743.6	752.4	759.3	769.1	4,414.3

2.4 Capital Improvement Program

One of PRASA’s main priorities is the successful and efficient execution of its CIP projects. In the aftermath of the 2017 hurricanes, a material portion of the CIP was designated for the reconstruction of all critical infrastructure required to achieve compliance with industry standards and protect public health and the environment. Additionally, the CIP also includes projects aimed at meeting mandatory compliance with the 2015 USEPA Consent Decree and the 2006 Drinking Water Settlement Agreement, renew and replace aging infrastructure, System optimization and simplification, and technological modernization.

Specific funding matters for CIP reconstruction projects as provided by the FEMA are discussed in greater detail under the 2021 Fiscal Plan’s Section 7.2 on FEMA’s Public Assistance and Hazard Mitigation programs. Given the large number of PRASA’s assets eligible for funding, FEMA

developed an Accelerated Award Strategy (“FAASt”) using the cost estimates of a sample of assets to extrapolate the results to the total population of assets. As a result of the FAASt, PRASA agreed to a total award of \$4.2 billion with a net obligation of \$3.66 billion of FEMA funds for the System’s recovery and \$717 million in projected cost share with CDBG-DR funds. This historical fund obligation required a detailed review of the CIP with the objective of maximizing the award by including new projects and consolidating others.

The Pre-Measures Financial Results do not include any expected bond issuance or external financing for the CIP. Instead, for the baseline projections, the CIP is expected to be financed exclusively through operating revenues and obligated FEMA funds.

2.4.1 CIP Phases and Components

Once a project has been developed to the point that it has a clear project charter, which formalizes its requirement and existence, the CIP construction projects are implemented through phases, as illustrated in Exhibit 2-10.

EXHIBIT 2-10: CIP PHASES & ACTIVITIES



Costs associated with the construction of facilities include the construction direct costs, planning, studies, engineering design, inspection, services during construction, owner-controlled insurance program, project management, administrative expenses, financing costs and other expenses related and inherent to construction. The CIP cost projections also include a contingency reserve for unexpected costs that could occur during the life cycle of the project. The contingency amount is based on industry guidelines, historical experience, and complexity of the project. If not spent after construction is completed, this reserve is released for other CIP projects.

To budget for the activities necessary to execute construction works, PRASA uses a 1.6 factor to determine total investment needed, which means that, on average, the total costs of a project will be the sum of its direct construction costs and an additional 60% for other project costs listed above. However, not all projects will require budgeting for an additional 60%, as each project is evaluated on its specific characteristics and complexities.

2.4.2 CIP Projects Classification and Prioritization

PRASA’s CIP projects are classified into the following categories:

- **FAASt or Reconstruction & Recovery Projects:** Projects to repair capital infrastructure impacted by the 2017 hurricanes to industry standards and based on a workplan submitted to FEMA on April 8, 2021;
- **Renewal and Replacement (R&R):** Projects aimed at renewing or replacing aging infrastructure at or near the end of its useful life (e.g., pipelines, pumps, motors, etc.);
- **Compliance (Mandatory/Non-mandatory):** Projects required by agreements—including USEPA Consent Decree, PRDOH Drinking Water Settlement Agreement,

civil actions, administrative orders, court orders, and other mandatory projects—or those that would be included in future agreements if not completed;

- **Quality:** Projects aimed at increasing the quality of the water and wastewater service provided to customers;
- **Meters⁴⁰:** Including the cost to replace meters to measure water consumption from PRASA’s clients as well as master meters to measure water production;
- **Fleet and IT:** Replacement of vehicles in PRASA’s fleet and IT infrastructure improvements;
- **Optimization and Emergencies:** Projects to increase efficiency and infrastructure emergencies and contingencies; and
- **Safety and Growth:** Projects to allow for System growth and increased security at PRASA’s facilities.

A clear and objective project prioritization process is key to identifying critical projects across the CIP portfolio and ensuring the most important projects are given priority. A well-defined scoring criterion for all capital projects is standard practice across water and wastewater utilities.

Currently, PRASA’s prioritization methodology is focused on mandatory compliance projects. PRASA, through its updated 10-year Master Plan (with an expected completion date outlined under Chapter 3) will develop a prioritization methodology for all projects in PRASA’s CIP. The implementation schedule of future long-term projects must then be subject to said prioritization system and funds availability.

2.4.3 FAASt or Reconstruction & Recovery Projects

Emergency and permanent works projects are those necessary to repair the infrastructure impacted by the 2017 hurricanes. FEMA defines emergency work as repairs and replacements that address immediate threats to public health and safety. Based on the FEMA obligation of funds PRASA can include under this category projects to restore damaged infrastructure to industry standards without regard to pre-disaster condition and to restore components not damaged by the disaster when necessary, to fully effectuate restoration of the disaster-damaged components and the function of the System to industry standards.

2.4.4 Renewal and Replacement

PRASA must rehabilitate and replace its assets to maintain and improve its current levels of infrastructure performance (i.e., service levels). Operating assets beyond their expected useful life runs the risk of excessive breaks and leaks, lower service quality, and higher operating costs associated with more frequent repair and maintenance.

Pipes (water and wastewater), facilities (plants, pump stations, reservoirs, intakes, tanks), and other assets require annual investments to ensure that desired service and performance levels are met. Utilities must also budget for replacement infrastructure prior to the end of its useful life.

⁴⁰ Metering projects and commercial water losses are jointly addressed under Chapter 3 revenue enhancement measures (Metering and Customer Service Optimization)

Nevertheless, without access to credit markets at reasonable rates, PRASA is required to set the amount of renewal and replacement projects below the desired level to one that is fundable through operating revenues.

2.4.5 Mandatory Projects

On September 15, 2015, the DOJ filed a consent decree (the “2015 USEPA Consent Decree”) executed among USEPA, PRASA and the Government. Negotiations leading to the execution of the 2015 USEPA Consent Decree were commenced by PRASA in order to mitigate the high CIP costs mandated by prior Consent Decrees. Despite being in material compliance with the CIP requirements set forth by current environmental agreements, PRASA began discussions with USEPA and DOJ, seeking to amend the 2015 USEPA Consent Decrees to realign the cost of its mandatory CIP projects with the Authority’s needs and financial state following the 2017 hurricanes, while maintaining compliance with environmental requirements and regulations.

The revisions to the 2015 USEPA Consent Decree include the following:

- Elimination of certain projects included in the 2017 USEPA Consent Decree deemed unnecessary or certified as completed
- Reduction of annual capital expenditure levels for mandated projects, based on an updated prioritization system (the “Prioritization System”)
- Completion of a series of scheduled high priority, mandatory projects, referred to as the “Base List”
- Revision and update of the Process Control System
- Flexibility on due dates for certain requirements

In addition, PRASA is currently in negotiations with the PRDOH to modify the existing 2006 Drinking Water Settlement Agreement. The modifications are expected to include: (i) an update of PRASA’s facilities; (ii) the removal of completed projects and/or requirements included in the prior agreement; (iii) the acceptance and the implementation of the Prioritization System and Base List in the 2015 USEPA Consent Decree; as expected to be amended; and (iv) the inclusion of scheduled mandatory projects under the Base List.

Through the application of the Prioritization System, PRASA has established the relative priority of mandatory CIP projects required under the 2015 USEPA Consent Decree and the 2006 Drinking Water Settlement Agreement (excluding “Base List” projects), thus objectively allocating the Authority’s limited financial resources. This prioritization system, still under evaluation by PRDOH, can be found in Exhibit 2-11.

EXHIBIT 2-11: PRASA SCORING CRITERIA FOR MANDATORY PROJECTS

Weight	Category	Description
40%	Regulatory Compliance	<ul style="list-style-type: none"> Effect that a given project would have on compliance-related issues Scores assigned based on the historical compliance records for each facility
30%	Quality of Service and Reliability	<ul style="list-style-type: none"> Ability of a project to address service areas with existing water deficits Scores assigned based on average day demand and/or maximum day demand deficits
20%	Operational Efficiency Improvements	<ul style="list-style-type: none"> Effect that a given project will have on operational system efficiency Scores assigned based on the anticipated operational savings incurred or the need to replace elements of the water system before their useful life expires
10%	Population Impacted by a project	<ul style="list-style-type: none"> Effect that a project will positively impact the population Scores assigned based on total # of expected customers to be impacted by project

2.4.6 Project Execution and Metrics

The work needed to complete projects from their planning phase to completion requires both internal and external personnel.

Following an RFQ/RFP process, PRASA selected four firms and already contracted with three to serve as Project Management Consortia (“PMCs”) and assist the Authority in the execution of its CIP. The selected firms currently under contract are Black & Veatch Puerto Rico PSC, CH Caribe Engineers PSC and Arcadis Caribe PSC. The other selected firm is CSA - WSP JV, which currently under the contracting process.

To track its CIP execution, PRASA establishes project metrics and monitors compliance and execution through a CIP tracking tool. Moreover, PRASA implemented a new module in SAP (its enterprise operating system) to enable the review and update of its current tracking tool to enhance compliance with expected execution schedules and costs.

Typically, the construction phase includes the highest potential for deviations in cost and time. To maintain control of this phase, PRASA keeps monthly track of two industry standard KPIs:

- **Cost Performance Index (CPI):** Measures the cost efficiency of resources committed to the project, evaluating whether the project will be completed on budget.
- **Schedule Performance Index (SPI):** Measures the relationship between the executed work versus the planned work, assessing whether the project will be completed on time.

The established metrics allows for high level planning and management of the CIP, while the tracking tool provides a detailed tracking of CIP compliance against what was planned. The Authority is also evaluating the potential implementation of a Project Management Information System (PMIS) to better monitor and control the progress of the projects.

2.4.7 CIP Pre-Measures Projections

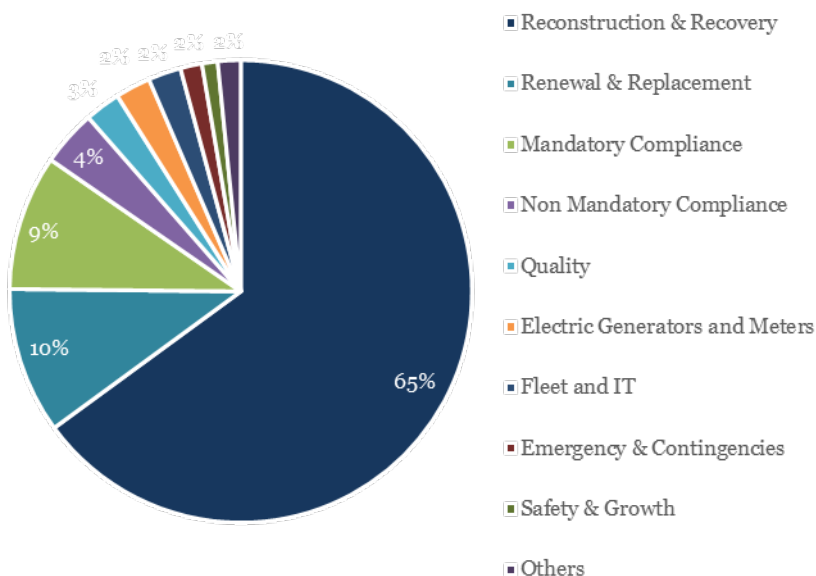
The projected CIP spending during the 2021 Fiscal Plan period is included in Table 2-4.

TABLE 2-4: PROJECTED CIP (IN \$ MILLIONS)

In \$ Millions	FY2021	FY2022	FY2023	FY2024	FY2025	FY2026	FY21/26
Reconstruction & Recovery	24.3	204.7	325.5	325.0	356.3	626.0	1,861.8
Renewal & Replacement	37.4	92.6	43.7	42.0	39.1	37.9	292.7
Mandatory Compliance	18.0	68.2	93.4	54.5	18.8	18.7	271.7
Non Mandatory Compliance	5.5	37.4	39.1	19.4	5.9	4.4	111.7
Quality	6.5	26.8	24.8	9.9	1.9	1.4	71.4
Electric Generators and Meters	17.4	20.6	13.8	9.9	4.6	4.2	70.5
Fleet and IT	5.9	29.2	11.7	6.7	6.3	6.1	65.9
Emergency & Contingencies	-	10.0	9.7	8.4	7.8	7.6	43.5
Safety & Growth	3.0	5.7	9.5	7.6	5.1	0.6	31.5
Others	7.3	20.4	15.4	0.7	1.1	0.7	45.7
Total	125.3	515.8	586.5	484.1	446.9	707.6	2,866.3

Exhibit 2-12 illustrates that almost 90% of the CIP is related to Reconstruction & Recovery projects, as well as Compliance and Renewal & Replacement projects.

EXHIBIT 2-12: CIP BREAKDOWN BY CATEGORY (FY2021-FY2026)



The pre-measures CIP is assumed to be fully funded by PRASA’s operating revenues in addition to insurance, FEMA and CDBG-DR proceeds.⁴¹

A summary of the projected sources for the CIP spending over the 2021 Fiscal Plan period is included in Table 2-5 below:

TABLE 2-5: REQUIRED SOURCES FOR CIP (IN \$ MILLIONS)

<i>In \$ Millions</i>	FY2021	FY2022	FY2023	FY2024	FY2025	FY2026	FY21/26
Beginning Cash Balance Use	20.0	119.1	72.4	39.1	15.1	3.5	269.2
FEMA/CDBG Appropriations	24.3	204.7	325.5	325.0	356.3	626.0	1,861.8
Operating Revenues	81.0	192.1	188.7	120.0	75.5	78.1	735.4
Total	125.3	515.8	586.5	484.1	446.9	707.6	2,866.3

2.5 Debt Service and Other Deposits Required Under the Master Agreement of Trust (MAT)

Debt service costs included in the Pre-Measures financial results reflects PRASA’s current debt structure and contractual obligations, incorporating the benefits from the Federal Debt modification completed in July 2019 and the refunding of a substantial portion of the 2008 Senior Bonds completed in December 2020, as further detailed in Chapter 3.

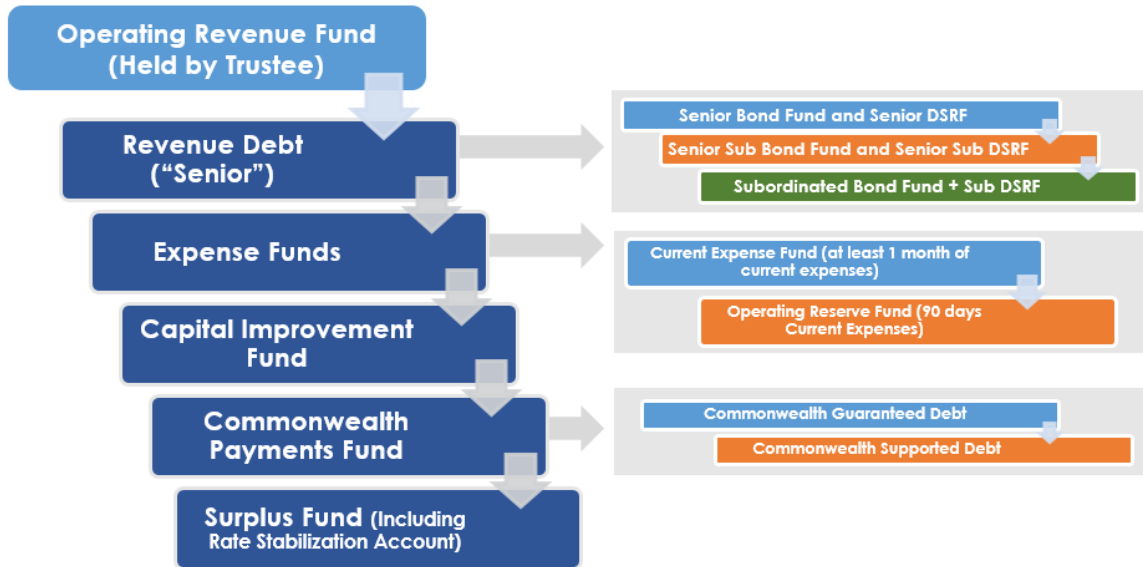
2.5.1 MAT Payment Priorities

The MAT, executed in 2008 and as subsequently amended, establishes the way that PRASA’s revenues are to be applied to the payment of debts and the lawful priorities for payment thereof.

The payment priority of the different levels of debt service and other required deposits under the MAT is presented in Exhibit 2-13.

⁴¹ Assumed the obligation of FEMA funds for 90% of the total Reconstruction and Recovery projects and CDBG-DR Program funds for the cost share portion of 10%

EXHIBIT 2-13: MAT PAYMENT PRIORITIES⁴²



The payment priority is established by Article V of the MAT, outlined below:

- **Revenue or Senior Debt:** Currently, all of PRASA’s debt, except for the CSO, consists of Senior Debt—including Other System Indebtedness held by the Federal Lenders—which is paid from operating revenues prior to the payment of current expenses.
 - Senior debt service includes payments related to the 2008 Senior Bonds, 2012 Senior Bonds, 2020 Senior Bonds and the Federal Debt.
 - The 2008 Senior Bonds are also entitled to the benefits of a Debt Service Reserve Fund of \$90.6 million which is currently funded in full and may be available for release on or before July 1, 2024, subject to certain conditions. The 2012, 2020 Senior Bonds and the Federal Debt do not have a debt service reserve fund.
- **Expense Funds:** Accounts for two funds to cover operating expenses:
 - **Current Expense Fund:** On a monthly basis, after the payment of debt service, the Trustee shall deposit in the Current Expense Fund, at PRASA’s request, at least one month and up to three months (90 days) worth of current expense needs.
 - **Operating Reserve Fund:** PRASA is required to maintain an Operating Reserve Fund equal to three months of current expenses. Currently, the Authority is in the process of cash funding the reserve during a five-year period (FY2017-2021),

⁴² Bondholders consented to change of the revenue pledge from a gross revenue pledge to a net revenue pledge, to become effective when the remaining senior indebtedness holders, including federal lenders, consent to the change.

depositing monthly 1/60th of the requirement.⁴³ The Operating Reserve Fund is expected to be fully funded by the end of Fiscal Year 2021.

- **Capital Improvement Fund:** The amount to be deposited in the Capital Improvement Fund is defined in PRASA’s budget and is used to pay for the portion of CIP funded from Authority’s revenues. Under the Pre-Measures Financial Projections, the total amount required for the CIP (net of FEMA and CDBG-DR proceeds) is expected to be funded solely by PRASA’s cash balances and operating revenues. The benefit of expected additional funds for the CIP from SRF and USDA Programs are included as in Chapter 3 (New financing for CIP).
- **Commonwealth Payments Fund:** This fund includes monies available for two additional debt categories. Failure to make the payments or required deposits to the Commonwealth Payments Fund is not an event of default under the MAT.
 - **Commonwealth Guaranteed Indebtedness (CGI):** Includes debt issued by PRASA that is guaranteed by the Government. After the modification of the Federal Debt and the issuance of the 2020 Senior Bonds that refunded all of the 2008 Revenue Refunding Bonds, there is no outstanding debt under this category.
 - **Commonwealth Supported Obligations (CSO):** Includes a portion of the 2011 Series B Bonds issued by PFC in December 2011 to refinance certain outstanding debt related to the construction cost of the North Coast SuperAqueduct. The CSO debt is not a general obligation of PRASA and is payable solely from legislative appropriations. PRASA has been unable to make such payments in recent years because no funds have been appropriated by the Government for such purposes. As stipulated in the MAT, if PRASA is unable to make payments on the PFC debt, the obligation is not cumulative and therefore does not carry forward to future periods.
- **Surplus Fund:** After making all required deposits to the funds set forth above and any other fund required under the terms of the MAT, any excess cash can be deposited into the Surplus Fund to be used at the discretion of PRASA. As part of the Surplus Fund, a Rate Stabilization Fund (RSA) can be created to cover any operating needs in the future and minimize the need for rate increases.

In connection with the issuance of the 2020 Senior Bonds, as further explained in Chapter 3, PRASA proposed certain amendments to the MAT to, among other things, change the current order of payments, under which revenues are applied to pay debt service on outstanding Senior Debt prior to being applied to pay current expenses (commonly known as a “gross revenue pledge”) to a payment priority that would have revenues pay current expenses prior to being applied to pay debt service on Senior Debt (commonly known as a “net revenue pledge”). The new bondholders have consented by their purchase of the 2020 Senior Bonds to the terms and execution by the Trustee of the Second Amended and Restated MAT incorporating such changes. The amendments will become effective upon receipt of written consent of all the holders of Senior Debt, including the Federal Lenders.

⁴³ Stipulated in the Sixth Supplemental Agreement of Trust

2.5.2 Contractual Debt Service

PRASA's debt as of December 31, 2020, excluding CSO debt, is presented in Table 2-6.

TABLE 2-6: OUTSTANDING LONG-TERM DEBT AS OF DECEMBER 31, 2020 (IN \$ THOUSANDS)⁴⁴

(in \$000s)	Balance as of December 31, 2020	Projected Debt Service FY2022
<i>Senior Bonds</i>		
2008 Series A Bonds (CAB)	87,215	25,243
2012 Series A Bonds	1,695,055	132,132
2012 Series B Bonds	153,585	8,054
2020 Series A Bonds	1,351,300	78,118
2020 Series B Bonds	18,775	1,767
	3,305,930	245,314
<i>Other Senior Indebtedness</i>		
2019 State Revolving Fund Loans	585,677	10,000
2020 State Revolving Fund Loans ⁴⁵	10,970	-
2019 Rural Development Loans	400,469	10,000
	997,116	20,000
Total Senior Debt	\$ 4,303,046	\$ 265,314

The Authority's Pre-Measure projected debt service during the Fiscal Plan period is included in Table 2-7:

⁴⁴ Excludes debt issued by PFC (included in PRASA's Financial Statements balance sheet), which is payable from legislative appropriations. The PFC debt is subject to ongoing proceedings to adjust the debts of the Commonwealth under Title III of PROMESA.

⁴⁵ Debt service on new SRF loans is included in the Post-Measures Financial Projections (Chapter 3), as a result of New Financing for CIP measure

TABLE 2-7: PROJECTED DEBT SERVICE (IN \$ MILLIONS)

<i>In \$ Millions</i>	FY2021	FY2022	FY2023	FY2024	FY2025	FY2026	FY21/26
Senior Debt	256.6	265.3	265.7	270.3	267.4	267.4	1,592.7
Commonwealth Payment Fund	7.2	-	-	-	-	-	7.2
Projected Debt Service	263.7	265.3	265.7	270.3	267.4	267.4	1,599.9

2.5.3 Other Deposits Required by the MAT

Deposits under the baseline scenario that are projected to fund a portion of PRASA’s CIP and the Operating Reserve Fund required under the MAT (varying based on the projected level of operating expenses) are included in Table 2-8:

TABLE 2-8: OTHER DEPOSITS REQUIRED BY THE MAT (IN \$ MILLIONS)

<i>In \$ Millions</i>	FY2021	FY2022	FY2023	FY2024	FY2025	FY2026	FY21/26
Operating Reserve Fund	36.4	2.1	6.4	2.2	1.7	2.4	51.3
Capital Improvement Fund	81.0	192.1	188.7	120.0	75.5	78.1	735.4
Total Other Deposits	117.4	194.2	195.1	122.2	77.3	80.5	786.7

Projected deposits to the Operating Reserve Fund assume that PRASA does not make any withdrawals throughout the forecasted period. During FY2021, PRASA will comply with the full funding of the Operating Reserve Fund requirements.

Deposits to the Capital Improvement Fund reflect the amount required to be deposited in such fund from operating revenues, after beginning balances available for the CIP and projected federal funds sources for Reconstruction and Recovery projects are discounted from the CIP needs.

2.6 Pre-Measures Financial Projections Summary Pre-Measures Financial Projections.

Table 2-9 describes the major assumptions discussed above and used for the development of the Pre-Measures Financial Projections.

TABLE 2-9: SUMMARY OF THE PRE-MEASURES FINANCIAL PROJECTIONS

Assumptions for Revenues and Expenses Projections			Assumptions for CIP and Debt Service Projections		
Revenues	Average Annual Billing Reduction (Residential) FY2022/FY2026	-0.5%	CIP	Average Annual CIP (\$M)	\$489
	Average Collections Rate (Residential)	96%			
	Average Annual Rate Increase FY2023/2026 (Residential)	2.0%	CIP Funding	Additional Annual Federal Funds	FEMA and CDBG-DR
Expenses	Headcount by FY 2022	4,700			
	Pension Cost	Pay Go			

Average Electricity Cost (PREPA) per kWh FY2022/FY2026 (cents)	\$21.3	Debt Service	Debt Service Payments	Contractual debt as reprogrammed and refunded
Average Expenses Growth (inflation) FY2022/FY2026	1.4%			
Capitalization Rate FY2022/FY2026	3.7%			

Table 2-10 included below presents a summary of the Pre-Measures Financial Projections for FY2021-FY2026. A total of \$1,428.7 million of funding or financing is needed for the 6-year period, which is mostly to be used to finance the Authority’s CIP, assuming no external funding or additional federal funds beyond the forecast funds for Recovery and Reconstruction projects.

TABLE 2-10: PRE-MEASURES FINANCIAL PROJECTIONS (IN \$ MILLIONS)

<i>In \$ Millions</i>	FY2021	FY2022	FY2023	FY2024	FY2025	FY2026	FY21/26
Authority Revenues	927.2	898.7	893.0	888.5	884.1	880.9	5,372.3
Senior Debt Service	(256.6)	(265.3)	(265.7)	(270.3)	(267.4)	(267.4)	(1,592.7)
Net Operating Expenses	(692.1)	(697.9)	(743.6)	(752.4)	(759.3)	(769.1)	(4,414.3)
Operating Reserve Fund	(36.4)	(2.1)	(6.4)	(2.2)	(1.7)	(2.4)	(51.3)
Capital Improvement Fund	(81.0)	(192.1)	(188.7)	(120.0)	(75.5)	(78.1)	(735.4)
Commonwealth Payment Fund	(7.2)	0.0	0.0	0.0	0.0	0.0	(7.2)
Baseline Financial Result	(146.0)	(258.7)	(311.5)	(256.4)	(219.9)	(236.2)	(1,428.7)

PRASA, in collaboration with the Oversight Board, has identified several measures described in the following Chapter, to eliminate the projected financial need and allow for PRASA to be financially self-sustainable.

3 Fiscal Plan Measures and Post-Measures Financial Projections

Eliminating structural deficits in each fiscal year and achieving fiscal responsibility are PRASA's main financial objectives to ensure it has the resources to provide safe, reliable, and affordable water and wastewater services to the people of Puerto Rico. To accomplish these objectives, PRASA has completed the following milestones: (i) implementation of moderate, annual rate increases since 2018; (ii) Federal Debt reprogramming in 2019; (iii) debt service reduction through the refunding of 2008 Senior Bonds in 2020; and (iv) securing \$3.7 billion in FEMA funds in 2021 for System recovery and reconstruction after the 2017 hurricanes. In turn, this improved financial state has positioned the Authority to invest additional resources to address deficiencies that currently threaten its System's safety, reliability, and affordability.

Despite its financial improvements, PRASA still faces a host of issues that undermine its operational sustainability. Previous efforts have centered on improving its fiscal standing through rate increases, debt restructuring, and improved collections efforts while offering little in operational improvements. Therefore, in addition to its pursuit of measures that promote fiscal sustainability, PRASA must also focus on improvements and investments to ensure delivery of essential public services, including (i) addressing its operational deficiencies – such as NRW, asset management, and high operating costs – and (ii) investing in critical upgrades to its aging and inefficient System through the use of federal funds.

If persistent operational and capital shortcomings are left unaddressed, underperformance will continue to impede PRASA to achieve fiscal responsibility. Indeed, without further changes, PRASA's finances and operations are not sustainable, which places unnecessary burden on the well-being of the Puerto Rico's population and economy, both of which depend on reliable quality water supply and wastewater treatment.

This Chapter summarizes a set of new or recently implemented measures across categories such as revenue enhancement, cost savings, debt service reduction and new low-cost funding for infrastructure projects. In addition to measures that will improve PRASA's financial position, several enabling measures have been identified that will help to improve operational performance but may not result in direct or immediate financial improvements.

If successfully implemented and maintained, the measures outlined herein would further improve PRASA's financial situation to minimize future rate adjustments while improving operational performance and capital delivery.

3.1 Recently Implemented Measures

The measures presented in this Section are those that have been implemented since FY2018 and have had a material qualitative or quantitative impact on the Authority:

1. **Rate adjustments:** implemented regularly scheduled rate increases ranging from 2.5% to 4.5% between FY2018 and FY2021 for all customer segments.
2. **Government account collections:** collected past due government receivables and improved government collections.

3. **Recovery of disconnection cost:** instituted a \$15 disconnection fee that is currently suspended due to COVID-19 pandemic emergency measures (Act 39-2020).⁴⁶
4. **Leaks adjustment policy change:** Customer's bills adjustments for hidden leaks are limited to the wastewater portion of the bill.
5. **Pre-retirement program:** reduced payroll costs by incentivizing early retirement for eligible employees.
6. **Electricity Expense Reduction:** reduced energy costs through efficiency measures and installation of renewable distributed generation ("DG").
7. **Federal Debt modification:** consolidated and restructured SRF and RD loans as senior debt and with more favorable repayment terms for PRASA.
8. **Debt Refunding:** refinancing of \$1.4 billion in 2008 Senior Bonds resulting in significant debt service savings without extending the debt maturity term.
9. **GDB/DRA Loan cancellation:** In November 2020, PRASA fully resolved an outstanding loan with the GDB/DRA, which had a principal balance of approximately \$57.5 million in FY2020, the amount was settled for \$20.5 million.

These measures, excluding GDB/DRA loan cancellation, which was not projected in prior fiscal plans, have had \$598 million in positive financial impact from FY2018-FY2021. Table 3-1 summarizes the benefits of the implemented measures.

⁴⁶ Recently – early May 2021 – Puerto Rico's Senate presented project 329 with the intention of allowing payment plans for delinquent accounts.

TABLE 3-1: FINANCIAL RESULTS OF IMPLEMENTED MEASURES (FY2018-FY2021, IN \$ MILLIONS)

<i>In \$' Millions</i>	FY 2018	FY 2019	FY 2020	FY 2021 (Projected)	FY 2018 to 2021
Revenue Enhancement Initiatives					
Rate Adjustments	13.3	60.3	79.6	98.7	251.9
Government Account Collections	55.9	72.6	5.9	1.0	135.4
Disconnection Cost Recovery	-	1.8	0.7	-	2.5
Leaks Adjustment Policy	-	1.1	2.0	1.6	4.7
Cost Saving Initiatives					
Pre-Retirement Program	-	5.9	7.4	7.8	21.1
Electricity (PPAs in place)	0.3	0.4	0.5	0.3	1.6
Debt Service Reduction					
Federal Debt Restructuring	55.6	32.4	39.7	40.0	167.7
Debt Refunding (2020 Bonds)	-	-	-	13.0	13.0
New Financing					
SRF New Loans (received)	-	-	27.2	11.0	38.2
Total	125.1	174.5	163.0	173.4	597.9

The projected benefits from the implemented measures shown above have resulted in real, measurable economic benefits. However, to ensure consistency with previous fiscal plans, all implemented and ongoing measures and their associated benefits from FY21 to FY2026, except for debt service reduction measures, are shown separately in the Post-Measure Financial Projections presented in this chapter.

In addition, PRASA failed to partially or fully implement the following measures identified in the 2020 Certified Fiscal Plan:

- Metering optimization
- Chemical expense reduction
- Pressure management and leak detection initiatives within the physical water loss reduction measure

Therefore, these measures have been reintroduced in this 2021 Fiscal Plan and will be discussed in the new measures section.

3.1.1 Implemented Revenue Enhancing Measures

PRASA has implemented a series of measures to increase its revenues while attempting to minimize negative impacts on service affordability.

3.1.1.1 Rate adjustments

In 2017, the Oversight Board required PRASA to implement moderate, but consistent multi-year rate adjustments to ensure its costs are fully covered by service revenues. The increase was meant to address years of failure to perform an industry standard practice of raising rates to cover increasing costs.

Rate adjustments collected (FY2018 through FY2021)

\$252 million

PRASA’s current rate structure, set by its Governing Board, provides for an annual rate adjustment of up to 4.5% and not more than 25% cumulatively through the application of an “Annual Adjustment Coefficient.”⁴⁷

PRASA has an approved moderate rate adjustment schedule for five years between FY2018-FY2022, summarized in Table 3-2. The first four scheduled rate adjustments were implemented as planned, on January 1, 2018, July 1, 2018, July 1, 2019 and July 1, 2020. The next scheduled rate adjustment is expected to be implemented on July 1, 2021. For residential customers with low to average water consumption, this last adjustment in July 2021 will represent an approximate increase of ~\$1 or less in their monthly bills⁴⁸.

TABLE 3-2: IMPLEMENTED & PROJECTED RATE INCREASES

Type of Client	Jan 1, 2018 (FY2018)	July 1, 2018 (FY2019)	July 1, 2019 (FY2020)	July 1, 2020 (FY2021)	July 1, 2021 (FY2022)
Residential	2.5%	2.5%	2.5%	2.5%	2.5%
Commercial	2.8%	2.8%	2.8%	2.8%	2.8%
Industrial	3.5%	3.5%	3.5%	3.5%	3.5%
Government	4.5%	4.5%	4.5%	4.5%	4.5%

Additional rate adjustments after FY2022 are discussed in Section 3.2.1.1.

⁴⁷ PRASA’s rate structure was adopted through the public hearing process of Act 21 and approved by the Governing Board pursuant to Resolution No. 2794 on July 3, 2013 and as amended by Resolution No. 2825, approved on December 18, 2013.

⁴⁸ 46% of residential customers consume ≤10m³ (low consumption); average water use is estimated at ~14m³

3.1.1.2 Government Account Collections Improvement

The Authority has four different government client categories: (i) Central Government agencies, paid from the General Fund; (ii) public corporations, generally paid from their own revenues; (iii) municipalities; and (iv) Federal agencies. During the last several years, PRASA has worked jointly with the Government to reconcile balances of accounts receivables and speed up the collection process. As a result of these efforts, PRASA's cumulative collections rate for government accounts from FY2018 to FY2020 averaged about 94%, including high collection periods due to recovery of past due amounts, with total recovered amounts of \$134.4M over that time period.⁴⁹ The 2021 Fiscal Plan projects any amount above the 93% collections baseline assumption as a separate measure which gradually increases to 96% by FY26.

Government accounts
recovered receivables
(FY2018 through FY2021)

\$135 million

As of April 30, 2021, the year-to-date collection rate for government accounts was about 113% which also includes a portion of collections on outstanding accounts receivables from prior fiscal years. During FY2021, PRASA experienced a significant recovery of past due amounts in connection with Central Government agencies, public corporations, and Federal agencies. However, municipalities continue to lag in account payable resolution. While the outstanding balances for municipalities have been reduced by ~20% over the last two years, total accounts receivable for municipalities add up to \$83 million as of April 30, 2021.

3.1.1.3 Disconnection Cost Recovery

To deter delinquency among its customer base and recover the cost related to service disconnections, PRASA implemented a \$15 disconnection fee in January 2018 to recover costs associated with disconnecting customers for non-payment.

Disconnection Fee Costs
billed (FY2018 through
FY2021)

\$2.5 million

Since its implementation and prior to COVID-19 emergency measures, the revenue generated from the disconnection fee was approximately \$100,000 per month. This benefit is expected to decrease over time as customer behavior changes in response to the introduction of the fee. During FY2020 and FY2021 charges related to the disconnection fees were affected by Act 39-2020 which does not allow PRASA to disconnect the service during the pandemic period and for two subsequent billing cycles following the end of the emergency period declared by the Governor. Act 39-2020 is still in effect.

⁴⁹ High collection rate periods were partly driven by collection of accounts receivables in arrears.

3.1.1.4 Leaks Adjustment Policy Change⁵⁰

PRASA revised its Customer Service regulations in 2018 to adjust its policy for hidden leaks adjustments.⁵¹ When a hidden leak is detected, an adjustment is no longer applied to the water portion of customers' bills as the water has already been consumed or lost and PRASA has already incurred its production cost. Since its implementation, the hidden leaks adjustment measure has saved the Authority almost \$5 million when compared to FY2017 adjustments.

Hidden Leaks
Adjustments (FY2018
through FY2021)

\$4.7 million

3.1.2 Implemented Cost Saving Measures

PRASA has implemented several cost-reduction measures, including various measures focused on the two largest expense categories: payroll and electricity.

3.1.2.1 Pre-retirement Program

As a result of the fiscal crisis, the Government created a Voluntary Pre-Retirement Program in FY2016.⁵² The program provides incentives to certain eligible government employees to voluntarily retire early from service.⁵³ The program was implemented to reduce the workforce progressively and voluntarily, allowing employees to retire with an orderly transition process. The vacant positions resulting from the retirement program must be closed unless otherwise determined by the OMB.

Pre-Retirement Program
Savings (FY2018 through
FY2021)

\$21.1 million

Over 350 PRASA employees have retired under the program, generating estimated savings for PRASA of \$21.1 million through June 30, 2021. Accordingly, PRASA operates with a base of approximately 4,300 active working employees (refer to Organization Optimization measure for further detail).

⁵⁰ Customer's bills adjustments for hidden leaks will be limited to the wastewater portion of the bill

⁵¹ Regulation 8901 for the use of water and wastewater services.

⁵² Enacted through Act 211-2015 on December 8, 2015.

⁵³ Incentives include: 60% payment of average salary, payout of unused vacation and sick days (as per Act 66-2014) and maintaining their health insurance coverage for a term of two years. These incentives are applicable to pre-retired employees and payable by PRASA until eligible employee meets the requirement for full retirement under ERS's coverage.

3.1.2.2 Electricity

PRASA has implemented an Energy Management Program to help manage and reduce its electricity expense. PRASA implemented internal measures at a regional level to reduce electricity consumption, and supply side projects through Power Purchase Agreements (“PPAs”) to reduce overall electricity cost:

Electricity Expense
Reduction from PPAs
(FY2018 through FY2021)

\$1.6 million

- **Regional Measures:** PRASA has implemented a set of regional level commitments to execute non-capital-intensive energy conservation measures throughout its facilities. Since FY2013, PRASA has reduced its electricity consumption by over 13%, from over 740 million kWh to under 640 million kWh through regional measures such as, peak shavings, facility consolidations, minor repairs, and installations, among others.
- **PPAs:** PRASA operates 10 facilities using solar energy, consuming approximately 11.3 million kWh per year at a \$0.15 per kWh blended rate, which is less than rates charged by PREPA. Annual savings from these PPAs vary based on PREPA rates. Facilities currently under PPAs along with their associated average annual solar energy production are shown in Table 3-3.

TABLE 3-3: FACILITIES WITH SOLAR ENERGY

Facility	Million kWh
Yunque WTP	3.43
Arecibo WTP	1.71
Canóvanas WWTP	1.71
Guaynabo WTP	0.86
Aguada WWTP	0.86
Humacao WWTP	0.86
Cayey WWTP	0.86
Culebra WWTP	0.49
Vieques WWTP	0.33
Arcadia WPS	0.19
Total kWh	11.30

Additional reductions in electricity expense as a result of future PPAs and ongoing regional measures to reduce electric consumption are included in Section 3.2.2.6: *Electricity Expense Reduction*.

3.1.3 Debt Service Reduction

PRASA has implemented two debt service reduction measures to date: Federal Debt modification and refunding a portion of its outstanding Senior Debt.

The Authority is not assuming any payment related to PFC debt during the Fiscal Plan period. The PFC debt is subject to ongoing proceedings to adjust the debts of the Commonwealth under Title III of PROMESA. The Authority has no legal obligation to pay the PFC debt because such debt is payable solely from legislative appropriations received from the Government. As provided in the MAT, if the Authority is unable to make this payment, the obligation is not cumulative and therefore does not carry forward to future periods; failure to make the payments or deposits related to this debt is not an event of default under the MAT.

3.1.3.1 Federal Debt Modification

Historically, the Authority has received federal funds for its CIP through loans from the Clean Water State Revolving Fund Programs (“CWSRF”) and the Drinking Water State Revolving Fund Programs (“DWSRF”)—collectively known as the “SRFs”—and bonds or loans from the USDA Rural Development (“USDA-RD”) Program.

Debt service relief
(FY2018 through FY2021)

\$168 million

On June 30, 2016, the Authority executed a Forbearance Agreement with the DOH and EQB (administrators of the DWSRF and CWSRF, respectively). PRASA was also granted a short-term forbearance period under the USDA RD loans. The original Forbearance Agreements were subsequently extended on several occasions, allowing for the deferral of payments due from July 2016 through July 2019, subject to certain conditions and partial payments.

On July 26, 2019, the Authority and AAFAF consummated definitive agreements (the “Agreements”) that modified the Authority’s debt obligations under the SRF and RD loans, which totaled approximately \$1 billion in Federal Debt. The Agreements were approved by the Oversight Board pursuant to Section 207 of PROMESA on July 3, 2019. The benefits of the Agreements to PRASA and the Government include (i) the reduction of interest rates and extension of the amortization period, (ii) the termination of existing Commonwealth guarantees over the Federal Debt, thus reducing overall Government contingent liabilities by approximately \$1 billion and (iii) access to new loans from the SRF and USDA RD programs, including \$26 million granted under the Agreements for the SRF program. The restructured Federal Debt was designated as “Other System Indebtedness” in parity with other senior debt under PRASA’s MAT.

A summary of the modification to the Federal Debt terms is summarized in Exhibit 3-1

EXHIBIT 3-1: MODIFICATIONS TO FEDERAL DEBT TERMS

	Prior to debt modification	After debt modification	Projected Impact (FY21-FY31)
SRF			
Balance	\$581M	\$596M (including new loans)	\$260M
Amortization term	20 years	30 years	
Interest rate	2%	0% for years 1-10/ 1% thereafter	
Annual debt service	\$36M	\$10M for years 1-10/ \$27M thereafter	
RD			
Balance (incl. accrued interests)	\$392M	\$392M	\$120M
Amortization term	40 years	40 years	
Interest rate	4% (average)	2%	
Annual debt service	\$24M	\$10M for years 1-10/ \$17M thereafter	

The debt service relief from FY2018-FY2021 is estimated at \$168 million. The Federal Debt modification resulted in substantial benefits for PRASA, the Government and the people of Puerto Rico, including:

- Debt service relief to the Authority of approximately \$380 million between FY21 and FY31
- Renewed access to sources of funds under Federal programs for infrastructure projects
- Adequate protection of the interests of the Federal agencies
- Accrued interest forgiveness under SRF loans with savings of approximately \$30 million

3.1.3.2 Senior Debt Refunding (2020 Refunding)

On December 17, 2020, the Authority issued its 2020 Series A and Series B Revenue Refunding Bonds (the “2020 Senior Bonds”) in the amount of \$1,351.3 million and \$18.8 million, respectively, for the purpose of refunding a portion of its outstanding senior bonds. The proceeds of the 2020 Senior Bonds were used to (i) refinance the then outstanding 2008 Revenue Bonds Series A and Series B (Senior Lien) issued under the MAT, excluding the non-callable convertible capital appreciation bonds with a balance of \$87.2 million, (ii) refinance all of the Authority’s currently outstanding Revenue Refunding Bonds, 2008 Series A and 2008 Series B, each guaranteed by the Commonwealth of Puerto Rico, and (iii) pay costs of issuance of the 2020 Senior Bonds. The par amount of the refunded bonds amounted to \$1,427.6 million (the 2020 Senior Bonds were issued at a premium to par).

2020 Refunding debt service savings (FY2018 through FY2021)

\$13 million

The 2020 Senior Bonds bear coupons at rates ranging from 4% to 5% per annum with yields at the time of issuance ranging from 2.50% to 4.50% and maturity dates ranging from July 1, 2021 to July 1, 2047. The issuance of the 2020 Senior Bonds to refund a portion of the Authority’s senior bonds resulted in a reduction in total debt service payments over the next 27 years of approximately \$348.2 million or approximately \$213.3 million in present value terms and the

termination of the Commonwealth Guarantee over the Revenue Refunding Bonds, 2008 Series A and B.

The 2020 Senior Bonds are classified as senior debt and are not guaranteed by the Commonwealth. After the Federal Debt modification in July 2019 and the issuance of the 2020 Senior Bonds, no Commonwealth Guaranteed Indebtedness remains outstanding.

Furthermore, each purchaser of 2020 Senior Bonds consented, by its purchase and execution of an investor letter, to the terms and execution by the Trustee of a Second Amended and Restated Trust Agreement. The Second Amended and Restated Trust Agreement will be executed and become effective upon the receipt of the written consent of the holders of all outstanding senior indebtedness under the Trust Agreement, including the Federal Lenders, and provides, among other changes, to convert the security on the Authority's revenue from a gross revenue pledge to a net revenue pledge.

The 2020 Bonds were issued through a limited offering to a maximum of 35 qualified institutional buyers (not a private placement). Below are highlights of the issuance:

- PRASA offered approximately \$1.4 billion in 2020 Bonds and received over \$3 billion in indications of interest.
- PRASA achieved average annual debt service savings of \$13 million, total debt service savings of \$350 million, representing 15% in NPV savings as % of refunded bonds.
- PRASA obtained the consent from purchasers of the 2020 Bonds to return to a net revenue lien from the existing gross revenue lien upon receiving consent from its remaining senior creditors.
- Purchasers of the 2020 Bonds were traditional municipal market investors (not hedge funds).

Additionally, since January 2021, PRASA and AAFAF have received multiple unsolicited offers from credit market participants regarding additional refunding opportunities for savings given increased demand for PRASA bonds.

However, in accordance with PROMESA Sections 201(b), the issuance of the 2020 Senior Bonds through a limited offering does not constitute access to credit markets at reasonable rates.

3.2 New Measures Summary

PRASA plans to implement several measures in order to maintain financial stability and improve operational performance. These measures will ensure PRASA's long-term sustainability and the provision of safe, reliable, and affordable water and wastewater service that the people of Puerto Rico deserve. Three broad categories of measures are incorporated in the Post-Measures Financial Results:

1. **Revenue Enhancement Measures:** measures targeting adequate cost recovery levels executed through future rate adjustments and improvements in billing accuracy.
2. **Expense Reduction and New Financing Measures:** measures to reduce PRASA's overall spend through labor and operational optimization across all spend categories as well as securing Federal funding to help finance the CIP.

3. **Enabling Measures:** measures without tangible financial impact, but which are important to the successful implementation of this Fiscal Plan and help further ingrain principles of long-term financial and operational sustainability throughout the organization.

A summary of the expected net benefit for each individual measure is included in Table 3-8, at the end of this chapter.

3.2.1 Revenue Enhancement Measures

PRASA is pursuing two major measures directed at increasing revenues:

- **Rate Adjustments:** continue with the scheduled implementation of modest rate increases, including the one scheduled in FY2022—consistent with past Fiscal Plans and standard utility practice—and complete a review of the current rate structure to ensure simplicity, affordability, and adequate cost recovery in FY2023 and beyond.
- **Metering and customer service optimization:** reduce commercial water losses replacing customer’s old meters, addressing theft, improving data quality and improving customer experience and satisfaction either independently or through a P3 agreement.

3.2.1.1 Rate Adjustments

To continue delivering reliable, affordable, and safe water and wastewater services without reducing necessary investments in its CIP, PRASA must ensure adequate revenue levels over time through a rate structure redesign. As discussed in Section 3.1.1.1 PRASA has an approved moderate rate adjustment schedule for five years between FY2018-FY2022. This rate adjustment schedule is summarized in Table 3-2. The final scheduled rate adjustment is expected to be implemented on July 1, 2021 (FY2022). Rate adjustments beyond FY2022 will be contingent on the results of a rate redesign study being conducted by an external consultant and on compliance with the requirements of Act No. 21, of the Legislature of Puerto Rico, approved on May 31, 1985 (“Act 21”).

Act 21 provides uniform procedures for public hearings and process for the Authority to review its rates. Act 21 mandates engaging an independent examiner, who will then submit an independent report to the Governing Board. Therefore, the outcome of the rate design study will be subject to the public hearing process in accordance with Act 21 requirements

PRASA engaged a third-party expert in utility rate design to perform a comprehensive cost of service study and recommend an optimal rate structure aligned with industry standard cost allocation and rate design principles.

The rate structure review will emphasize the following objectives:

- Optimal cost recovery;
- Affordability and protection of vulnerable customers;
- Ease of implementation, understanding, and simplicity;
- Fairness and equity between and within customer classes; and
- Conservation incentives.

The recommendations arising from the third-party study will be subject to the public hearing process mandated by Act 21.

Though PRASA cannot represent or guarantee what the rate adjustments will be after FY2022, this Fiscal Plan assumes 2% annual rate adjustments across all customer segments during FY2023-FY2026. To illustrate, rate increases of 2% implemented after FY2022⁵⁴ would represent ~\$0.60 and ~\$1.07 in monthly, base rate charges for residential and commercial customers in the lowest consumption block, respectively.

Currently, the rate adjustment measure has generated an estimated \$230 million in additional revenues between FY2018-FY2021. For future years, the accumulated projected impact is illustrated in Exhibit 3-2.

EXHIBIT 3-2: RATE ADJUSTMENT PROJECTED BENEFITS (IN \$ MILLIONS)

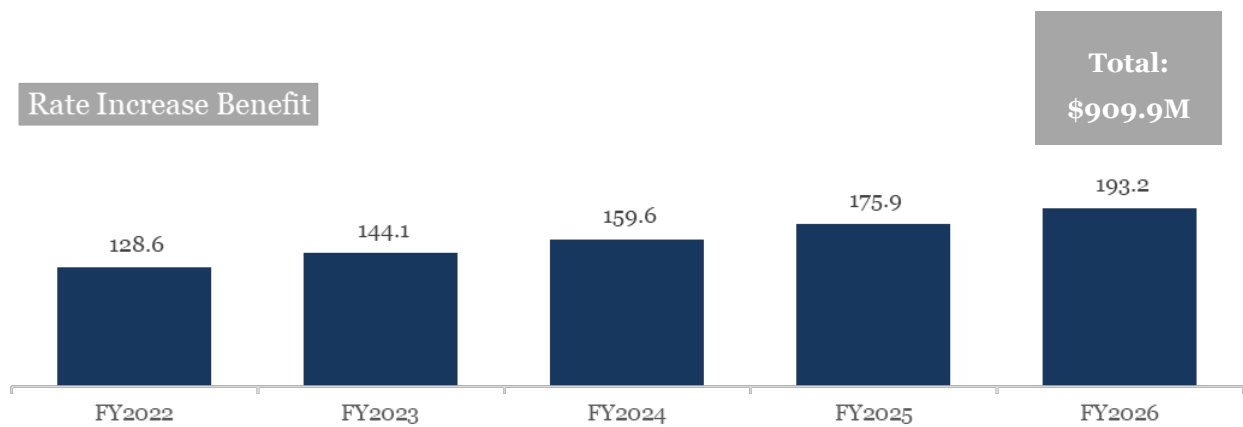


Exhibit 3-3 outlines the key action items for successful and timely delivery of this measure.

EXHIBIT 3-3: ACTION PLAN FOR RATE ADJUSTMENT MEASURE

Action items	Deadline	Owner
Implement approved rate adjustment (FY2022)	July 1, 2021	Customer Service/IT
Share rate design study findings with the Oversight Board	July 30, 2021	Customer Service
Start public hearing process required by Act 21	November 1, 2021	Customer Service
Implement revised rate structure (FY2023)	July 1, 2022	Customer Service/IT

⁵⁴ This exercise is solely for illustrative purposes and used PRASA’s most recent rate structure costs.

3.2.1.2 Metering Optimization

With respect to NRW reduction, one of PRASA’s main priorities, the Authority is analyzing alternative projects to reduce commercial water losses and improve customer experience and satisfaction. The main objectives of this measure are summarized in Exhibit 3-4.

EXHIBIT 3-4: GOALS FOR METERING & CUSTOMER SERVICE OPTIMIZATION MEASURE



This measure aims to (i) install new, non-mechanical meters (ultrasonic or electromagnetic) capable of allowing for real-time smart meter technologies implementation, (ii) pursue activities that would help decrease commercial water losses and—to a lesser degree—physical water losses, and (iii) improve customer service operation, efficiency and ultimately customers’ satisfaction. By increasing the accuracy of water meters, PRASA will be able to transition away from estimated commercial losses and achieve a greater level of precision in its measurements.

Moreover, by reducing the uncertainty of the System’s apparent losses (commercial losses), PRASA will be able to recover revenues lost to theft and unmetered usage and determine with greater accuracy the volume of real physical water losses. Ultimately, through this measure, PRASA will be able to better determine its CIP needs and intelligently address the renewal and replacement of its linear (pipe) assets to reduce real losses.

PRASA must prioritize replacement of meters in densely populated service areas or in a manner in which the anticipated annual revenue increase would exceed, or at least equal, the anticipated annual life cycle cost associated with the meter. PRASA must also ensure that the cost of any new meters be reasonable with respect to industry standards, irrespective of the equipment and the services it procures.

Currently, PRASA and the P3 Authority have been in negotiations with a preferred proponent for over a year. Given the delay in negotiations and general uncertainty on the matter, PRASA must continue to explore all alternative mechanisms to improve its old and unreliable metering

infrastructure through the use of federal funds, as indicated in its most recent 90-day plan. To this effect, PRASA must make a final determination as to whether it will use the current P3 process or whether it will pursue other alternatives available, including a self-procurement model (as is customary in the drinking water industry). In making its decision, PRASA must weigh a host of factors, including but not limited to: total project costs (purchase and installation costs per meter and warranties), financing, feasibility, return on investment, pay-back period, and a reasonable timeline for implementation that contemplates commensurable risk sharing and best-in-class models in the water sector (i.e., use of a targeted and phased approach that incorporates a benefit/cost analysis at each project milestone to determine incremental revenues).

Regardless of PRASA’s preferred solution model, the Authority recognizes the criticality involved in reducing commercial losses and must take the necessary steps to implement a project by no later than the third quarter of this fiscal year.

EXHIBIT 3-5: ACTION PLAN FOR METERING OPTIMIZATION MEASURE

Action items	Deadline	Owner
Determine the operational model to pursue meter replacement program (i.e., refined P3 or self-procured)	August 31, 2021	PRASA Governing Board and/or P3A
Establish the necessary steps to execute the selected operational model (e.g., scope and procurement timeline) alongside projection of associated benefits	October 29, 2021	PRASA Governing Board and/or P3A
Issue procurement* for the selection of third-party metering vendor(s)	January 31, 2022	Meter Replacement Project Manager
Initiate implementation of pilot metering replacement program/P3 project	March 31, 2022	Meter Replacement Project Manager

**contingent on PRASA’s operational model election on Aug 31, 2021. This milestone would be held in effect only if PRASA were to select the self-procured model.*

3.2.2 Expense Reduction and New Financing Measures

PRASA will pursue the following measures to reduce operating expenses and obtain new financing for its CIP:

1. **Organization optimization:** adjust the Authority’s workforce size to 4,677 until the completion and deliberation of the comprehensive productivity and rightsizing assessment.
2. **Pension reform:** improve the financial stability of public employees through reforms that maintain enough funds to comply with PayGo and provide the administration necessary to create a defined contribution plan for employees.
3. **Christmas bonus elimination:** remove the annual end-of-year bonus payment and the accrual for subsequent years starting on July 1, 2021.

4. **Healthcare Savings⁵⁵:** explore additional savings to ensure the Authority is receiving optimal market price and coverage consistent with Act 26-2017.
5. **Chemical expense reduction:** reduce chemical costs through new purchasing processes, and potentially through a laminar aeration project at Carraizo Dam.
6. **Electricity expense reduction:** reduce electricity costs through increased efficiency and new distributed generation under PPAs.
7. **Physical water loss reduction:** reduce physical water loss through master meter installation, leaks reduction, and pressure management.
8. **New Financing for CIP:** obtain new financing for CIP from sources such as the State Resolving Funds administered under the USEPA and the USDA Rural Development Program.

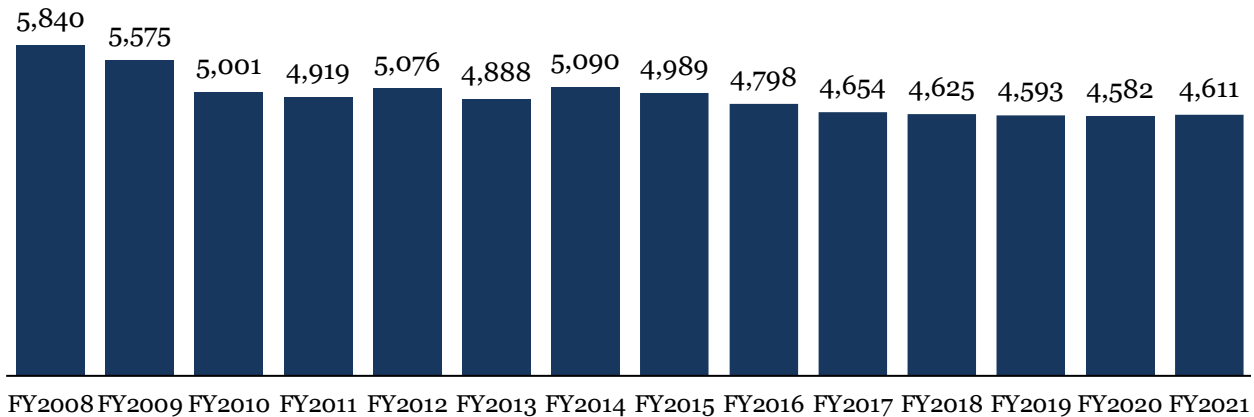
3.2.2.1 Organization Optimization

As of June 30, 2021, the Authority's workforce is projected at 4,677. Since FY2008, with exception to FY2014, the Authority has experienced headcount reduction of 22% or 1/5 of its personnel. In part, this reduction was exacerbated between FY2016 and FY2017 with over 300 employees accepting the terms⁵⁶ of the Pre-Retirement Program. As part of the program, participants do not render any services to the Authority, which means PRASA has 4,300 active employees, and not 4,677 as indicated by total workforce numbers. In turn, this creates an unsustainable situation affecting PRASA's operations and performance by requiring moderate increases in overtime and greater reliance on more expensive third-party services.

⁵⁵ PRASA issued an RFP and subsequently implemented a health medical plan consistent with FOMB's policy on July 1, 2020; however, it must periodically return to market to ensure it's providing a cost-effective plan with reasonable coverage.

⁵⁶ Incentives include: 60% payment of average salary, payout of unused vacation and sick days (as per Act 66-2014) and maintaining their health insurance coverage for a term of two years. These incentives are applicable to pre-retired employees and payable by PRASA until eligible employee meets the requirement for full retirement under ERS's coverage.

EXHIBIT 3-6: PRASA HEADCOUNT FY2008-FY2021 (AS OF APRIL 30, 2021)



During FY2021 PRASA engaged a firm to perform a labor capacity and productivity assessment to determine its optimal staffing levels. The assessment should identify and provide insights on the following:

- Adequate headcount levels to operate PRASA’s system;
- Improvements to personnel recruiting and retention practices; and
- Compensation levels for competitiveness and alignment with the Puerto Rico and U.S. mainland labor markets, where applicable.

Based on the final results of this analysis the Authority will determine how to cover the identified needs, via internal resources, transfer from other public corporations or from the labor market.

Until the results of this study are available, payroll will be projected maintaining headcount level at 4,677 employees at their current salaries, including 66 transferred from PREPA. Headcount and Payroll costs projections will be updated after the results of the analysis are available.

Total savings from this measure during the Fiscal Plan period is projected at \$4 million as illustrated in Exhibit 3-7 below.

EXHIBIT 3-7: ORGANIZATION OPTIMIZATION PROJECTED SAVINGS (IN \$ MILLIONS)

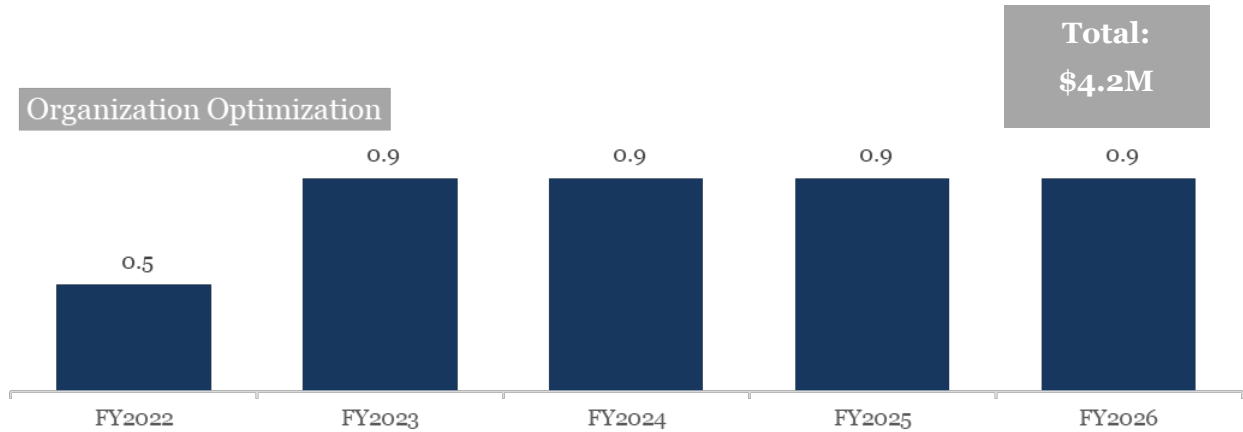


EXHIBIT 3-8: ACTION PLAN FOR ORGANIZATION OPTIMIZATION MEASURE

Action items	Deadline	Owner
Complete productivity and rightsizing study	August 31, 2021	Human Resources
Submit key findings and proposed changes resulting from workforce planning and talent management study to Oversight Board	September 30, 2021	Human Resources
Discuss findings and proposed changes with Oversight Board	November 15, 2021	Human Resources

3.2.2.2 Pension Reform

PRASA’s pension reform measure is part of the Commonwealth’s overall measure to progressively restore fiscal health to Puerto Rico while ensuring that adjustments to pension benefits occur in a manner that protects the economic well-being of all retirees. PRASA (in compliance with Act 106-2017) uses the Pay-as-you-Go (“PayGo”) system. PRASA’s pension contributions will be reduced by a maximum of 8.5% depending on participant pension amount, with no reduction to those with benefits less than \$1,500 per month starting in July 2022, which is consistent with the 2021 Commonwealth Fiscal Plan as certified by the Oversight Board.

Total savings from this measure during the Fiscal Plan period is projected at \$19.6 million as illustrated in

Exhibit 3-9 below.

EXHIBIT 3-9: PENSION REFORM PROJECTED SAVINGS (IN \$ MILLIONS)

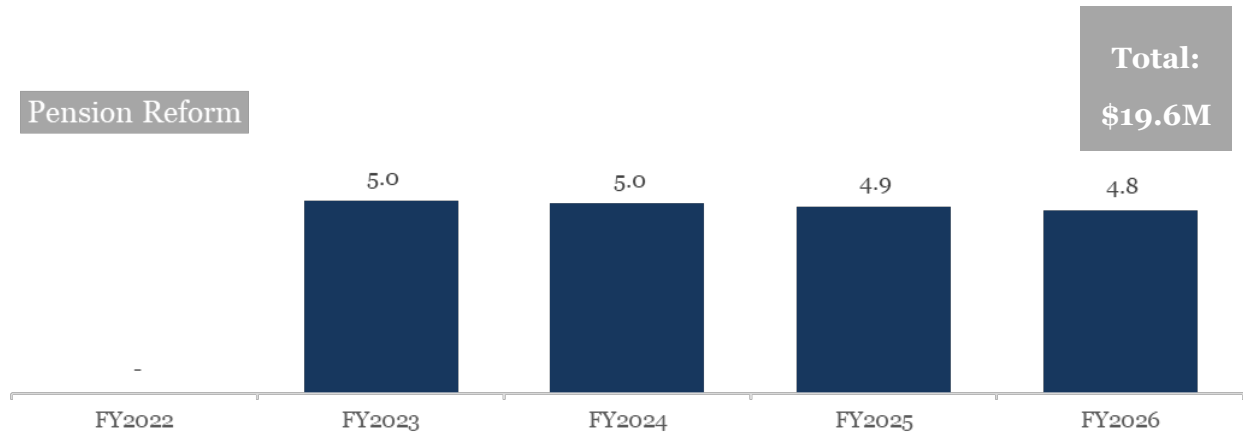


EXHIBIT 3-10: ACTION PLAN FOR PENSION REFORM IMPLEMENTATION

Action items	Deadline	Owner
Implement Pension Reform	July 1, 2022	Commonwealth

3.2.2.3 Christmas Bonus Elimination

In order to enable the reduction of payroll expenditures without reducing additional employees, PRASA must look to reduce non-salary compensation paid to employees such as Christmas bonuses for both temporary and permanent workers, as well as existing and new hires. The Christmas Bonus program is not to be replaced by another form of annual bonus program.

In prior years, PRASA has successfully identified real, tangible savings within its payroll budget to pay for the Christmas Bonus. As such, any payment or disbursement tied to the Christmas Bonus is conditioned on meeting the payroll savings requirement and is subject to Oversight Board approval.

Total savings from this measure during the fiscal plan period is illustrated in

Exhibit 3-11 below.

EXHIBIT 3-11: CHRISTMAS BONUS ELIMINATION PROJECTED SAVINGS (IN \$ MILLIONS)

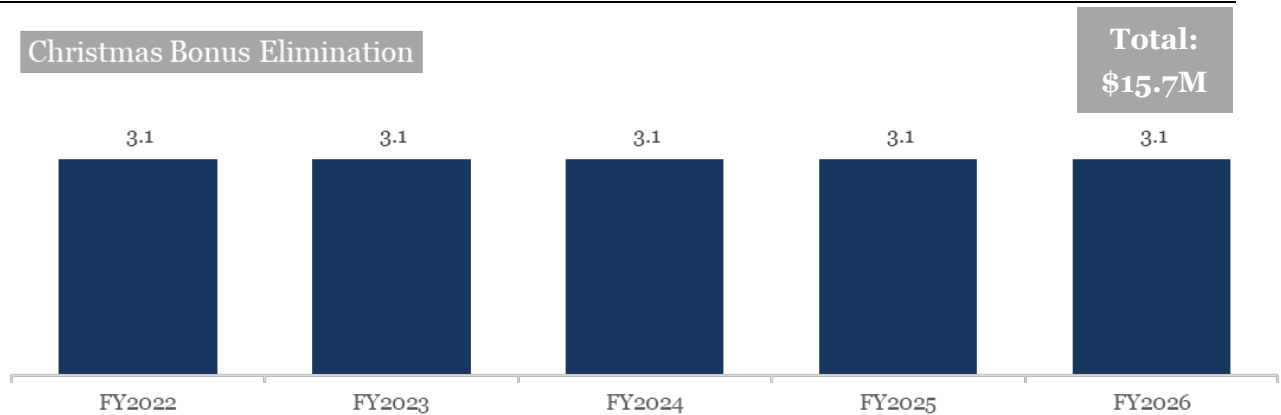


EXHIBIT 3-12: ACTION PLAN FOR CHRISTMAS BONUS ELIMINATION

Action items	Deadline	Owner
Eliminate Christmas Bonus accruals representing current and subsequent year payments	July 1, 2021	Human Resources

3.2.2.4 Healthcare Savings

This measure seeks to standardize health insurance contributions at PRASA by calculating a total health medical plan budget assuming a \$125 per employee per month contribution for all regular employees without pre-existing conditions and a \$460 per employee per month contribution for regular employees with pre-existing conditions. Starting in FY21, PRASA entered into a new medical health plan agreement to lower costs while providing adequate, market-based medical coverage for its employees. In addition to the savings already realized in FY21 product of the medical health plan measure, PRASA must now ensure by means of a procurement process it's receiving optimal market price and benefits for its employees consistent with uniform employer contributions as set forth by Act 26-2017.

This measure represents a projected average annual saving of \$3.2 million and total savings of \$18 million during the Fiscal Plan period, as illustrated in

Exhibit 3-13 below.

EXHIBIT 3-13: HEALTHCARE PROJECTED SAVINGS (IN \$ MILLIONS)

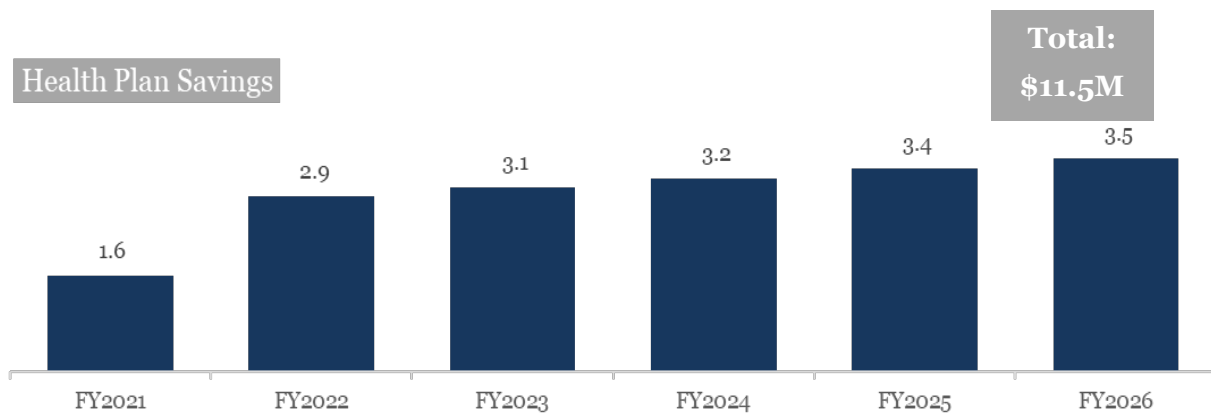


Exhibit 3-14 outlines the key action items for successful and timely delivery of this measure.

EXHIBIT 3-14: ACTION PLAN FOR HEALTHCARE SAVINGS MEASURE

Action items	Deadline	Owner
Procure information (i.e., RFI) on alternative health medical coverage	January 31, 2022	Human Resources

3.2.2.5 Chemical Expense Reduction

Chemicals spend is PRASA’s fourth largest operating expenditure at over \$40 million per year. Although PRASA recognizes cost reduction opportunities through procurement strategies and/or chemical usage, any changes need to be carefully managed in order to ensure compliance with all drinking water and environmental regulations.

Complicating the matter is the fact that water quality and availability in Puerto Rico are quickly and constantly changing. Droughts, hurricanes, and climate pattern variability alter water quality and supply, creating challenges for effective chemicals application and optimization.

With this in mind, PRASA has identified four levers to reduce chemical spend and usage while ensuring high water quality:

- **Chemicals inventory and application optimization:** PRASA established a detailed inventory for chemicals use and application, with the following goals:
 - Improve chemical consumption visualization
 - Increase supplier provision accuracy
 - Detect and prevent unallowed chemical uses
 - Optimize chemical inventory levels
 - Control and monitor chemical consumption by region
 - Provide continuous updates and monitoring to program technologies
- **Coagulant and Flocculant cost reduction:** PRASA issued an RFP to consolidate purchase of coagulants and flocculants for all its plants. The centralized RFP process is expected to maximize opportunities for price reductions through bulk purchasing. Furthermore, the single supplier must provide guidance to PRASA for the adequate type of chemicals, thereby further increasing efficiency in chemicals application.
- **Chlorine and Permanganate Cost Reduction:** A bidding process for chlorine (calcium and sodium hypochlorite) and permanganate is underway to provide for the requirements for all of PRASA's facilities based on various levels of concentration and sizing.
- **Improve Carraizo Reservoir Water Availability:** A Professional Engineer Report has been procured to determine the best option to increase water availability at the Carraizo Reservoir.

Around 75% of PRASA's chemical expense is related to polymers and over 50% of the remaining 25% is related to the three chemicals selected for the bidding process: calcium hypochlorite (granular), sodium hypochlorite, and permanganate.

Because the evaluation of the adequate coagulants and flocculants for each facility is still in process and the proposals for the bidding for chlorine and permanganate are still to be received, there is no current estimated financial impact from these initiatives included in the 2021 Fiscal Plan. Financial impact for laminar aeration (if such action is recommended by the professional engineer) will be estimated based on a Professional Engineer Report which is expected to be completed by July 31, 2021.

Exhibit 3-15 outlines the key action items for successful and timely delivery of this measure.

EXHIBIT 3-15: ACTION PLAN FOR CHEMICAL EXPENSE REDUCTION MEASURE

Action items	Deadline	Owner
Finalize Carraizo Laminar Aeration Professional Engineer Report	July 15, 2021	Infrastructure
Report coagulant and flocculant procurement status to Oversight Board	July 30, 2021	Strategic Planning /Compliance
Proposal award for chlorine and permanganate bid	August 31, 2021	Purchasing /Operations
Provide update on the chemical inventory program to Oversight Board	September 30, 2021	VP of Strategic Planning
Finalize coagulant and flocculant testing	July 31, 2022	Strategic Planning /Compliance
Finalize coagulant and flocculant procurement process	December 31, 2022	Strategic Planning /Compliance

3.2.2.6 Electricity Expense Reduction

Reducing PRASA’s second largest operating cost through efficiency measures can be achieved by some non-capital-intensive measures such as:

- Performing further operational improvements focused on conservation measures in its water treatment plants (WTPs) and wastewater treatment plants (WWTPs)
- Leveraging hydraulic modeling analyses and optimization efforts to reduce energy consumption in the water distribution and wastewater collection system (i.e., pump station facilities)
- Providing more flexibility to the System, reducing, and optimizing the hours of operation at the facilities
- Identifying energy conservation measures in equipment operation

Through the measures set forth above, PRASA expects to reduce its consumption by almost 16 million kWh by FY2026, which is roughly 2.5% of its total energy consumption.

PRASA will also pursue additional PPA measures at 14 new sites to obtain up to 27 million kWh from solar energy at a reduced rate when compared to current energy prices. The timeline for the new PPAs is included in Table 3-4 below.

TABLE 3-4: NEW PROJECTED PPAS

Facility	Million kWh	Expected by:
Barceloneta WWTP	1.66	FY 2026
Bayamon WWTP	1.64	FY 2024
Mayaguez WWTP	4.96	FY 2025
SuperAqueduct RWPS	4.92	FY 2024

Guayama WWTP	1.64	FY 2024
Fajardo WWTP	1.66	FY 2026
Fajardo WTP & RWPS	1.66	FY 2026
Ponce WWTP	1.65	FY 2025
Utua WWTP	1.00	FY 2026
Hatillo Camuy WWTP	1.00	FY 2026
Arecibo Islote WWTP	1.00	FY 2026
Caguas WWTP	1.17	FY 2026
Carolina WWTP & Torrecillas WWPS	1.65	FY 2026
Santa Isabel WWTP	1.00	FY 2025
Total kWh	26.62	FY 2026

The actual cost savings from this measure will largely depend on the cost of electricity produced by PREPA. Based on current projected electricity rates, the financial impact of this measure is illustrated in

Exhibit 3-16, with total expected saving of \$15.0 million during the Fiscal Plan period.

EXHIBIT 3-16: PROJECTED ELECTRICITY EXPENSE REDUCTION (IN \$ MILLIONS)

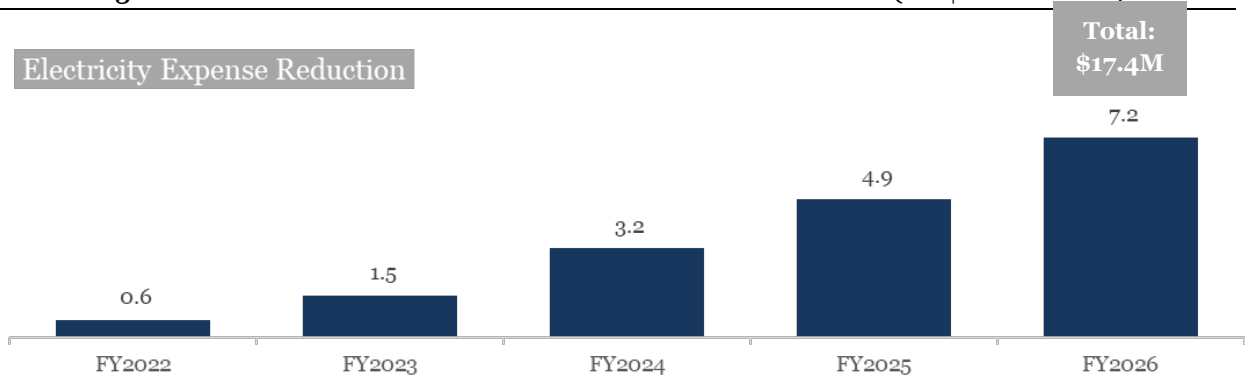


Exhibit 3-17 outlines the key action items for successful and timely delivery of this measure.

EXHIBIT 3-17: ACTION PLAN FOR ELECTRICITY EXPENSE REDUCTION MEASURE

<u>Action items</u>	<u>Deadline</u>	<u>Owner</u>
Submit to the Oversight Board a list of potential renewable energy opportunities to be considered for procurement	August 31, 2021	Infrastructure
Issue the RFI (i.e., procure information) for the defined renewable energy opportunities such as PPAs.	October 15, 2021	Infrastructure
Reassess and adjust underperforming implemented non-capital-intensive measures	October 29, 2021	Operations
Size and determine the projected benefits of the additional renewable energy opportunities	December 31, 2021	Infrastructure

3.2.2.7 Physical Water Loss Reduction

High levels of physical water losses continue to be one of PRASA’s major challenges. Physical losses are due to leaks and breaks throughout the System or water that fails to reach the customer and therefore is not billed even though the cost of producing it is still incurred. By addressing physical water loss levels, PRASA can lower production requirements, thus reducing the strain on its infrastructure and lowering electricity and chemical expenditures. It can also help conserve and manage the Island’s water resources more sustainably, which will help minimize the need for rationing during drought periods.

PRASA’s Water Recovery Office (WRO) has the responsibility for guiding the Authority’s three main physical water loss reduction programs:

1. **Master Meters:** accurately measuring water production by the installation of water meters at critical facilities;
2. **Pressure Management:** incorporating pressure management best practices across the transmission and distribution network; and
3. **Leaks Detection and Reduction:** improving identification, prioritization, and resolution of major leaks across PRASA’s System.

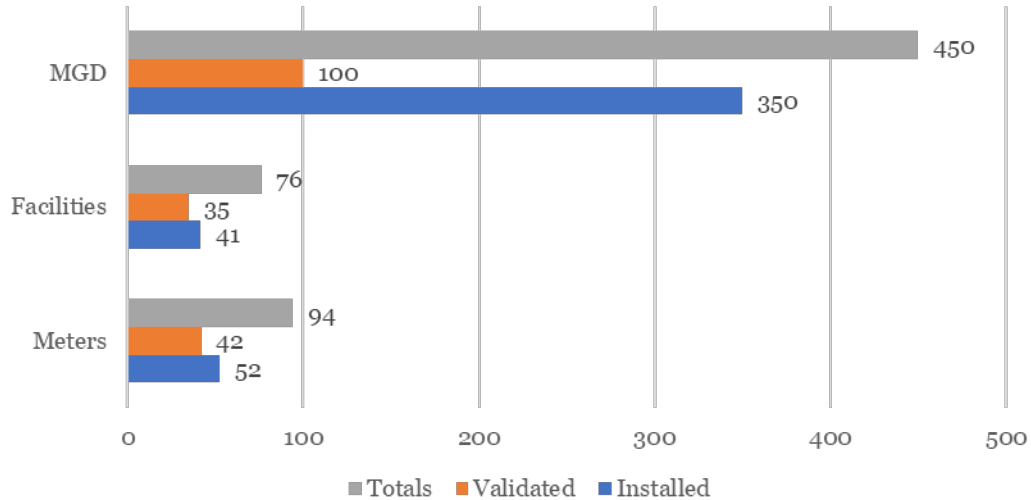
These three measures are central to achieving PRASA’s goal of reducing losses by 52 MGD by FY2026. PRASA contracted an external project manager, architect, and engineering consultant in June 2020 to provide support in the execution of these Physical Water Loss reduction measures.

3.2.2.7.1 Master Meters Program

The validation, calibration, or replacement of the meters at water treatment plants and wells (master meters) enables PRASA to obtain accurate information on water production for evaluating and adjusting System performance and to perform water balance calculations. To address the production side information gap, the Authority implemented and completed a critical milestone contained in past fiscal plans related to its Master Meters Replacement Program. During FY2021, PRASA finalized installing or calibrating meters measuring over 80% of the Authority’s water production.

The goal of this program was to increase the percentage of the Authority’s water production that is accurately and reliably measured. The program replaced or validated 94 master meters at 76 facilities producing over 80% of the total potable water throughout the System. Currently, the master meters are providing reliable and valuable information on real water production, a key component to more accurately defining the amount of water losses and identify reduction opportunities.

EXHIBIT 3-18: MASTER METERS PROGRAM RESULTS (FEBRUARY 2021)



PRASA’s goal is to keep replacing and validating master meters to gradually reduce the level of estimated water production to 6%.

3.2.2.7.2 Pressure Management Program

Pressure Management is one of the most basic tools available to address total water losses. Lowering the water pressure within the System will inevitably reduce leakage, thereby reducing water production requirements. This is especially important in view of the extremely high volume of leakage in PRASA’s system (~50% - 60%). Therefore, optimization of the pressure management program is essential until PRASA is able to significantly reduce its leakage volumes through other means.

Most of the Potable Water System Identification (PWSIDs) on the Island operate with a focus on a minimum pressure requirement and not a maximum pressure restriction or limitation, resulting in numerous areas of high pressures. This new program will allow for the optimization of the pressure for each PWSID through repairs or replacement of equipment and reducing excess

pressure events in the system.⁵⁷ PRASA already identified 39 pressure zones to focus the efforts under the initial phase of this program.

3.2.2.7.3 Leaks Reduction Program

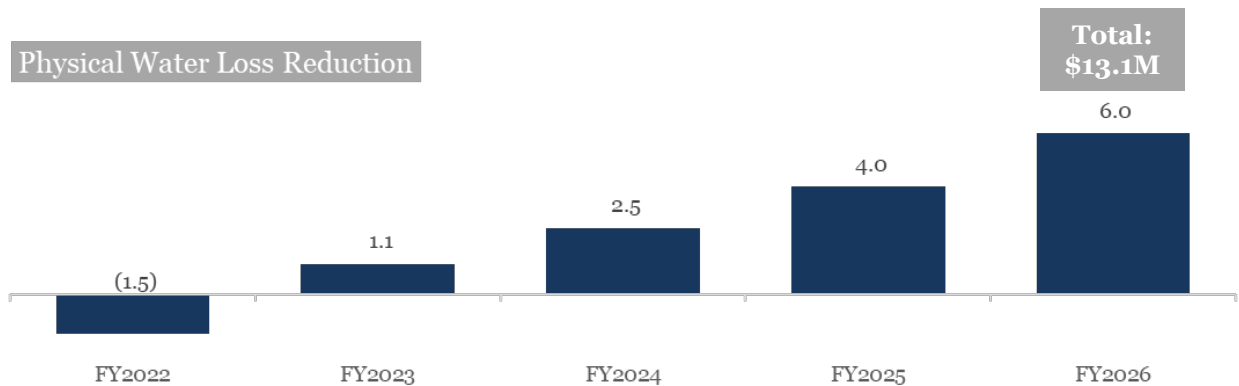
Water leaks are one of the main reasons for physical water losses. Leaks can occur on transmission or distribution lines, tanks, and on service connections up to the customer meter. An active leak detection program paired with prompt repair is an essential component for every utility to lower their NRW levels. Recent benchmarking exercises⁵⁸ indicate that PRASA is lagging utilities on the mainland with respect to the number of leaks detected and associated repair time. Increasing the efficacy of this initiative is imperative. Therefore, the Authority is placing high emphasis on its performance for the upcoming fiscal year.

PRASA has service contracts with external contractors to identify leaks, prioritize underground infrastructure repairs and replacements, and train PRASA teams to perform the work. PRASA has recently procured specialized equipment used to support this initiative, not only in identifying existing undetected leaks, but also in emergency responses to effectively identify impacted transmission and distribution pipelines. The WRO is responsible for collecting field data on leak occurrences and guiding regional teams to make repairs.

3.2.2.7.4 Physical Water Loss Reduction Projected Financial Impact

Exhibit 3-19 shows estimated financial impact for FY2021-FY2026. Depending on the unit cost of chemicals and electricity, total projected savings by FY2026 are estimated to be up to \$6 million per year, net of the measure costs.

EXHIBIT 3-19: PHYSICAL WATER LOSS REDUCTION PROJECTED MEASURE IMPACT (IN \$ MILLIONS)



⁵⁷ Each PSI lowered is expected to result in 1% reduction of physical water loss; J. Schwaller, Modelling The Effects Of A Large Number Of Leaks In A Water Distribution Network Using The Favard Equation. In Civil Engineering, Water Infrastructure Engineering, M.Sc. Thesis, University of Applied Sciences Karlsruhe. Karlsruhe, Germany, 2012.

⁵⁸ Fiscal Year 2019 Consulting Engineer’s Report for PRASA.

For FY2022 the initial costs to install master meters and to start the leak detection measure deployment is higher than the expected return. Net savings are expected starting in FY2023.

3.2.2.7.5 Milestones and Action plan

In order to accelerate these measures, PRASA established specific goals for each fiscal year, which are summarized in Exhibit 3-20.

EXHIBIT 3-20: GOALS FOR PHYSICAL WATER LOSSES MEASURE

	FY2021	FY2022	FY2023	FY2024	FY2025	FY2026	Total 2021/2026
Master Meters (MM):							
Installed/Calibrated MM	94	21	28	28	14	TBD	185
Production Metered (MGD)	450	35	10	10	5	-	510
% of Water Production Measured	83%	6%	2%	2%	1%	0%	94%
Pressure Management:							
Pressure Zones Visits	45	55	62	66	74	78	380
Average PSI	78.8	77.8	76.8	75.8	74.8	73.8	73.8
Recovered MGDs	3.5	2.0	2.2	2.3	2.6	2.7	15.2
Leak Detection:							
Recovered MGDs	4.9	4.9	5.7	6.5	7.3	7.7	36.9
Total Recovered MGDs	8.4	6.8	7.9	8.8	9.9	10.4	52.1
Accumulated Reduction (MGD)	8.4	15.2	23.1	31.9	41.8	52.1	

The objectives and milestones will be reviewed once leak detection and pressure management intervention strategies are in place and every 6 months thereafter to reflect actual performance values. The information obtained through these measures will help develop a more accurate and reliable Water Balance report.

Based on current available information and assumptions included above, Table 3-5 below shows the expected reduction in MGD.

TABLE 3-5: EXPECTED MGD REDUCTION

In MGDs	FY2021	FY2022	FY2023	FY2024	FY2025	FY2026
Pressure Management Initiative	3.5	2.0	2.2	2.3	2.6	2.7
Leak Reduction Initiative	4.9	4.9	5.7	6.5	7.3	7.7
Reduction in Production	8.4	6.8	7.9	8.8	9.9	10.4
Accumulated Reduction	8.4	15.2	23.1	31.9	41.8	52.1

Exhibit 3-21 lays out the actions required for timely and effective delivery of the overall NRW reduction measure and for each of the specific programs.

EXHIBIT 3-21: ACTION PLAN FOR PHYSICAL WATER LOSS REDUCTION MEASURE

Action items	Deadline	Owner
<i>Water Balance</i> – submit 2020 Water Balance results to the Oversight Board	June 30, 2021	NRW Office
<i>Leak Reduction</i> – submit a leak reduction program including high-priority targets to the Oversight Board	September 15, 2021	NRW Office
<i>Water Balance</i> – submit 2021 Water Balance results to the Oversight Board	September 15, 2021	NRW Office
<i>Pressure Management</i> – deploying crews to attend flagged pressure zone (39)	September 30, 2021	NRW Office
<i>Pressure Management</i> – monitoring of flagged pressure zones (39)	November 15, 2021	NRW Office
<i>Leak Reduction</i> – identify tanks (auxiliary facilities) that require telemetry upgrades	December 15, 2021	NRW Office
<i>Leak Reduction</i> – Implement targeted, leak reduction program	December 15, 2021	NRW Office
<i>Leak Reduction</i> – procure overflow technology for identified tanks	February 1, 2022	NRW Office
<i>Master Meters</i> – Complete calibration or installation of remaining 15-20% of water producing facilities	June 30, 2022	NRW Office

3.2.3 New Financing for CIP

After the modification of the Federal Debt, PRASA recovered access to future funding from SRF and USDA-RD Programs. Table 3-6 describes the two federal funding programs for which PRASA qualifies.

TABLE 3-6: FEDERAL FUNDING PROGRAMS

Program	Description
State Revolving Funds (SRF) Loans	<ul style="list-style-type: none"> Annual grants from USEPA of around \$30 million for Drinking Water SRF (DWSRF) and Clean Water SRF (CWSRF) Programs, Commonwealth match of 20% of the annual grant provided by DOH and PRDNER, respectively The program’s Repayment Funds are also available, currently with a balance of around \$200 million to be assigned through new loans for qualifying projects without a state match requirement
Rural Development (RD) Program	<ul style="list-style-type: none"> Bond program operated through Rural Development division of the US Department of Agriculture to provide funds for water and wastewater projects in rural areas. Annual appropriation for Puerto Rico has been historically around \$10 million

PRASA’s opportunities for funding are limited to the cost of qualifying projects and capped at the annual appropriations and repayment funds available through these programs.

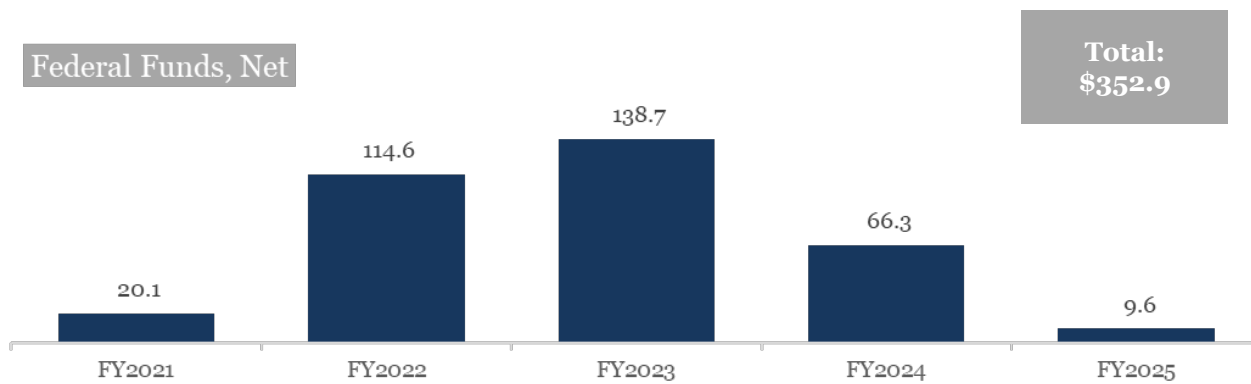
The new funds are projected net of the expected debt service for such funds, calculated assuming 30-year loans at 1% for the SRF Program and 40-year loans at 4% for the RD Program. Table 3-7 presents the expected federal funding and corresponding costs during the Fiscal Plan period.

TABLE 3-7: EXPECTED FEDERAL FUNDING AND COST (IN \$ MILLIONS)

<i>In \$ Millions</i>	FY2021	FY2022	FY2023	FY2024	FY2025	FY2026	FY21/26
SRF Funds	18.7	110.3	136.8	74.6	21.7	19.1	381.2
RD Funds	1.6	9.6	13.0	5.7	2.6	-	32.4
SRF DS	(0.2)	(4.8)	(9.8)	(12.5)	(13.1)	(13.8)	(54.1)
RD DS	(0.0)	(0.6)	(1.2)	(1.5)	(1.6)	(1.6)	(6.6)
New Federal Funds, Net	20.1	114.6	138.7	66.3	9.6	3.7	352.9

A total of \$413.6 million of federal funds are projected to be received during the Fiscal Plan period with a net impact after debt service of \$352.9 million as presented in Exhibit 3-22.

EXHIBIT 3-22: PROJECTED NEW NET FEDERAL FUNDS MEASURE (IN \$ MILLIONS)



The projections included herein may change based on the projects and progress of federally funded capital improvements as well on the Federal funds’ annual appropriations and availability.

Exhibit 3-23 outlines the key action items for successful and timely delivery of this measure.

EXHIBIT 3-23: ACTION PLAN FOR NEW FINANCING FOR CIP

Action items	Deadline	Owner
Execute Financial Assistance Agreement for DWSRF funds (\$46M)	July 31, 2021	Finance
Execute Financial Assistance Agreement for new CWSRF funds (\$32M)	August 31, 2021	Finance
Execute Loan Agreement for RD funds (\$26M)	TBD	Finance

3.2.4 Other Measures Under Development

3.2.4.1 Potential Refinancing of 2012 Senior Bonds

In addition to the measures described previously, the Authority and its financial advisor, AAFAF, are evaluating a potential refinancing of all or a portion of the Authority's outstanding 2012 Senior Bonds. As publicly announced on March 31, 2021, the potential transaction is expected to be pursued through a Limited Public Offering.

The size, timing and structure of the potential refinancing are subject to, among other things: (i) approval by (A) the Board of Directors of AAFAF, (B) the Governing Board of the Authority and (C) the FOMB, (ii) market conditions, and (iii) other factors both within and outside the discretion of the Authority and AAFAF. There is no guarantee that the potential refinancing will be consummated, that any particular outstanding bonds or other obligations of the Authority will be refinanced, or that any new bonds of the Authority will be offered, sold, or issued.

3.3 Enabling Measures

Beyond the measures discussed above, PRASA is developing additional measures with the goal of improving efficiencies, preparedness, resiliency, and capital delivery:

- **Interagency debt settlement (between PREPA & PRASA):** clear PRASA's balance sheet in FY2022 from aged and disputed outstanding debt through binding interagency negotiations or alternate dispute resolution methods.
- **Project Management Office (PMO) execution:** establish a PMO office tasked and empowered to ensure the successful execution of the measures outlined in the Fiscal Plan and key internal projects within the organization.
- **Emergency response plan and climate risk preparedness:** update PRASA's Emergency Response Plan complying with AWIA and ensure findings are integrated across the organization and specifically into the CIP.
- **10-year Master Plan:** update PRASA's 10-year plan. Said plan is to be developed with results from the 2020 US Census and will provide a long-term roadmap to transform PRASA's system into a simpler, safer, operationally efficient, and financially sustainable system and serve to consolidate recommendations from other plans and strategies (e.g., Fiscal Plan, Emergency Response Plans, Climate Change Adaptability Plan).
- **Asset management and maintenance:** properly track and monitor the condition of all PRASA assets and revamp maintenance program from primarily corrective to a more balanced target that promotes higher preventative maintenance practices.
- **Water availability increase:** implement a dredging program to increase the capacity on PRASA's reservoirs to manage drought period, thus minimizing the need of water rationing.
- **Utility Digitalization:** Continue searching for innovation opportunities throughout PRASA's operations and leverage information technology as a key tool to the successful implementation and monitoring of most of the Authority initiatives.

The potential financial impact, if any, of these measures has not been included in the financial projections presented herein.

3.3.1 Interagency debt settlement

PRASA is constantly engaged in scrutinizing PREPA’s invoices for immediate resolution on disputed metering consumption. However, PRASA has submitted to PREPA a series of claims, on metering inaccuracies and other matters, that have resulted in a disputed debt. The disputed outstanding balances due to PREPA are estimated at approximately \$54 million⁵⁹ and arise from multiple claims dating back to the 2017 hurricanes and before.

As of April 30, 2021 (FY2021), PREPA’s records indicate that PRASA has an outstanding debt of \$77 million including current billings and the unaccounted amounts in dispute. Notwithstanding multiple efforts to renegotiate, PREPA and PRASA have failed to reach a final settlement. As a result of these delays, there are material variances in what PRASA estimates as their PREPA accounts payable versus what PREPA reports as due by PRASA. Therefore, given PRASA’s improved financial condition, the agencies shall undertake the necessary steps in FY2022 to reengage negotiations and use any available legal remedy to settle the matter.

In line with public policy set forth under Act 22 of 2016, promoting reconciliation processes on interagency debt, the agencies at play PREPA and PRASA ought to pursue binding negotiations or an arbitration procedure. Exhibit 3-24 outlines the key action items for successfully settling disputed amounts in FY2022.

EXHIBIT 3-24: ACTION PLAN FOR INTERAGENCY DEBT SETTLEMENT

<u>Action items</u>	<u>Deadline</u>	<u>Owner</u>
Re-engage PREPA in accounts payable negotiations with the intention of settling disputed amounts independently (i.e., without any third-party) and agreeing to a payment plan	July 15, 2021	Executive President
If independent settlement fails, then PRASA must pursue alternate resolution options by submitting to PREPA a draft agreement to enter a voluntary arbitration process to promptly settle disputed amounts*	September 1, 2021	PMO Steering Committee
Execute voluntary arbitration agreement between PRASA and PREPA	November 30, 2021	PMO Steering Committee
Finalize arbitration process and issuance of award included in the arbitration agreement	August 15, 2022	PMO Steering Committee

**contingent upon agreement on July 15, 2021*

3.3.2 PMO Execution

⁵⁹ Balance of \$54 million as of Q3 FY2021 is composed of \$33 million in disputed amounts not agreed by PRASA and another \$21 million subject to execution of a memorandum of understanding (MOU) by PREPA.

PRASA will set up its PMO – backed by leadership’s support to uphold its autonomy – to carry out its functions effectively throughout the organization. The PMO, under the purview of the Vice President of Strategic & Corporate Planning, serves as a key component for the implementation and monitoring of Fiscal Plan measures. Key responsibilities are summarized in Exhibit 3-25.

EXHIBIT 3-25 RESPONSIBILITIES OF THE PMO

PMO roles	PMO responsibilities
Strategic business planning	1 Evaluate corporate risks and provide guidance to project teams
	2 Develop departmental strategies aligned with PRASA's Fiscal and Strategic Plans
	3 Develop and launch new transformational initiatives
Initiative implementation	4 Direct initiative execution
	5 Support project teams with guidance and alignment
	6 Ensure alignment across departmental stakeholders, goals, and objectives to support project teams
	7 Problem solve and escalate program level bottlenecks, risks, issues, and interdependencies
Transparency, control, and accountability	8 Ensure standardization and tracking of project documentation
	9 Monitor progress and overall performance with a clear set of KPIs and milestones
	10 Provide progress updates and escalate issues to different governance boards

The PMO governance and structure is shown in Exhibit 3-26. It promotes executive sponsorship by strategically assigning each measure to an executive officer. In turn, each executive officer assigns a project manager (PM) to oversee the measure, or the projects created underneath it. The PM develops a Project Committee with project measures led by their Direct Reports. The PM monitors the progress of individual projects and measures within their purview, and in turn provides visibility to the other Steering Committee Members, ensuring the alignment of objectives across the organization. A detailed breakdown of structure and responsibilities is below:

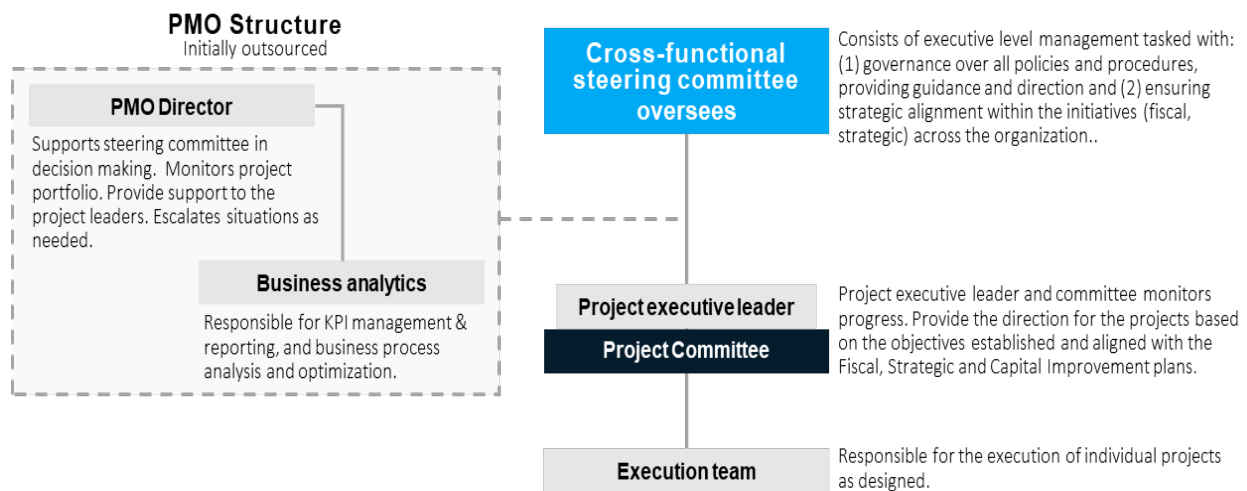
- Each PM must participate in the department’s Project Committee
- In specific cases, the Project Committee Lead (member of the Steering Committee) may be the PM of an individual project
- The Project Committee must provide alignment and visibility across the specific executive organization
- The Steering Committee must provide alignment and visibility across the organization

The PMO Director’s role is to coordinate efforts across Project Managers and Project Committees (or Sub Committees), provide necessary support to them, monitor, and report on progress, and escalate decisions and issues to the Cross-Functional Steering Committee as needed.

The Cross-Functional Steering Committee is chaired by the Executive President and is composed of the Executive Officers and Project Committee Leaders. The PMO Director serves as the Committee Coordinator. The Steering Committee is responsible for monitoring Fiscal Plan progress, ensuring alignment across all plans and priorities, and providing oversight, guidance, and direction to ensure the goals of the plans are met in a timely, efficient, and cost-effective manner.

The PMO Director and its team, in conjunction with Project Committee Leaders, must define key performance indicators (KPIs) and monitor these to ensure the objectives are being met and their performance is optimal. Throughout the life of the projects, based on actual results, adjustments to goals might be necessary, subject to approval from the initiative’s Steering Committee. In turn, each initiative’s leader must be accountable for any deviation and is monitored by the Steering Committee.

EXHIBIT 3-26: PMO STRUCTURE



PRASA’s PMO structure is currently in effect and tasked with critical projects. However, some elements that are critical to effective and efficient operations still need to be implemented (e.g., permanent PMO Director). PRASA has implemented several elements for the efficient implementation of its initiatives such as defining measures owners, creating project committees and execution teams, setting meeting, and reporting cadences, and establishing KPIs for the measures and underlying projects.

A PMO Director is yet to be assigned and the projects are now under the responsibility of each project manager under the guidance of the defined Steering Committee which meets weekly to follow up on each of the initiatives included in the Fiscal Plan as well as other Authority’s internal initiatives. Exhibit 3-27 outlines the key action items for successful and timely delivery of this measure.

EXHIBIT 3-27: ACTION PLAN FOR PMO EXECUTION

Action items	Deadline	Owner
Complete ongoing PMO structure assessment	September 30, 2021	VP of Strategic Planning
Appoint permanent PMO Director to support and provide feedback on structural developments	November 15, 2021	VP of Strategic Planning
Submit final PMO structure, processes, roles and responsibilities to the Oversight Board	January 17, 2022	VP of Strategic Planning
Implement findings on PMO structure assessment	March 15, 2022	VP of Strategic Planning

3.3.3 Emergency Response Plans and Climate Risk Preparedness

Puerto Rico faces significant risk from natural disasters (e.g., droughts, earthquakes, and hurricanes) and events outside of its control (e.g., COVID-19 pandemic) that can threaten its ability to provide safe, reliable, and affordable water and wastewater treatment services.

Section 2013 of America’s Water Infrastructure Act of 2018 (“AWIA”) requires all community water systems that serve more than 3,300 people to complete a risk and resilience assessment (“RRAs”) and emergency response plans (“ERPs”) for all hazards and threats beyond terrorism.

After the RRAs are finalized, ERPs should be developed to be define, amongst others:

- Strategies and resources to improve system resilience, including physical & cybersecurity;
- Plans, actions, procedures, & equipment to be utilized & lessen the impact of malevolent acts or natural hazards;
- Actions/procedures/equipment that can significantly lessen the impact of a malevolent act or natural hazard on the public health and the safety/supply of drinking water; and
- Strategies that can be used to aid in the detection of malevolent acts or natural hazards that threaten the security or resilience of the System.

The final objective of this measure is to incorporate the plans into PRASA’s planning, procedures, and decision-making to ensure continual improvement of the utility safety and reliability in the face of a changing threat environment. Particularly, it should ensure the recommendations from these plans are incorporated into the CIP based on funding availability.

After completing the RRAs and ERPs for the large systems (serving a population over 100,000 people) and the RRAs for medium systems (serving a population from 50,000 to 99,999 people), the Authority is now in the process of updating its RRAs for small systems and ERPs for medium systems by June 30, 2021 to comply with the AWIA due dates. The ERPs for small systems are expected to be completed by December 31, 2021. Exhibit 3-28 outlines the timeline for completing its RRA and ERPs.

EXHIBIT 3-28: ACTION PLAN FOR EMERGENCY RESPONSE PLANS AND CLIMATE RISK PREPAREDNESS MEASURE

<u>Action items</u>	<u>Deadline</u>	<u>Owner</u>
Update and submit RRAs to EPA	June 30, 2021	VP of Operations
Complete and submit ERPs to EPA	December 31, 2021	VP of Operations
Submit key findings to Oversight Board	February 15, 2022	VP of Operations

3.3.4 10-year Master Plan

Every ten years, using the data published in the United States Census, PRASA develops its Water and Wastewater Master Plan (Master Plan). The current Master Plan was last completed in 2010 and then revised in 2014 to account for adjusted population projections.⁶⁰

The 2020 Master Plan must focus on achieving long-term structural integrity, ensuring clean, affordable, and safe water and wastewater provision for the island, while ensuring fiscal responsibility and operational sustainability. As part of the plan, the Authority must create a roadmap for transforming Puerto Rico’s water and wastewater infrastructure from a complex, expensive, and highly vulnerable system to a simpler, safer, resilient, operationally efficient, and financially viable system.

The new 2020 Master Plan must also incorporate the recommendations of the Fiscal Plan, Emergency Response Plans, the Climate Change Adaptation Plan, and other inputs that have long-term implications on the System, including the impact of the recovery funds obligated by FEMA.

The Master Plan must also provide PRASA with an updated prioritization tool to help determine the order of projects in the CIP. The prioritization tool must establish the guidelines for cost-benefit (or value engineering) procedures for projects with specific attributes; particularly those with greater complexity and/or significant cost. Selection criteria for significant projects must be viewed through the lens of lifecycle costs and operational efficiencies, and any potential to generate revenues. Accordingly, PRASA’s CIP projects must be developed in accordance with the Master Plan and the CIP must be constantly updated to align with the System needs.

Exhibit 3-29 outlines the key action items for successful and timely delivery of this measure. However, PRASA’s ability to complete the plan in 2022 will be contingent on the availability of 2020 US Census data.

⁶⁰ Population projection adjustments provided in 2013 by the Puerto Rico Planning Board reflected a reduction in population, as opposed to the data from the 2010 Census which showed an increase, which is attributed in part to migration trends from Puerto Rico to the continental United States.

EXHIBIT 3-29: ACTION PLAN FOR MASTER PLAN MEASURE

Action items	Deadline	Owner
Finalize selection and contracting with the preferred proponent to develop the Master Plan	July 31, 2021	Infrastructure
Implement CIP tracking tool	September 30, 2021	Infrastructure
Implement the Project Management Information System (PMIS)	November 15, 2021	Infrastructure
Complete the 2020 Master Plan including detailed prioritization guidelines	July 31, 2022	Infrastructure
Incorporate findings from Master Plan into CIP	December 31, 2022	Infrastructure

3.3.5 Asset Management and Maintenance

PRASA developed a more formal and established Asset Management Program in FY2021 to properly track and monitor the condition of all PRASA assets. PRASA’s goal is to shift over time from its current, primarily corrective maintenance strategy to a program that focuses more on systematic, data-driven, preventive maintenance. This focus would help prolong asset life, reduce operating and capital expenditures, improve security and safety, and shorten response time to maintenance and repair needs.

3.3.5.1 Recent achievements

PRASA has collaborated with a consulting partner that specialized in process improvements and project management to conduct a program assessment with the following scope:

- i. review the organizational structure of the Maintenance Department and propose improvements focused on achieving better service and tighter control mechanisms.
- ii. review of Maintenance Department procedures to ensure roles and responsibilities are clear and that actual processes are aligned with those documented,
- iii. identify gaps between the SAP system equipment lists and the reality in the facilities, and
- iv. properly identify physical assets under the asset management program.

These elements of the assessment produced a series of improvement efforts, including:

- The current updated structure of the Maintenance Department incorporating
 - A new Planning Center of Excellence focused on improved planning processes and external services and supplies monitoring and coordination.
 - A systematic approach to project portfolio management and training compliance.

- An improved cycle time tracking system by maintenance activity with clear differentiation between corrective and preventative work.
- A master planning schedule process focused on preventive maintenance plans agreed upon qualified technical resources.
- New and updated Maintenance Department procedures with clear roles and responsibilities in compliance with the operation,
- Redesigned KPIs for asset management and maintenance and improved visualization tools and automation.

While the initiatives set forth above provide a roadmap towards achieving an optimal Asset Management Program, the Authority recognizes these efforts will need to be complemented with further enhancements. In addition, the Authority faces significant constraints, including a lack of adequate and competent human resources and financial funding, which hinder the Authority's ability to maximize the benefits of its maintenance program and the realization of tangible improvements in the System's condition. This was confirmed by the consultants' observations.

3.3.5.2 Next steps: Predictive Maintenance Program

PRASA is in the process of re-launching its predictive maintenance program aimed at anticipating the needs of the System by proactively monitoring asset condition and equipment wear during the operational cycle. This will allow PRASA's maintenance teams to adjust or intervene prior to reaching equipment failure. However, the necessary data to determine the critical assets' needs will be progressively gathered in order to establish the main failures modes (design related, operations related, maintenance related, or others) and address the underlying causes behind their failure. Such predictive (or preventative) maintenance approach will allow for reductions in the maintenance frequencies, increase the mean time between failure (MTBF) in PRASA's assets, and reduce maintenance and repair costs, thereby increasing the reliability of service levels (as a result of reduced service interruptions).

The efficiency of the predictive program will be measured using new metrics fed from SAP data on a monthly basis with weekly monitoring. Adequate metrics coupled with up-to-date cost data will allow the Maintenance Department to make more informed, data-driven decisions on whether to repair or replace an underperforming or failing asset.

Exhibit 3-30 outlines the high-level action plan for successfully delivering this measure.

EXHIBIT 3-30: ACTION PLAN FOR ASSET MANAGEMENT AND MAINTENANCE MEASURE

Action items	Deadline	Owner
Launch a Predictive Maintenance Program	July 31, 2021	Maintenance Director
Develop a written summary of asset management recommendations provided by the most recent subject matter consultant and provide to the Oversight Board	September 30, 2021	Maintenance Director
Define metrics to measure the program's progress including metrics on actual time spent servicing maintenance orders	October 15, 2021	Maintenance Director
Define and incorporate critical assets into such program	December 31, 2021	Maintenance Director
Review the efficiency and progress of the Predictive and overall Asset Management Programs and submit findings to the Oversight Board	February 28, 2022	Maintenance Director
Procure* a consultant to develop a comprehensive, updated, conditions assessment and asset management plan	March 31, 2022	Maintenance Director
Create plan and target for incorporation of condition and performance of each asset in SAP	June 30, 2022	Maintenance Director

**contingent on findings from February 28, 2022 report.*

In the longer term, PRASA expects to develop a full Asset Management Program incorporating the lifecycle assets management into SAP, prioritizing assets under critical condition in the implementation of the preventive and predictive maintenance program.

3.3.6 Improve System Resiliency

One of the most important challenges to achieving a resilient System is the financial capacity to execute the required CIP projects on-time and on-budget. At the same time, these projects must help achieve and maintain financial and operational sustainability, all while ensuring revenue stability and service quality.

Subject to funding availability, PRASA projects to incorporate in its CIP resiliency-improvement projects aimed at:

- Improving water transfer capabilities;
- Relocating Infrastructure in flood zones;
- Removing of key systems from the PREPA grid;
- Incorporating remote operational capabilities, subject to current applicable regulations;
- Improving structural safety of dams and reservoirs; and
- Adding water management measures to pursue water availability and reduce vulnerability to atmospheric events, droughts and other events.

The resiliency projects will be executed only if federal funding is obtained and as long there is enough contracting capacity in Puerto Rico to complete such projects. Therefore, no financial impact was included in the financial projections.

3.3.7 Utility Digitalization

The Authority has been and will remain using digital technologies to modify business processes, culture, and customer experiences aimed at increasing efficiency and reducing costs. The digitalization of PRASA allowed the Authority to successfully address challenges presented by the COVID-19 emergency and the continuity of operations under an environment of limited financial and human resources.

INTEGRA is an ongoing Program for Global Technological Innovation and continuous IT improvements with projects such as:

- SAP / GIS / SCADA / SIM System Integration, which would allow for predictive analytics and increased system visualization improving PRASA’s response time to different situations such as service interruptions.
- Improvement in SCADA data quality, including additional field sensors throughout the system
- Cybersecurity Awareness Program
- Android technology to replace hand-held devices for multiple applications, including customer service and preventive maintenance, and compliance functions
- Process Automation through a Chat Bot program, initially to be implemented in Customer Services, to automatically interact with clients and address their requests and claims.
- Cloud disaster recovery, to protect the Authority’s data and improve resiliency
- Automation and Telemetry projects sponsored by various departments e.g., (operations, preventive maintenance)
- Executive’s KPIs Platform Implementation
- Network Optimization
- Storage & Backup improvements



Also, subject to funding availability, PRASA is analyzing the potential implementation of Water Analytics, which is a tool for predictive analysis which will improve system resiliency and focus on the reduction of NRW in the long term.

3.4 Summary of Proposed Measures

The benefit of the new measures is projected at ~\$1.4 billion during the Fiscal Plan period. A summary of the New Measures projected net benefit is set forth in Table 3-8.

TABLE 3-8: NEW MEASURES PROJECTED BENEFIT⁶¹ (IN \$ MILLIONS)

<i>In \$ Millions</i>	FY2021	FY2022	FY2023	FY2024	FY2025	FY2026	FY21/26
Rate Adjustment	108.4	128.6	144.1	159.6	175.9	193.2	909.9
Government Collections	11.2	1.7	3.5	5.2	7.0	8.8	37.4
Hidden Leaks Adjustment Change	1.2	1.2	1.2	1.2	1.2	1.2	7.2
Disconnection Fee	-	-	1.0	0.8	0.6	0.5	3.0
PreRetirement	7.5	6.7	5.8	4.8	3.7	2.5	31.1
Physical Water Loss Reduction	-	(1.5)	1.1	2.5	4.0	6.0	12.2
Pension Reform	-	-	5.0	5.0	4.9	4.8	19.6
Health Plan Savings	1.6	2.9	3.1	3.2	3.4	3.5	17.6
Organization Optimization	-	0.5	0.9	0.9	0.9	0.9	4.2
Christmas Bonus Elimination	-	3.1	3.1	3.1	3.1	3.1	15.7
Electricity Expense Reduction	-	0.6	1.5	3.2	4.9	7.2	17.4
Chemical Expense Reduction	-	-	1.0	1.0	1.0	1.0	4.1
Federal Funds, Net	20.1	114.6	138.7	66.3	9.6	3.7	352.9
Initiatives Benefit	150.1	258.5	310.1	256.8	220.4	236.5	1,432.5
Impact in ORF and OH	2.2	0.3	1.4	(0.4)	(0.4)	(0.3)	2.7
Initiatives Benefit, Net	152.3	258.8	311.5	256.5	220.0	236.2	1,435.2

3.5 Post-Measures Financial Projections

Implementation of the measures outlined in this Chapter will allow PRASA to improve both its financial and operational position. Accordingly, these measures drive a cumulative surplus of \$6.6 million throughout the Fiscal Plan period which is consistent with PROMESA Section 201(b)1(d).

Furthermore, the 2021 Fiscal Plan does not account for the potential benefit of the Metering Optimization initiative from previous fiscal plans, additional debt reduction opportunities, nor potential debt reserve fund releases. In the eventuality said benefits materialize, these will be incorporated into the Fiscal Plan as information becomes available to determine their impact and viability.

Table 3-9 presents the Post-Measures Financial Projections during the Fiscal Plan period.

⁶¹ \$130M of the projected benefits from the proposed measures consist of measures that have already been implemented.

TABLE 3-9: POST-MEASURES FINANCIAL RESULTS (IN \$ MILLIONS)

<i>In \$ Millions</i>	FY2021	FY2022	FY2023	FY2024	FY2025	FY2026	FY21/26
Authority Revenues	927.2	898.7	893.0	888.5	884.1	880.9	5,372.3
Senior Debt Service	(256.6)	(265.3)	(265.7)	(270.3)	(267.4)	(267.4)	(1,592.7)
Net Operating Expenses	(692.1)	(697.9)	(743.6)	(752.4)	(759.3)	(769.1)	(4,414.3)
Operating Reserve Fund	(36.4)	(2.1)	(6.4)	(2.2)	(1.7)	(2.4)	(51.3)
Capital Improvement Fund	(81.0)	(192.1)	(188.7)	(120.0)	(75.5)	(78.1)	(735.4)
Commonwealth Payment Fund	(7.2)	0.0	0.0	0.0	0.0	0.0	(7.2)
Baseline Financial Result	(146.0)	(258.7)	(311.5)	(256.4)	(219.9)	(236.2)	(1,428.7)
Initiatives Benefit	152.3	258.8	311.5	256.5	220.0	236.2	1,435.2
Deposits to/(Uses from) RSA	6.3	0.0	0.1	0.1	0.1	0.0	6.6

In summary, the projections included herein reflect a balanced budget in all years of the Fiscal Plan period, providing for the elimination of structural deficits as stipulated in PROMESA Section 201(b)1(d).

4 Long-Term Fiscal Responsibility and Operational Sustainability

Since FY2016, PRASA has been able to fund some of its CIP needs with the savings achieved through the implementation of measures included in prior fiscal plans. At the beginning of FY2020, PRASA successfully modified its Federal Debt. Furthermore, in November 2020, the Authority was able to settle a non-secured loan with the GDB Debt Recovery Authority for \$20.5 million resulting in over \$55 million in savings against the claim asserted. Subsequently in December 2020, PRASA was able to issue via a limited offering approximately \$1.4 billion in its 2020 Senior Bonds, achieving \$350 million in total debt service savings.

PRASA currently pays its operating expenses, debt service obligations, and the non-federally funded portion of critical CIP projects with operating revenues. The capital-intensive nature of water utility operations will require restoring access to credit markets at reasonable rates for new borrowings to provide the necessary funding for the balance of its CIP projects over the long term. However, as a result of the recent obligation by FEMA of \$3.7 billion for recovery projects, the need to access the credit markets for CIP financing may not be required in the near-term, placing PRASA in a stable financial situation that allows it to improve the condition of the System and its operations for the benefit of the people of Puerto Rico.

PRASA has defined achieving fiscal responsibility as the ability to:

- Generate sufficient revenue through a rate structure that allows PRASA to provide a safe, affordable, and reliable service; and
- Regain access to the credit markets at reasonable rates while adequately meeting all its financial obligations (i.e., operating expenses, debt service requirements, CIP contributions).

In relation to its capital expenditures PRASA has defined as the goal to internally fund:

- Annual renewal and replacement investments that allow PRASA to maintain the System in adequate operational conditions; and
- At least 50% of the total CIP portfolio on a project basis (excluding projects funded through federal loans or grants such as SRF, RD, and FEMA and extraordinary projects).

PRASA's core goals for self-funding targets are based on industry standard practices and analysis of overall capital portfolio completed by a third party.⁶²

Furthermore, PRASA has made progress addressing its structural deficit. Despite this progress and the added benefit of the funds for recovery projects awarded through FEMA, it has not yet

⁶² Professional Opinion Report: Puerto Rico Aqueduct and Sewer Authority, prepared by Raftelis Financial Consultants, 2016.

regained access to institutional credit markets at reasonable rates in a manner consistent with PROMESA. This fact leaves PRASA with an opportunity to continue refinancing outstanding debt in the near-term. In future years PRASA’s CIP may be partially financed through the issuance of long-term debt, subject to market conditions and need, although no issuances for new money are expected in the near future. This approach will be implemented if it helps to distribute the financial burden of major capital works to customers across a longer time period, thus helping to maintain affordable rates while performing essential work on the System.

4.1 Plan for Maintaining Long-Term Fiscal Responsibility

To maintain long-term financial sustainability, PRASA will seek to implement measures outlined in Chapter 3 to leverage improvements in financial and operational performance and to mitigate future demographic, economic, environmental/climate, and fiscal challenges in the Commonwealth.

PRASA has demonstrated improvements in the main areas of creditworthiness identified by the major rating agencies, such as:

- Financial strength of operations (including liquidity and reserves).
- Strength and independence of rate-setting structure and regulatory compliance.
- Strength and independence of governance.
- Financial and operational disclosure information

However, some areas require further improvements such as the System condition, increasing in operational and system efficiencies and timely and successful implementation of its capital improvement plan. These areas are expected to reflect material improvement in the future as a result of the projected inflow of federal funds and annual appropriations for PRASA’s revenues to cover its CIP needs, allowing for a more robust infrastructure and a more efficient and resilient system.

Table 4-1 sets forth key steps being taken by PRASA that demonstrate its commitment to long-term fiscal responsibility through meaningful and measurable actions.

TABLE 4-1: PLAN TO RESTORE COST-EFFECTIVE CAPITAL MARKET ACCESS

Authority action plan		STATUS
Implementation of Measures in Fiscal Plan	<ul style="list-style-type: none"> • Ensure implementation of measures discussed in Chapter 3 through the management and oversight of the Steering Committee 	In progress
System health, service area, and economy	<ul style="list-style-type: none"> • Ensure long-term planning by updating the Authority’s Master Plan, ten-year CIP, and Emergency Response Plan 	In progress
Financial strength of operations	<ul style="list-style-type: none"> • Update budgeting efforts to comply with or exceed covenant requirements, particularly covenants that consider all expenses (including operating revenue deposits to the CIP Fund) • Publish long-term financial projections (Fiscal Plans) 	Implemented

Authority action plan		STATUS
	<ul style="list-style-type: none"> • Quarterly interim financial results and key operational information • Implement current plan to fund operating reserve requirement with at least 90 days of cash on hand 	
Rate setting process and regulatory compliance	<ul style="list-style-type: none"> • Establish systematic annual rate increases leveraging available studies, economic factors, and feedback from key stakeholders • Establish a cadence conducting necessary studies and analysis for future rate proceedings and transparency on findings • Ensure affordability is taken into consideration for any change to the rate structure and adjustments 	In progress
Strength and independence of governance	<ul style="list-style-type: none"> • Limit turnover of key decision makers by continuing current resources succession process • Act No. 68-2016 sets the requirements for (i) a diversified, independent, and professionalized board and (ii) Executive Officers appointment by the Governing Board complying with specific requirements and (iii) specific terms for non-ex-officio Governing Board members and key executive officers. 	Implemented
Operational and financial management assessments	<ul style="list-style-type: none"> • Develop and implement disclosure best practices, including: <ul style="list-style-type: none"> ○ Operational and financial measure tracking ○ Timely publication of audited financial statements ○ Quarterly interim operating reports ○ Consulting engineer reports • Provide progress reports on Fiscal Plan implementation (detailed in Chapter 5, “Reporting requirements”) 	In progress
CIP requirements	<ul style="list-style-type: none"> • Maximize FEMA fund proceeds for system recovery and reconstruction in a manner consistent with best industry practices. • Maximize use of lower cost funding resources such as SRF program or RD bonds by ensuring project compliance with these programs • Ensure efficient execution of capital projects through capital delivery optimization including (but not limited to) performance tracking, PMC support, establishing portfolio-wide project prioritization criteria, and schedule compliance & execution 	In progress

4.2 Debt Sustainability Analysis

A debt sustainability analysis (“DSA”) is intended to provide a framework for assessing PRASA’s long-term capacity to pay debt service under the terms of the MAT. PRASA’s debt levels need to be consistent with industry standards in order to ensure credit market access for future new money borrowings to fund ongoing infrastructure investment, and/or refunding opportunities for savings. PRASA is focused on executing a set of financial, operational, and non-financial measures that will allow the Authority to regain institutional credit market access at reasonable rates. The following debt sustainability analysis describes PRASA’s capacity to pay current and projected debt within the constraints of the MAT.

The DSA includes implied debt capacity based on a range of interest rates, cash flow availability, and assumed 30-year term and level debt service. The level of sustainable debt for PRASA, as shown in Table 4-2 below, ranges from \$2.8 billion to \$6.9 billion, inclusive of existing outstanding bonded debt, depending on the assumed borrowing rate and the level of post-measures cash flow available for debt service.

TABLE 4-2: SENSITIVITY ANALYSIS – IMPLIED DEBT CAPACITY (IN \$ MILLIONS)

Illustrative Cash Flow Available for Debt Service		\$200	\$250	\$300	\$350	\$400
PV Rate	4.00%	\$3,458	\$4,323	\$5,188	\$6,052	\$6,917
	5.00%	\$3,074	\$3,843	\$4,612	\$5,380	\$6,149
	6.00%	\$2,753	\$3,441	\$4,129	\$4,818	\$5,506

5 Reporting Requirements

As part of monitoring progress of the 2021 Fiscal Plan measures, PRASA is required to submit periodic reports to FOMB and, on occasions, to the public. Table 5-1 lists these reports and their frequency.

TABLE 5-1: REPORTS TO BE PRESENTED

Report type	Detail	FOMB reporting cadence	Public reporting
Budget to actuals (B2A)	Tracking of budgeted to actual spend per budget certification agreement with FOMB, including: <ul style="list-style-type: none"> • Explanation for material variances for YTD (>10% and >\$1 million or > USD 10 million) • Accounts receivable by type of client (residential, commercial, industrial, and governmental) • Schedule with amounts owed by each government client 	<ul style="list-style-type: none"> • Monthly reporting after budget is certified • Quarterly 203 reporting after budget is certified 	<ul style="list-style-type: none"> • Quarterly
Liquidity	Cash flow report, including: <ul style="list-style-type: none"> • Monthly and weekly view of actual and projected cash flows for the FY, including Current Expense Fund beginning and final balances • Total entity cash balance by account, available upon FOMB request 	<ul style="list-style-type: none"> • Monthly 	<ul style="list-style-type: none"> • Monthly (cash flow actuals)
Measures	Fiscal Plan measures status, schedule, and fiscal impact	<ul style="list-style-type: none"> • Monthly • Quarterly progress reports on NRW-related activities: Physical Water Loss Reduction & Metering Optimization 	<ul style="list-style-type: none"> • N/A

Report type	Detail	FOMB reporting cadence	Public reporting
		<ul style="list-style-type: none"> Quarterly progress reports for Asset Management measure. 	
CIP: implementation plan tracking	CIP monthly progress reports, including schedule performance index, cost performance index, and actual spend to date	<ul style="list-style-type: none"> Project-level reporting using <i>CIP tracking tool</i>: Monthly 	<ul style="list-style-type: none"> N/A
Water quality KPIs and environmental compliance	<ul style="list-style-type: none"> Summary of KPI dashboard, including monitoring and health-based violations Detailed compliance reports, by plant, available upon FOMB request 	<ul style="list-style-type: none"> Quarterly 	<ul style="list-style-type: none"> Annual Consumer Confidence Report
Water Balance	<p>Publish water balance in accordance with AWWA M36 standards to summarize the following components:</p> <ul style="list-style-type: none"> Water supply, Water consumption, and Water losses 	<ul style="list-style-type: none"> Monthly summary submitted along with B2A Annual 	<ul style="list-style-type: none"> Annual
FEMA	<p>Provide updates on FEMA Federal funding, particularly on the following:</p> <ul style="list-style-type: none"> status on FAASSt workplan progress at project level summary on YTD FEMA disbursements per funding type (i.e., emergency, 428, 406, 404, cost share portion) flash report on spending and reimbursement activities 	<ul style="list-style-type: none"> Quarterly FAASSt status and summary of disbursement Weekly flash report 	<ul style="list-style-type: none"> Quarterly
Others	<p>Additional reporting on:</p> <ul style="list-style-type: none"> Status on CIP projects from other portfolios 	<ul style="list-style-type: none"> Monthly summary submitted along with B2As 	<ul style="list-style-type: none"> N/A

Report type	Detail	FOMB reporting cadence	Public reporting
	<ul style="list-style-type: none"> • Government collections and payment plans (top-15) • Monthly headcount rollforward and by function • Monthly profit and loss statement • Collections by customer segment 		

5.1 Monthly KPIs for Measures

In order to ensure appropriate tracking of all measures within the Fiscal Plan, PRASA must continue to track the Financial Impact of the following implemented measures in a monthly cadence:

- Government Account Collections
- Disconnection Cost Recovery
- Leaks Adjustment Policy
- Pre-retirement Program

For new measures, the following Table 5-2 identifies the critical KPIs to be tracked monthly and start date of tracking such measures. All start dates are assumed to be July 15th of listed Fiscal Year unless otherwise listed or modified by FOMB through prior authorization.

TABLE 5-2: NEW MEASURE KPIs

Measure	KPI	Start Date
Rate Adjustment	Financial Impact of Measure	FY2022
Metering Optimization	Financial Impact of Measure	FY2022
	Actual collection rate when compared with the established billing budget	FY2023
	Percent billing adjustments	FY2023
	Percentage of bills generated with actual readings (not estimated)	FY2023
Chemical Expense Reduction	Financial Impact of Measure	FY2023
	Chemical purchases (spend and volume) at all facilities by chemical	FY2022
Pension Reform	Financial Impact of Measure	FY2023

Measure	KPI	Start Date
Christmas Bonus Elimination	Financial Impact of Measure	FY2022
Healthcare savings	Financial Impact of Measure	FY2022
Headcount cap	Financial Impact of Measure	FY2022
Electricity Expense Reduction	Track energy consumption vs annual targets at a regional level	FY2022
Physical Water Loss Reduction- Overall	Real Losses (gallons / serv conn / day / PSI)	FY2022
	Infrastructure Leakage Index	FY2022
Physical Water Loss Reduction- Master Meters	Number of visited facilities	FY2022
	Estimated volume (MGDs) produced per facility	FY2022
	Measured volume (MGDs) produced per facility	FY2022
	Master Meters needed to be replaced and number replaced/installed	FY2022
	Projected Master Meter investment and amount invested to date	FY2022
	Water production measured (as % of total water produced)	FY2022
Physical Water Loss Reduction- Pressure Management	Number of pressure zones visited each month	FY2022
	Number of valves to be installed and number installed each month	FY2022
	Number of other components to be installed and number installed each month	FY2022
Physical Water Loss Reduction- Leaks Reduction	Unreported Leaks Pre-Located	FY2022
	Average Leaks per Mile	FY2022
	Average Pressure Zones Visited per Region	FY2022
	Unreported Leaks Pinpointed	FY2022
	Average MGDs Loss per Pinpointed Leaks	FY2022
	Average Leak Cost per Day (Leakage Cost)	FY2022
	Leaks Mean Time to Repair	FY2022
	Percentage (%) of Leaks Repaired	FY2022
	Average MGDs Saved	FY2022
	Number of tanks inspected	FY2022
Number of tanks repaired	FY2022	

Measure	KPI	Start Date
CIP tracking	Cost Performance Index	FY2022
	Schedule Performance Index	FY2022
New Federal Funds	Financial Impact of Measure	FY2022

6 Risks and Mitigating Strategies

As a large and complex utility operating in an uncertain environment, PRASA’s implementation of its key measures is subject to risks and unforeseen events, many of which are outside of the Authority’s control. Table 6-1 summarizes an analysis of the key risks that have been identified as having potential to impact or delay PRASA’s 2021 Fiscal Plan implementation with corresponding mitigation strategies. However, it is worth noting that this outlook is based on the best information available as of the date of creation of the 2021 Fiscal Plan, and over time PRASA may become aware of additional existing risks or new risks may arise that could significantly affect the Authority’s financial and/or operational performance, including actions by Local or Federal Government and US Congress.

TABLE 6-1: RISKS TO FISCAL PLAN IMPLEMENTATION AND MITIGATING STRATEGIES

Risk category	Potential impacts	Mitigating Strategies
Natural disasters	Catastrophic natural disasters – Events such as droughts, floods, pandemics, hurricanes, and earthquakes could have significant financial and operational impacts, including system failures, water rationing, and environmental noncompliance. The severity of some of these events and their impacts on the Authority may be exacerbated over time due to climate change.	<ul style="list-style-type: none"> • Develop Emergency Response Plans and update Climate Change Vulnerability Study and Adaption Plan; ensure plans are integrated into operations and capital requirements are integrated in the 2020 Master Plan. • Ensure operating reserve fund has at least 90 days of cash to use for emergency operational funding.
Revenue risks	Lowered collections recovery – Collections rates may be lower than forecasted due to overall inability of customers to pay for services, resulting in decreased revenues. The economic uncertainty caused by COVID-19 has increased the likelihood of such an event materializing. Furthermore, Act-39 2020 suspended the disconnection of accounts with delinquent account balances.	<ul style="list-style-type: none"> • Ensure operating reserve fund has at least 90 days of cash to use for emergency operational funding. • Increase and enhance digital payment options and collection capabilities. • Offer payment plans to qualifying customers.

Risk category	Potential impacts	Mitigating Strategies
	<p>Decreased demand – Decreases in population and reduced consumption among customers are expected to reduce revenues for FY2022-FY2026 time period. The economic downturn caused by COVID-19 may further affect revenue projections.</p>	<ul style="list-style-type: none"> • The selected meter replacement program should focus on increasing the precision of water consumption and therefore billings.
<p>Expenditures and Regulatory Risks</p>	<p>Major change in system performance – A decrease in system performance (e.g., major infrastructure failure, water quality crisis) due to deteriorating system conditions may significantly increase operating and capital expenses to address issues.</p>	<ul style="list-style-type: none"> • Ensure operating reserve requirement funding has at least 90 days of cash to use for emergency operational funding. • Ensure CIF is funded to appropriate levels to address CIP project outlay and potential emergency projects not identified at time of Fiscal Plan. • Maximize federal funding to materially improve the system condition, rebuilding it to industry standards.
	<p>Changes in payroll legislation – Payroll expenses account for over 40% of projected operating expenses. Changes in payroll legislation, including potential changes to the federal minimum salary, may impact PRASA’s largest cost projections and the execution of right-sizing measures.</p>	<ul style="list-style-type: none"> • Payroll expense projections were calculated applying Act No. 26-2017, protecting PRASA from unforeseen incremental labor costs. • Personnel needs and salaries study under development shall assist in the assessment on the appropriate levels of headcount and its corresponding costs.
	<p>Changes in electricity rate costs – Electricity accounts for 18% of projected operating expenses in FY2021. Variations of \$0.01/kWh can lead to annual expense variances of \$6.5 million.</p>	<ul style="list-style-type: none"> • Closely monitor the implemented energy efficiency and electricity consumption reduction measures from prior Fiscal Plans. • Seek for renewable energy alternatives as described in this Fiscal Plan.

Risk category	Potential impacts	Mitigating Strategies
	<p>Availability of contracted resources to execute the CIP as planned – The recent inflow of FEMA and other federal funds in Puerto Rico will create an increased demand of contractors and materials which will create challenges to execute the CIP as planned, regarding both timing and cost. Additionally, changes to salaries in the construction industry may further increase the CIP projected costs and therefore create incremental financing needs.</p>	<ul style="list-style-type: none"> • Attract contractors to PRASA projects through timely payment and long-term contracting. • Close monitoring of CIP implementation and timely correction of deviation when possible. • Use of CIP Tracking tool and Project Management tool. • Flexible CIP which should be revised frequently to reflect material changes to the planned CIP to adjust timing or the required needs of funding, when applicable.
	<p>More stringent environmental regulations – Changes in environmental legislation (e.g., more stringent drinking water standards) may increase overall expenses for chemical and lab usage, in addition to possible requirement of mandated project costs.</p>	<ul style="list-style-type: none"> • Implement chemical consumption and purchasing optimization measures to lower the variable cost of additional supplies needed. • Implement programs to improve water supply quality.
<p>Financing Risks</p>	<p>Reduction in federal funds availability or timing delays – this would require additional self-funding for the CIP or the need of interim financing to cover any delays in the federal funding disbursement process</p>	<ul style="list-style-type: none"> • Maintain a healthy balance for CIP to allow for the required payments to contractors prior to the federal funds receipt. • New office to manage federal funds requests and documentation properly and efficiently. • Potentially, optimize debt profile through refunding and other private placement opportunities.

Risk category	Potential impacts	Mitigating Strategies
Operational Risks	Management capability – Lack of capability to execute and fully deliver on assigned measures in the Fiscal Plan. If benefits are not achieved and/or fall short of targets that could negatively affect the financial projections included herein.	<ul style="list-style-type: none"> • Ensure PMO has a clear oversight role over Fiscal Plan implementation and the ability to escalate problems to the appropriate decision-making parties. • Ensure continuous and consistent monitoring of KPIs and milestones for all measures identified in the Fiscal Plan, so that the PMO has the ability to measure and report and progress, identify roadblocks, and address them in a timely manner.
	Coordination gaps – Some measures require coordination across many functional groups, agencies, and stakeholders. There is a risk that a lack of coordination prevents the full implementation of measures in a timely manner, which would delay the Fiscal Plan objectives of long-term financial and operational sustainability.	<ul style="list-style-type: none"> • Assign clear owners for each measure and establish an operating model for cross-department collaborations under the PMO Office. • Maintain fluid and continued communication with federal and local agencies, mostly FEMA, EPA, DOH, PRDNER and RD.
	Workforce availability – Challenges on recruiting personnel due to the lack of resources and salaries level expectancy at PRASA can impact PRASA’s operations and the provision of an adequate service.	<ul style="list-style-type: none"> • Perform an organizational capacity analysis to adapt headcount to optimal levels covered under the rightsizing study discussed in Chapter 3. • Compensation analysis to allow for competitive salaries to reduce employee’s turnover and improve competitiveness of PRASA in the labor market.

7 Federal Funds for Disaster Recovery and Resiliency




In addition to SRF and RD funds available for qualifying projects, PRASA qualifies for additional funds to address disaster’s recovery.



In order to address the damages to PRASA’s system and the impact to its operations as a result of the 2017 hurricanes, as well as recent earthquakes, and the pandemic, the Authority qualified for federal funding support under various programs further described in this Chapter.

7.1 Disaster Recovery Programs

PRASA’s main sources of federal funding identified for disaster recovery are: 1) FEMA’s Public Assistance Program; and 2) the federal Housing and Urban Development (HUD) Community Development Block Grant – Disaster Recovery (CDBG-DR) Program. A brief description is included below; details of the funding procedures and amounts disbursed to date are provided in the following sections.

FEMA’s Program: Under the Stafford Act, PRASA receives all FEMA funds through COR3, the officially designated grantee of the Government under the Stafford Act. COR3 is a division of the P3 Authority and was created to ensure adequate management and use of federal funds for Puerto Rico’s recovery and reconstruction. FEMA’s Public Assistance Program addresses both emergency work (e.g., debris removal and emergency protective measures and expenses), and permanent work (e.g., reconstruction to current industry standards of the water and wastewater system to address damages resulting from the disasters). In addition, FEMA’s Hazard Mitigation Program address funding to improve resiliency for facilities not damaged by the disaster.

Type of works	Relevant legislation
 Permanent works	<ul style="list-style-type: none"> Section 428 of SA¹ (Cat. C-G)
 Hazard mitigation	<ul style="list-style-type: none"> Section 406 SA Section 404 SA (Hazard Mitigation Grant Program) Section 20601 of 2018 Bipartisan Budget Act
 Emergency works	<ul style="list-style-type: none"> PAPPG² follows SA 44 CFR Part 206 (Cat. A&B)

 Permanent works and hazard mitigation projects may contain uncovered synergies for joint development. Pending confirmation on which projects qualify for the respective financing.
 Emergency works have been performed by PRASA and are awaiting FEMA reimbursements, these do not qualify for funding under Sec. 428 of SA.

HUD CDBG-DR Programs: The Community Development Block Grant – Disaster Recovery (CDBG-DR) Program provides annual grants on a formula basis to states, cities, and counties to develop viable urban communities by providing decent housing and a suitable living environment, and by expanding economic opportunities, principally for low- and moderate-income persons. The program is authorized under Title 1 of the Housing and Community Development Act of 1974, Public Law 93-383, as amended 42 U.S.C. 5301 et seq. The Puerto Rico Department of Housing is the designated grantee of CDBG-DR funds, while PRASA is the subrecipient, meaning that funds are managed through HUD.

7.2 FEMA's Public Assistance and Hazard Mitigation Programs

7.2.1 Emergency Works

Under the Public Assistance Program, FEMA is authorized to provide funding for Emergency Work⁶³, including emergency protective measures and debris removal. Emergency Works are performed immediately after the disaster and should:

- Save lives;
- Protect public health and safety;
- Protect improved property; or
- Eliminate or lessen an immediate threat of additional damage.

It involves two categories of work that address immediate threats: Category A for debris removal, and Category B for emergency protective measures.

7.2.2 Permanent Works (Section 428 SA)

PRASA receives reimbursement for permanent work through FEMA's 428 Alternative Procedures Program. Funding for permanent work is applicable to projects related to restoring facilities through repair or restoration to pre-disaster design, function, and capacity in accordance with codes or standards. Under the Alternative Procedures Program, FEMA will fund all large permanent work projects based on fixed cost estimates.

Specifically related to damages caused by the 2017 Hurricanes, the 2018 Bipartisan Budget Act (BBA) allows FEMA to provide assistance to restore disaster-damaged facilities or systems that provide critical services to industry standards without regard to pre-disaster condition.

FEMA may approve projects developed based on codes and standards which are widely accepted and used, or best practices that are generally accepted by experts in the industry as long as standards are reasonable. BBA allows for the repair or replacement of components not damaged by the disaster if the work is required to restore the critical service function of the facility or system

⁶³ 44 CFR § 206.201(b).

to an approved industry standard or standards. The pre-disaster condition of damaged or undamaged components is not a factor in determining the eligible scope of work.

PRASA, FEMA, and COR3 have been working collaboratively for many months to adequately define the full need of reconstruction projects after the 2017 Hurricanes, size the cost estimates, and determine an efficient way of disbursing and utilizing pertinent federal funding to reconstruct the System. The procedures for obligating PRASA permanent projects have been agreed between PRASA, COR3, and FEMA pursuant to the FEMA Advanced Award Strategy Initiative (FAAST) and FEMA has obligated a net \$3.66 billion for PRASA's permanent work projects.

7.2.3 Disaster Related Hazard Mitigation (Section 406 SA)

Section 406 mitigation measures are funded under the Public Assistance program and provides for funding sources for cost-effective measures that would reduce or eliminate the threat of future similar damage to a facility damaged during a disaster. The 406 funding provides discretionary authority to fund mitigation measures in conjunction with the repair of the disaster-damaged facilities, so is limited to the eligible damaged facilities. Section 406 funds should be applied to work on the disaster-damaged facilities when the mitigation measure directly reduces the potential of future, similar disaster, damages to the eligible facility.

7.2.4 Non-Disaster Related Hazard Mitigation (Section 404 SA)

Funds under Section 404 of the Stafford Act can be used to provide protection to undamaged parts of a facility or to prevent or reduce damages caused by future disasters. Section 404 mitigation measures are funded under the Hazard Mitigation Grant Program (HMGP).

The State receives a percentage of the total federal share of the declared disaster damage amount (20%), which it uses to fund projects anywhere in the State, regardless of where the declared disaster occurred or the disaster type.

Funds under Section 404 grant may be used in conjunction with 406 mitigation funds to bring an entire facility to a higher level of disaster resistance, when only portions of the facility were damaged by the current disaster event.

PRASA has submitted a total five HMGP 404 Applications with a total requested assistance of \$631.7 million.

7.3 HUD CDBG Programs

HUD provides flexible grants to help cities, counties, territories and states to recover from Presidentially declared disasters, especially in low-income areas, subject to the availability of supplemental appropriations. In response to Presidentially declared disasters, Congress may appropriate additional funding for the Community Development Block Grant (CDBG) Program as Disaster Recovery grants to rebuild the affected areas and provide money to start the recovery process. Since CDBG Disaster Recovery (CDBG-DR) assistance may fund a broad range of

recovery activities, HUD can help communities and neighborhoods that otherwise might not recover due to limited resources.

Each CDBG-DR activity, including CDBG-MIT (Mitigation), must meet the following criteria: a) address a disaster-related impact (direct or indirect) in a presidentially declared disaster area; b) be a CDBG-DR eligible activity; and c) meet a CDBG-DR national objective. The national objectives include: i) benefit low-and moderate-income persons; ii) aid in the prevention or elimination of slums or blight, or; iii) meet community development needs having a particular urgency.

7.3.1 HUD CDBG-DR Program

CDBG-DR funding supplements other Federal recovery assistance programs administered by FEMA, the Small Business Administration (SBA), and the United States Army Corps of Engineers (USACE). CDBG-DR funds cannot duplicate funding available from federal, state or local governments, private and non-profit organizations, insurance proceeds, or any other source of assistance and can be applied to fund the Non-Federal Match Program (NFMP). The NFMP uses CDBG-DR funds to provide a separate grant to meet the cost share requirement for other federal programs, including FEMA and consists of three sub-programs:

- FEMA Public Assistance (PA) Match,
- FEMA Individual Assistance (IA) Match
- FEMA Hazard Mitigation Grant Program (HMGP) Global Match.

Under the NFMP, the Authority has \$717.6 million in eligible costs, required to cover the state match needs for funding under FEMA Programs.

7.3.2 HUD CDBG-MIT Program

CDBG-MIT Program is a unique and significant opportunity for eligible grantees to use this assistance in areas impacted by recent disasters to carry out strategic and high-impact activities to mitigate disaster risks and reduce future losses.

The program defines mitigation as activities that increase resilience to disasters and reduce or eliminate the long-term risk of loss of life, injury, damage to and loss of property, and suffering and hardship by lessening the impact of future disasters.

The CDBG-MIT Program applies for costs not covered or in excess of funding available from the FEMA Public Assistance Non-Disaster Related Hazard Mitigation (Section 404) Program. Therefore, these funds availability will be subject to the final funds appropriated under Section 404.

7.4 Consolidated Appropriations Act

On December 27, 2020, the Consolidated Appropriations Act of 2021 (the “2021 CAA”) was enacted, providing coronavirus emergency response and relief funds.

Section 533 of the 2021 CAA provides for \$638 million to prevent, prepare for, and respond to the coronavirus pandemic, including necessary expenses for grants to carry out a Low-Income Household Drinking Water and Wastewater Emergency Assistance Program (the "LIHWAP"). The funds should assist low-income households, particularly those with the lowest incomes, that pay a high proportion of household income for drinking water and wastewater services, by providing funds to owners or operators of public water systems or treatment works to reduce arrearages of and rates charged to such households for such services.

The funds should be allotted to a State or Indian Tribe based on the following (i) the percentage of households in the State, or under the jurisdiction of the Indian Tribe, with income equal to or less than 150 percent of the Federal poverty line, and (ii) the percentage of such households in the State, or under the jurisdiction of the Indian Tribe, that spend more than 30 percent of monthly income on housing.

PRASA expects to request a portion of the funds that will be allocated to Puerto Rico with the purpose of applying such funds for the benefit of qualifying low-income households' clients.

7.5 American Rescue Plan Act

The American Rescue Plan Act of 2021 ("ARP") was signed into law by President Biden on March 11, 2021 providing additional relief to respond to the continued impact of COVID-19 in the United States and its territories. No impact from ARP has been incorporated in the financial projections included in this Fiscal Plan until more visibility is attained regarding the potential funds to be assigned to the Authority.

The ARP provides \$1.9 trillion in total stimulus, building upon the \$2.2 trillion Coronavirus Aid, Relief and Economic Security ("CARES") Act and the \$910 billion Coronavirus Response and Relief Supplemental Appropriations ("CRRSA") Act.

The ARP allocates \$350 billion of funds to state, territorial and local governments, which will be critical in addressing revenue losses, increased expenses, and unforeseen budget gaps due to COVID-19. A summary of ARP provisions that are deemed relevant to the Authority are included below.

7.5.1 State and Local Assistance

Under Subtitle M, Section 9901 of the ARP, Coronavirus State and Local Fiscal Recovery Funds of \$350 billion are allocated to state, territorial and local governments to remedy this mismatch between rising costs and falling revenues stemming from the COVID-19 public health emergency. A total amount of \$4.5 billion have been allocated for territories, of which Puerto Rico is estimated to received \$19 billion

The funds must be spent by December 31, 2024 and can be used for the following purposes:

- Respond to the COVID-19 public health emergency and its negative economic impacts;
- Provide premium pay to eligible workers performing essential work during the COVID-19 public health emergency by providing premium pay to eligible workers;

- Replace revenue that was lost, delayed, or decreased as a result of the COVID-19 public health emergency; and
- Make necessary investments in water, sewer, or broadband infrastructure.

The aid allocation to the U.S. Territories^[1] amounts to \$6.67 billion (\$4.5 billion for the States and \$2.17 billion for local governments). This appropriation for U.S. Territories will be allocated as follows:

- 50% to be allocated equally among the territories, and
- 50% to be allocated to each territory proportionally based on population.

7.5.2 Water and Sewer Utilities

Allocation of funds under ARP specifically for water and sewer utilities includes:

- \$4.5 billion in utility assistance through the Low-Income Home Energy Assistance Program to remain available through September 30, 2022;
- \$500 million for water assistance grants to states and territories (including Puerto Rico) “to assist low-income households, particularly those with the lowest incomes, that pay a high proportion of household income for drinking water and wastewater services”; The Government will provide the funds under this provision to “owners or operators of public water systems or treatment works to reduce arrearages of and rates charged to such householders for such services”

7.5.3 Other Provisions

In addition, other benefits from the ARP are expected to benefit Puerto Rico’s economy such as unemployment benefits, funds for education, healthcare, and small business. Furthermore, economic impact payments of up to \$1,400 for individuals (or \$2,800 for married couples, plus \$1,400 for each dependent) are included under the ARP, which also includes provisions for unemployment assistance, expand the Child Tax Credit, Earned Income Tax Credit, and extends the availability of the Employee Retention Credit for small businesses through December 2021.

7.6 Funding Status

For PRASA’s Emergency Works, as of March 31, 2021, FEMA has obligated \$204.6 million, of which \$160.8 million has been disbursed for eligible emergency works expenditures.

For Permanent Works, an agreement on reconstruction needs and size cost estimates has been reached after three years of collaborative work by and among PRASA, COR3 and FEMA

[1] Includes American Samoa, Guam, Northern Mariana Islands, Puerto Rico, the U.S. Virgin Islands

representatives. On January 5, 2021, the President of the United States announced a net award of \$3.66 billion for infrastructure projects to rebuild PRASA's system from the devastation caused by the 2017 Hurricanes. This obligation of funds from FEMA does not constitute an authorization for construction and each project will have to be submitted to FEMA for eligibility determination and formulation.

As a requirement associated with this funding obligation, FEMA and COR3 required PRASA to submit a work plan, called PRASA's FAASt Workplan, within 90 days of the funding obligation date. This plan outlines PRASA's proposed investments in Puerto Rico's water and wastewater systems over the next ten years. The Authority is required to update and resubmit the workplan to COR3 and FEMA every 90 days after the initial submission which was on April 8, 2021.

PRASA is required to meet a 10% cost share requirement for its FEMA-funded permanent work projects. PRASA plans to meet its cost share portion through the CDBG-DR Flexible Match program funds, as they become available. Access to CDBG-DR funds, however, is subject to various HUD actions. In the event that these funds are not available, PRASA must find savings elsewhere or adjust rates to cover the cost share obligation. PRASA is in the process of signing a sub-award agreement with the Puerto Rico Department of Housing for participation in the cost share program.

The current estimate of federal funding to address the impact of Hurricane Maria is presented in the following table:

TABLE 7-1: DISASTER FUNDING STATUS FOR 2017 HURRICANES (IN \$ MILLIONS)

Program /Grantor	Type of Works	PRASA Estimated Amount	Federal Share	Local Share ^b	Obligated	Disbursed (March 31, 2021)
FEMA	Emergency Work	\$ 232.7	\$ 226.6	\$6.1	\$ 204.6	\$ 160.8
	Permanent Work	4,070.0	3,663.0	407.0	3,663.0	-
	Disaster Related Hazard Mitigation (406) ^a	610.5	457.9	152.6	-	-
	Non-Disaster Related Hazard Mitigation (404) ^a	631.7	473.8	157.9	-	-
HUD	CDBG-DR Non-Federal Match Program	717.6	717.6	-	-	-
	CDBG-MIT Hazard Mitigation ^a	2,668.3	2,668.3	-	-	-
Total		\$8,930.7	\$8,207.1	\$723.6	\$3,867.6	\$160.8

^a Maximum amount of funds estimated by the Authority for projects under the program, subject to projects final needs, eligibility, benefit cost analysis and program funds availability.

^b The Local Share portion is subject to update and material change.

Other than the Emergency and Permanent Work programs funding, no additional funds has been obligated. Therefore, this Fiscal Plan only assumes available funding from programs which already obligated such funds and the projected cost share from the CDBG-DR program for Permanent Works.

8 Conclusion

PRASA's 2021 Fiscal Plan reflects the fiscal goals and requirements as mandated by PROMESA to ensure fiscal responsibility and access to credit markets at reasonable rates, while also oriented to ensure reliable, safe, and affordable water and wastewater services. In providing these essential services, the Authority must ensure compliance with federal and local environmental and drinking water regulations, safeguarding the health of the population, and protecting the environment. This Fiscal Plan aims to strike a balance across the interests of all stakeholders involved, including maintaining an affordable cost of services for its customers while continually improving and maintaining the reliability and quality of its System.

Even though PRASA has made progress in stabilizing its finances, a history of sustained underinvestment and a lack of comprehensive operational reforms has led to underperformance in many respects, including:

- High levels of water loss;
- Inability to proactively perform system maintenance; and
- Under-delivery of critical CIP projects.

The new inflow of federal funds for projects and the improved financial conditions are expected to allow PRASA to take the necessary steps to fully bridge its operational deficiencies to ensure long-term fiscal responsibility and operational sustainability and a reliable and resilient infrastructure. While debt service reductions and rate increases have improved PRASA's economic health over the past several years, the Authority has fallen short on fully implementing operational measures – such as the metering measure – and delivering critical maintenance and capital projects on time and on budget. Moreover, recent 2020 Census data confirms a sustained decline in population and hence a potentially lower revenue base for PRASA. Therefore, any failure to implement the financial and operational measures outlined in this Fiscal Plan would mean that PRASA would need to further rely on rate increases to compensate for a declining revenue base to achieve balanced budgets or risk ongoing structural deficits.

To become a sustainable utility PRASA must pursue the full implementation of the fiscal and operational measures outlined in this Fiscal Plan. Should there be underperformance in Fiscal Plan implementation, the Oversight Board may rely on its powers and rights to take corrective actions, including the measures provided in PROMESA Sections 203 and 204. Provided that all Fiscal Plan measures are implemented in an efficient and timely manner, PRASA can achieve the Fiscal Plan's objectives of long-term fiscal responsibility and operational sustainability, thus enabling the sustained provision of reliable, affordable, and safe water and wastewater services to the people of Puerto Rico.

Appendix

Consolidated Action Plan

Initiative	Action items	Deadline	Owner
Physical Water Loss Reduction (Water Balance)	Submit 2020 Water Balance results to the Oversight Board	30-Jun-21	NRW Office
Emergency Response Plan and Climate Risk Preparedness	Update and submit RRAs to EPA	30-Jun-21	VP of Operations
Christmas Bonus Elimination	Eliminate Christmas Bonus accruals representing current and subsequent year payments	1-Jul-21	Human Resources
Rate Adjustment	Implement approved rate adjustment (FY2022)	1-Jul-21	Customer Service / IT
Chemical Expense Reduction	Finalize Carraizo Laminar Aeration Professional Engineer Report	15-Jul-21	Infrastructure
Interagency Debt Settlement	Re-engage PREPA in accounts payable negotiations with the intention of settling disputed amounts independently (i.e., without any third-party) and agreeing to a payment plan	15-Jul-21	Executive President
Chemical Expense Reduction	Report coagulant and flocculant procurement status to Oversight Board	30-Jul-21	Strategic Planning / Compliance
Rate Adjustment	Share rate design study finding with the Oversight Board	30-Jul-21	Customer Service Department
Asset Management and Maintenance Plan	Launch a Predictive Maintenance Program	31-Jul-21	Maintenance Director
Master Plan	Finalize selection and contracting with the preferred proponent to develop the Master Plan	31-Jul-21	Infrastructure
New Financing for CIP	Execute Financial Assistance Agreement for DWSRF funds (\$46M)	31-Jul-21	Finance
Organization Optimization	Complete productivity and rightsizing study	31-Aug-21	Human Resources
Chemical Expense Reduction	Proposal award for chlorine and permanganate bid	31-Aug-21	Purchasing / Operations

Initiative	Action items	Deadline	Owner
Electricity Expense Reduction	Submit to the Oversight Board a list of potential renewable energy opportunities to be considered for procurement	31-Aug-21	Infrastructure
Metering Optimization	Determine the operational model to pursue meter replacement program (i.e., refined P3 or self-procured)	31-Aug-21	PRASA Governing Board and/or P3A
New Financing for CIP	Execute Financial Assistance Agreement for new CWSRF funds (\$32M)	31-Aug-21	Finance
Interagency Debt Settlement	If independent settlement fails, then PRASA must pursue alternate resolution options by submitting to PREPA a draft agreement to enter a voluntary arbitration process to promptly settle disputed amounts	1-Sep-21	PMO Steering Committee
Physical Water Loss Reduction (Leak Reduction)	Submit a leak reduction program including high-priority targets to the Oversight Board	15-Sep-21	NRW Office
Physical Water Loss Reduction (Water Balance)	Submit 2021 Water Balance results to the Oversight Board	15-Sep-21	NRW Office
PMO Execution	Complete ongoing PMO structure assessment	30-Sep-21	VP of Strategic Planning
Asset Management and Maintenance Plan	Develop a written summary of asset management recommendations provided by the most recent subject matter consultant and provide to the Oversight Board	30-Sep-21	Maintenance Director
Physical Water Loss Reduction (Pressure Management)	Deploying crews to attend flagged pressure zone (39)	30-Sep-21	NRW Office
Master Plan	Implement CIP tracking tool	30-Sep-21	Infrastructure
Organization Optimization	Submit key findings and proposed changes resulting from workforce planning and talent management study to Oversight Board	30-Sep-21	Human Resources
Chemical Expense Reduction	Provide update on the chemical inventory program to Oversight Board	30-Sep-21	VP of Strategic Planning
Electricity Expense Reduction	Issue the RFI (i.e., procure information) for the defined renewable energy opportunities such as PPAs.	15-Oct-21	Infrastructure

Initiative	Action items	Deadline	Owner
Asset Management and Maintenance Plan	Define metrics to measure the program's progress including metrics on actual time spent servicing maintenance orders	15-Oct-21	Maintenance Director
Electricity Expense Reduction	Reassess and adjust underperforming implemented non-capital-intensive measures	29-Oct-21	Operations
Metering Optimization	Establish the necessary steps to execute the selected operational model (e.g., scope and procurement timeline) alongside projection of associated benefits	29-Oct-21	PRASA Governing Board and/or P3A
Rate Adjustment	Start public hearing process required by Act 21	1-Nov-21	Customer Service Department
PMO Execution	Appoint permanent PMO Director to support and provide feedback on structural developments	15-Nov-21	VP of Strategic Planning
Physical Water Loss Reduction (Pressure Management)	Monitoring of flagged pressure zones (39)	15-Nov-21	NRW Office
Organization Optimization	Discuss findings and proposed changes with Oversight Board	15-Nov-21	Human Resources
Master Plan	Implement the Project Management Information System (PMIS)	15-Nov-21	Infrastructure
Interagency Debt Settlement	Execute voluntary arbitration agreement between PRASA and PREPA	30-Nov-21	PMO Steering Committee
Physical Water Loss Reduction (Leak Reduction)	Identify tanks (auxiliary facilities) that require telemetry upgrades	15-Dec-21	NRW Office
Physical Water Loss Reduction (Leak Reduction)	Implement targeted, leak reduction program	15-Dec-21	NRW Office
Asset Management and Maintenance Plan	Define and incorporate critical assets into such program	31-Dec-21	Maintenance Director
Emergency Response Plan and Climate Risk Preparedness	Complete and submit ERPs to EPA	31-Dec-21	VP of Operations
Electricity Expense Reduction	Size and determine the projected benefits of the additional renewable energy opportunities	31-Dec-21	Infrastructure

Initiative	Action items	Deadline	Owner
PMO Execution	Submit final PMO structure, processes, roles and responsibilities to the Oversight Board	17-Jan-22	VP of Strategic Planning
Healthcare Savings	Procure information (i.e., RFI) on alternative health medical plan	31-Jan-22	Human Resources
Metering Optimization	Issue procurement for the selection of third-party metering vendor(s)	31-Jan-22	Meter Replacement Project Manager
Physical Water Loss Reduction (Leak Reduction)	Procure overflow technology for identified tanks	1-Feb-22	NRW Office
Emergency Response Plan and Climate Risk Preparedness	Submit key findings to Oversight Board	15-Feb-22	VP of Operations
Asset Management and Maintenance Plan	Review the efficiency and progress of the Predictive and overall Asset Management Programs and submit findings to the Oversight Board	28-Feb-22	Maintenance Director
PMO Execution	Implement findings on PMO structure assessment	15-Mar-22	VP of Strategic Planning
Asset Management and Maintenance Plan	Procure a consultant to develop a comprehensive, updated, conditions assessment and asset management plan	31-Mar-22	Maintenance Director
Metering Optimization	Initiate implementation of pilot metering replacement program/P3 project	31-Mar-22	Meter Replacement Project Manager
Asset Management and Maintenance Plan	Create plan and target for incorporation of condition and performance of each asset in SAP	30-Jun-22	Maintenance Director
Physical Water Loss Reduction (Master Meters)	Complete calibration or installation of remaining 15-20% of water producing facilities	30-Jun-22	NRW Office
Pension Reform	Implement Pension Reform	1-Jul-22	Human Resources
Rate Adjustment	Implement revised rate design (FY2023)	1-Jul-22	Customer Service / IT
Chemical Expense Reduction	Finalize coagulant and flocculant testing	31-Jul-22	Strategic Planning / Compliance

Initiative	Action items	Deadline	Owner
Master Plan	Complete the 2020 Master Plan including detailed prioritization guidelines	31-Jul-22	Infrastructure
Interagency Debt Settlement	Finalize arbitration process and issuance of award included in the arbitration agreement	15-Aug-22	PMO Steering Committee
Chemical Expense Reduction	Finalize coagulant and flocculant procurement process	31-Dec-22	Strategic Planning / Compliance
Master Plan	Incorporate findings from Master Plan into CIP	31-Dec-22	Infrastructure
New Financing for CIP	Execute Loan Agreement for RD funds (\$26M)	TBD	Finance