GOVERNMENT OF PUERTO RICO
DEPARTMENT OF HEALTH

REPORT TO THE GOVERNOR ON THE EFFICACY OF THE CAPACITY DEVELOPMENT STRATEGY AND PROGRESS MADE TOWARDS IMPROVING TECHNICAL, MANAGERIAL AND FINANCIAL CAPACITY OF PUBLIC WATER SYSTEMS FOR FISCAL YEARS 2020, 2021 AND 2022

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OCTOBER 2023

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EXECUTIVE SUMMARY

The Drinking Water State Revolving Loan Fund Program (DWSRF) was established twenty-six years ago as a result of the amendments to the Safe Drinking Water Act (SDWA, The Act). In Puerto Rico, this program is a program for the financing of drinking water infrastructure that will avail the compliance of the drinking water systems with the Primary Drinking Water Standards.

There are several public health protection and prevention programs associated to the DWSRF. One of these is the Capacity Development Program which responds to Section 1420 of the SDWA. The Provisions of the Act required the design and implementation of a Program and a Strategy to ensure that all Community Water Systems (CWS) and Non-transient, Non-community Water Systems (NTNCWS) demonstrate Technical, Managerial, and Financial Capacity. The relationship of both Programs is based upon the fact that by law, Section 1452 (a) (3) establishes the prohibition on DWSRF assistance to a system lacking the capacity to ensure SDWA compliance unless the system agrees to restructuring changes to ensure it has the necessary technical, managerial, and financial Capacity to comply with the Act. States failing to develop and implement such programs will have up to 20% of their DWSRF allotment withheld. All Public Water Systems (PWS), all new community water systems and all new NTNCWS, nonprofit NTNCWS and nonprofit TNCWS will have to respond to the different applicable aspects of the Program.

Twenty-three years ago, the Puerto Rico Department of Health prepared and submitted to the Environmental Protection Agency for approval the Capacity Development Strategy (CDS). The Program Strategy has been successfully implemented since then. Although is a living document up to date no major changes have been undertaken. It is important to note that the strategy encloses two other strategies: one for the management of larger systems mainly systems pertaining to the Puerto Rico Aqueduct and Sewer Authority (PRASA) and one for the management of small systems which are Non-PRASA. Both strategies have been revised during these years. Recently and in accordance to the SDWA, the Strategy was revised to incorporate the promotion of asset management in the drinking water systems. Asset Management is a new tool provided by the regulations that will help systems in their process of operation and compliance with the SDWA. The revised Strategy was submitted to EPA in compliance with the deadline established in November 2022. EPA approved the revision in March 2023. DOH has developed a series of initiatives to avoid the creation of non-viable systems while existing systems are assisted in their process of compliance have been tested and revised according to the needs and the enforcement of new regulations. As a result of the establishment of the Strategy a procedure or methodology to evaluate the establishment of new systems as part of the endorsement and permitting was created and for the last twenty-three years DOH has been successful in its implementation and its use in order to avoid the creation of new systems lacking capacity.

The last three years have been years of great challenges. We have to recognize that during 2020 due to the coronavirus pandemic, many activities related to the assistance to the drinking water systems were delayed and or postponed. Nevertheless, this Department has not hesitated in continuing with the implementation of the Strategy and thus the assistance to the systems During fiscal years 2021 and 2022 we were still under the pandemic conditions due to the coronavirus variants that continue posing high numbers in deaths and rise in the positivity

index. One change in due date was the Asset Management revision of the Strategy and its submittal date to EPA.

During FY 2022 this Department moved to review available literature related to the AWIA amendments that now under Section 2012, state drinking water programs are required to "consider and include as appropriate asset management" into their state capacity development strategies. To this effect DOH proceeded to revise the Capacity Development Program New Drinking Water Systems Capacity Assurance Plan Revision Capacity Development Strategy/Asset Management Promotion. In accordance with this requirement DOH proceeded to provide and include in the strategy "a description of how asset management will be promoted by the Department of Health in Puerto Rico's drinking water systems for them to establish asset management plans that include best practices for asset management and to provide such technical assistance to these public water systems in training operators or other relevant and appropriate persons in implementing such asset management plans. Also, DOH has moved to revised associated tools such as the Technical Assistance Support (TAS) to include as appropriate all those elements that will be favoring and facilitating said promotion. According to the above-mentioned memorandum the asset management description that the state needs to do, must include "how the state will use the five-core-questions framework, as appropriate, to encourage the development of, and assist in the implementation of, asset management plans". This framework will include the following "five core questions":

1. What is the current state of the utility's assets?
2. What is the utility's required "sustainable" level-of-service?
3. Which assets are critical to sustained performance?
4. What are the utility's best "minimum life-cycle cost" capital improvement plan and operations and maintenance strategies?
5. What is the utility's best long-term financing strategy?

In the fiscal year 2022 we were able to prepare the revision of the Strategy and we submitted it to EPA is within the new deadline established of December 2023. We were also able to initiate in a very simple and conservative manner the stakeholder involvement but due to the hit of hurricane Fiona it was not possible to expand it, but our exertions are in that direction.

During fiscal year 2022 as well as in 2020 and 2021 Puerto Rico's economy was disrupted in first instance with the earthquakes at the beginning of 2020, impacting the whole island although more severely in the southern region. These earthquakes continued through 2022 also but not as severe as those of 2020 and few in 2021. In second instance was the pandemic caused by the coronavirus in March 2020 that also continued during 2021 and 2022 due to all the variants that have been registered in the island. Initially, there was a need to lockdown the Government in an effort to control the epidemic in Puerto Rico and thus avoid the collapse of the health services that the pandemic required. Also, the pandemic caused a lockdown of all commercial, social and government activities in Puerto Rico as well as in many countries worldwide. At the beginning of FY 2021 there was partial lockdown, and a curfew prevailed in force several months after a change in government administration. Also, during the months or August through November 2020 there was a coronavirus cases rebound which was expected for the autumn and it was quite severe and

continued through 2021 and 2022 with a new mutation of the virus. This continued causing a disruption of the activities.

As of today, the difficult economic condition continues affecting adversely our economy. The increase once more in coronavirus cases continues exacerbating the limited financial resources. Although no Hurricanes came over in 2021 this was not the case for FY 2022. Once more the recovery is undergoing a total set-back due to the devastation caused by hurricane Fiona and the precarious financial situation aggravated not only by the hurricane but by the constant power outages and now with the lack of electricity and potable water for almost a month after the hit of the hurricane.

Notwithstanding the situation and the difficulties caused by the challenges DOH has continued assessing systems to identify capacity development limiting factors in the process of attaining compliance with the SDWA. Once identified the limiting factors that impair the process of compliance, general and specific case by case action plans have been implemented and tested to facilitate systems compliance.

During the last eighteen years different designed pilot projects established on selected communities have proved successful and effective in helping systems attain capacity to the extent that these have been validated and their use has been broadened to embrace more CWS. DOH has engaged in revising specific literature and the Capacity Development Manual developed to guide the CWS, in order to further the assistance provided and cope with the system's needs. Through the design of a small systems CPE or adapted CPE, which is a specific methodology applicable to these systems, DOH has been able to evaluate their compliance status and its relationship to the specific areas of capacity in order to establish compliance action plans directed to increase capacity. Under a Circuit Riders pilot project designed several years ago, DOH engaged in performing the Adapted CPE in conjunction with the Sanitary Survey process and the Operator Certification training. Systems were evaluated taking into account within others the optimization of the system and were provided follow-up and guidance in the implementation of their resulting compliance action plans in order to provide the tools for optimizing them and re-enforcing the maintenance and/or attainment of capacity. This new tool or approach to the systems enhanced the assistance process.

Concerning the pilot project related to Circuit Riders, as stated in previous reports, in the beginning of FY 2016 not only the cut off has impaired and halted its development but also the financial crisis and serious economic distress that the government of Puerto Rico experienced and that as of today to certain extent continues undergoing. Additional factors have been the prevailing coronavirus pandemic during these last three years, and flooding due to the hurricane season the hit of hurricane Fiona including now the severe and continuous power outages that affects all government and private sector services. Nevertheless, DOH has been able to restart the assistance to the systems.

During FY 2020 DOH designed a new pilot project and included it in its work plan for FY 2021, with the expectation to initiate its development during FY 2021. In October 2020 DOH entered into a new contract with different circuit riders in order to assist a total of 239 drinking

water systems in the process of attaining compliance with the SDWA. Included also were small and medium systems. As previously reported contract with a private entity for undertaking the Circuit Riders project activities has not been possible since September 2016 and we had directed our efforts to move on to contract private entities that can help us in our outreach process. Notwithstanding, DOH continued providing a combination of technical assistances with direct evaluation of systems condition and capacity development assistances during the past fiscal years including FY 2022 and where we are still undertaking resiliency efforts. The State Management set-aside established during FY 2020 covers not only small systems but all drinking water systems participating under the newly designed Circuit Rider's project. Therefore, since fiscal year 2020 there was a Program retake of the full operation of electronic transfer of funds that started by the end of previous year 2020. During the last quarter of FY 2020 and beginning this fiscal year 2021, this Department was able to hire under contract, persons in order to undertake the activities delineated under the pilot project to give continuity to the assistances provided to the systems. The Technical Assistance and the State Program Management set-asides funded the activities under the nine contracts undertaken. Although the assistance activities were detailed in the work plan where a new pilot project was detailed to "recover" time lost during these four years of cut-off, not all developed as programed during FY 2021. Nevertheless, our efforts and work continues.

In the interest of assisting systems in their compliance process DOH continues coordinating efforts with other agencies in order to maximize the assistance to CWS. We must emphasize that Puerto Rico is still under resiliency actions needed after the impact of two hurricanes, earthquakes, and the coronavirus pandemic starting fiscal year 2017 through 2019. These extraordinary situations have pinpointed the importance of participating in the establishment of partnerships, interagency committees, identification of funds and the establishment of special environmental projects. Nevertheless, due to the cutoff that prevailed for the last three years and the financial situation we continue been limited in the ability to enter in new contracts award which will constitute our outreach to the systems in order to advise them of the new requirements of the law while also offering assistance on this effect.

DOH continues using the Technical Assistance Support (TAS) approach which was delineated to implement and test initiatives. In an orderly fashion the TAS continues maximizing resources and proving to be useful in the effective and efficient management of the use of the SRF and set-aside limited resources.

The dedicated use of funds for specific pilot projects that provide multiple results also demonstrates to be an outreach approach to the systems most in need of assistance because it advances the systems in their process of compliance.

The general global economic situation as well as Puerto Rico's financial constraints, continue threatening the system's ability and possibilities of compliance. The systems' compliance status is constantly limited, impaired, and restrained by global economic conditions, as well as the lack or limited financial resources. Now with the most recent environmental impact caused by the two hurricanes, the earthquakes, the coronavirus pandemic, and the recent and never-ending drought with water rationing these add up to the limitations of the systems. They are restrained, and the degree of difficulty in the process of attaining compliance

must be diminished by increasing the assistance efforts. These assistance efforts have recently turned out to be resiliency efforts in order to return the systems to operation. Assisting agencies must continue reexamining the services provided and exertions towards increasing and maintaining partnerships that are vital in the assistance process because it is necessary to deal in a case by case with the communities and re-evaluate needs through achievable mean in order to manage them in their compliance process. It is also necessary to re-examine and measure compliance action plans to the extent that these are attainable ways of eliminating limiting factors and a tool to achieve compliance.

It is important to know that during the past six years the severe economic situation affecting Puerto Rico has impacted the ability of the government agencies in the execution of their roles and responsibilities and in the case of the Department of Health, the assistance provided to small drinking water systems has been limited. It is important to emphasize that Puerto Rico's economy has been in precarious now since FY 2016 and continues as such as of today although efforts are directed towards improving it. The situation has been aggravated by the environmental impact of several weather hazards such as the hurricanes, the prevailing earthquakes and the coronavirus pandemic and the variants of the virus. As we have indicated, our economy was severely lacerated with the strike or hurricane Irma and Maria. During the last five years progress towards recovery has been very slow due to the financial situation and the continuous prevailing disasters. Initially, the PROMESA enactment impacted the economy beyond the primary global financial distress. Recovery continues to be delayed and constantly disrupted. During fiscal year 2020 it was disrupted in first instance with the earthquakes at the beginning of 2020, and later with the pandemic caused by the coronavirus in March 2020. There was a need to lockdown the Government in 2020 in an effort to control the epidemic in Puerto Rico and thus avoid the collapse of the health services that the pandemic required. The pandemic caused a lockdown of all activity commercial and social in Puerto Rico as well as in many countries worldwide. The continuous tremors aggravated every recovery effort from the tremors and from the pandemic. The pandemic was "controlled" gradually to certain extent during the first six month of 2021 due to the extent of the availability and use of the vaccine against the coronavirus. Since June 2021, the government became more flexible in regard to the public health protection measures against the virus due to the vaccine and the progress towards eliminating the positivity of the virus: the lockdowns, curfews, and the control of population accessing services and activities was eliminated. The government tried to restart commercial activity and the "normality" of daily life.

By mid-June and July 2021, a slowdown in the vaccination process due to public resistance of certain population groups and the emerging variants such as the Delta which was becoming more contagious and attacking the nonvaccinated population was causing a backslash in the progress towards reaching normality in all aspects of the society and thus the economy.

As of the summer of FY 2021, the negative economic condition continued increasing and affecting adversely our economy. Example of this continue being the earthquakes and the prevailing coronavirus (COVID 19) pandemic and the variants rising the positivity. The result of this again is the loss of employment which continued exacerbating the lack of financial resources. The economic situation continues degrading not only with the combination of the above-mentioned events occurring simultaneously but now due to the fragility of the electric power infrastructure

that with any non-significant environmental conditions that affects the island, it was lost. Worsening the situation is that it has become a challenge to a new private partnership provider of the service of power distribution to keep up with its service. Thus, we had a great number of the population without power and without internet in some instances limiting the ability of the services of the private and public sectors to a full recovery and operation.

It seems that history is repeating in 2022. As in 2021, for the first six month of year 2022 the pandemic continues with the variants of coronavirus rising in positivity and a great death toll. The drinking water systems continued being affected to certain extent by the drought reaching its peak during the month of May and June 2022. We had water rationing during these months. We had again some potential cyclones and small storms that caused flooding during June eliminating the water rationing although casing disasters in some municipalities of the island with the consequences of lack of electric power due to the extreme fragility of the system.

Past almost five years, there are still communities that continue undertaking recovery and resiliency action because are still affected. Although the earthquakes began in December 2019, they have continued through 2021 and 2022 having some recent ones in June 2022 and because the earthquake series prevails it continues doing harm to the fragile infrastructure of the housings, schools and other buildings and roads or infrastructure in general. The pandemic since March 2020 has prevailed as of September 2022. Even small storms have impacted communities in several portions of the Island. We continued, as previously described, with the need to deliver potable water by PRASA due to the above-mentioned reasons and in many instances, to the lack of electric power.

Lack of financial resources and stability continues harnessing progress, and the resumption of normal activities continues under an "invisible lockdown" also due to the pandemic. We dare to say that for almost five years the main problem is the inability to fully recover since 2017 due to lack of financial resources,–the continuous environmental threats and the prevailing pandemic. Small drinking water systems, as well as by PRASA, continued in financial distress. Although there have been many newspaper headings mentioning the availability of FEMA funds for many aspects of our infrastructure these funds seem to be standing still, or not moving. Their pace of use is almost detained and are invisible to the public eye. Their lack of use is mostly noted in the electric power system with the constant outages and thus in the loss of water. These two utilities are constantly increasing in cost, making very difficult to the people their access. The fragility of infrastructure of these two utilities provoke interrupted operation.

Notwithstanding we must mention that the visits to all the Non-PRASA systems to oversee the damages caused and to provide the assistance so much needed in order to put into operation the systems were undertaken by the Department of Health, the Environmental Protection Agency and various non-governmental organizations (NGOs) was continuous and prevailed ongoing. All the information gathered during the assistance provided continued been channeled to the corresponding entities related to the management of emergencies whether local or federal. Coordination with FEMA to deal with ongoing resiliency activities of the disaster, has been the priority of the government in order to provide assistance to the people of Puerto Rico. Still as of FY

2022, we cannot deny that the recovery process has been very, very slow and limited due to the need to comply with the federal and state requirements.

Providing assistance to a system for attaining and maintaining capacity is a challenge that has increased due to the environmental damages cause by mother nature. However, DOH, with very limited resources, continues managing to outreach and increase the number of communities that are guided towards attaining Capacity. The Capacity Program Strategy has proven successful for it has combined multiple approaches for assessing and assisting systems in the process of compliance that due to their type, location, social composition, economic limitations, and/or financial constraints as well as their idiosyncrasy are limited in their ability to comply. Our expectations to establish new approaches in providing assistance to systems establishes a new vision in the coordination of efforts that are necessary for the increase of limited funds while simultaneously systems assistance continues.

Now, for almost twenty-three years DOH has been implementing the Non-PRASA Strategy included in the Capacity Development Strategy in general the most significant achievement is the increase in the systems that are disinfecting and moving towards compliance. Thus, there has been a decrease in the number of systems that are NOT disinfecting. Whichever way we describe it there is progress towards compliance. We cannot disregard that the pace of increase may seem slow in some instances. Also, we cannot disregard either that there have been small setbacks. We must emphasize that the pace might be slow, but it cannot be disregarded that the slowdown is the result of all the challenges encountered.

The number of systems with disinfection, in general, have been maintained. Nevertheless, compared to the last reporting period there is a slight decrease although in the last year there is also a slight increase that can possibly be accounted to all the challenges and limitations experienced. Slight variations may be appreciated based on the number of systems that may have been created, registered and/or eliminated or due to new regulations in force. The corresponding data/table is presented in section A-Enforcement *and Compliance Strategy for Small Community Water Supply Systems (Non-PRASA Strategy (NPS).*

It is important to know that as a result of the revision of the Non-PRASA Strategy it was determined that beginning on fiscal year 2012 all the Non-PRASA systems are included in the Strategy. This may represent an increase in the number of systems that are managed or addressed. Notwithstanding, during the last reporting period there has been a decrease in the number of negative results in surveillance bacteriological samples collected. Thus, although there may be slight decreases the general tendency is for the increase in negative results.

Small drinking water systems also encountered interruption in their operation due to lack of electricity. As previously stated**,** the Department of Health, the Environmental Protection Agency and various Non-Governmental Organizations (NGOs) undertook visits to all the Non-PRASA systems to oversee the damages caused by the hurricanes and provide the assistance so much needed in order to put into operation the systems. The information gathered during the visits was given to the Emergency Operations Center, a government center named in Spanish "Centro de Operaciones de Emergencia" (COE), established in coordination with FEMA to deal with

the disaster, in order to provide assistance to the people of Puerto Rico. *Appendix E* provides information on the resiliency activities undertaken past both hurricanes regarding all drinking water systems in Puerto Rico. As we indicated still today and during this reporting period resiliency activities are still being undertaken moreover when we also experienced the hit of hurricane Fiona in September 2022.

Throughout the years it can be appreciated that in general, systems are doing exertions to maintain the disinfection process and comply with the requirements. It is important to mention that the general financial situation has impacted and continues impacting systems seriously in their ability to comply by undertaking and maintaining the disinfection process. There have been slight decreases as we have indicated due to the above-mentioned global economic distress. We cannot disregard either the catastrophic impact of the two hurricanes on the systems. Notwithstanding all this we understand that due to the impact of the two hurricanes and the resiliency actions that as of today in some systems prevail, these have made great efforts in order to maintain their process with only minor decreases of one percent since the last three years and again in the last year a slight increase.

With the implementation of the ETT, the classification of the systems varied. In general, there was a need to cope these changes in the applicable regulation by revising the Non-PRASA strategy. For several years, the ETT approach has been used for the evaluation and the classification of the systems compliance. With the implementation of the ETT, the classification of the systems varied. DOH understood the need to cope all these changes and methods with the Non-PRASA Strategy and thus, it was revised in 2015. The revision addressed and/or incorporated new issues and challenges of the Non-PRASA systems:

- inclusion of new community and non-community Non-PRASA systems
- implementation of new regulations and future rules under development that require compliance[1]
- addition of new compliance assistance projects
- addition of the Enforcement Response Policy (ERP) and the Enforcement Targeting Tool (ETT) as measurements of water quality and enforcement prioritization
- reduction of the number of priority systems identified in the EPA ETT List;
- systems' elimination of cross connection.

As a result of the implementation of the ETT, the classification of the systems varied. DOH understands that after the implementation of the Non-PRASA Strategy and where there have been several changes in the applicable regulations, the use of the ETT, and changes in

[1] Long Term 1 Enhanced Surface Water Treatment Rule (LT1ESWTR), Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR), Stage 1 Disinfection By-Products Rule (Stage 1 DBPR), Stage 2 Disinfection By-Products Rule (Stage 2 DBPR), Groundwater Rule, Radionuclides Rule, Arsenic Rule, Total Coliform Rule (Revised).

reporting, there was a need to cope all these changes and methods by revising the Non-PRASA Strategy. Since 2015 it's been implemented, and it can be appreciated that the number of violations by system has decreased. We cannot disregard the fact that there have been setbacks, but efforts are directed towards returning to the normal operation of the systems.

Initially there were 232 Non-PRASA community water systems selected and included in the Non-PRASA Strategy. Since its implementation in 1997, many systems have been eliminated. Nevertheless, accounting for the number of systems that have been eliminated from the Strategy since its inception to date with the new regulations in force it becomes more difficult to estimate that number, moreover when there are always new systems that are registered. In addition, as a result of the revision of the Non-PRASA Strategy beginning in the fiscal year 2012 it was determined that all the Non-PRASA systems are included in the Strategy.

Future reports will refer to the information based on the ETT and the new approach of inclusion of all systems. Thus, now with this changing policy all community water systems will be included in the Small Systems Strategy, which is also being revised to become Small Systems Strategic Plan.

Thus, it is important to note that with the implementation of the Enforcement Targeting Tool (ETT), systems violations were assigned a weight or number of points based on the assigned threat to public health. A higher weight is placed on health-based violations. Under the ETT, all SNC[2] are treated equally, without regard to the gravity of the violation and without considering the violations a system may have that are not identified as SNC. The ERP and ETT will prioritize and direct enforcement response to systems with the most systematic noncompliance by considering all violation incurred by systems in a comprehensive way. Points for each violation are added to provide a score for the water system. A list is prepared once the systems reach 11 points or more.

We must emphasize that the biological violations results of the PRASA and Non-PRASA monitoring will vary due to EPA's publication of the Revised Total Coliform Rule (RTCR) in the Federal Register (FR) on February 13, 2013 (78 FR 10269) and minor corrections on February 26, 2014 (79 FR 10665).

The RTCR is the revision to the 1989 Total Coliform Rule (TCR) and is intended to improve public health protection by protection by reducing fecal pathogen to minimal levels through control of total coliform bacteria, including fecal coliforms and *Escherichia coli* (*E. coli)*. The RTCR applies to all public water systems (PWS) and started on April 1, 2016.

Key provisions of the RTCR are:

- Setting a maximum contaminant level goal (MCLG) and maximum contaminant level (MCL) for *E. coli* for protection against potential fecal contamination.
- Requirements for monitoring total coliforms and *E. coli* according to a sample siting plan and schedule specific to the PWS.

[2] Due to the change in policy of the ERP/ETT on fiscal year 2012, the SNC systems are thereinafter referred to as "systems with the Most Serious or Repeated Violations", or the abbreviation by initials of SMSRV.

- Setting a total coliform treatment technique (TT) requirement. For total coliforms (TC), PWS must conduct a Level 1 or Level 2 assessment of their system when they exceed a specified frequency of total coliform occurrences. Any sanitary defect identified during a Level 1 or Level 2 assessment must be corrected by the PWS. These are the treatment technique requirements of the RTCR.

- Public notification (PN) requirements for violations.

- Specific language for CWSs to include in their Consumer Confidence Reports (CCRs) when they must conduct an assessment or if they incur an E. coli MCL violation.

Therefore, the tables and graphics presented hereinafter, although demonstrating the achievements in compliance of the systems, these are not comparable to previous years' reports due to the fact that the applicable rule has changed the form their compliance is measured. Each one of the possibilities of compliance that are available requires time and money before compliance results can be seen, especially the connection to the PRASA system.

I. Foreword

The Drinking Water State Revolving Fund (DWSRF) is a program established as a result of the 1996 amendments to the Safe Drinking Water Act (SDWA). The Puerto Rico Department of Health (PRDOH) is administrator and lead agency for the DWSRF. The PRDOH is also the agency with the primary responsibility for drinking water regulation. The DWSRF establishes a series of financial mechanisms to avail the drinking water systems in their compliance with the drinking water standards of the SDWA when construction or enhancement of the infrastructure is necessary for compliance and abatement of drinking water contamination. Also available there are other drinking water contamination prevention programs, directly related to the DWSRF, mechanisms that are available for protecting public health. One of these programs is the Capacity Development Program established under section 1420 of the SDWA. It is directly related to the DWSRF and its set-asides, as stated in the law. Failure to comply with the requirements and/or establishment of the above-mentioned programs associated to the set-asides and the requirements of the law will cause the loss of funds under the DWSRF. Additionally, this may redound in public health effects.

Up to fiscal year 2022 DOH has submitted all the annual Capitalization Grants that allow the establishment of the above-mentioned financial mechanisms. The Capitalization Grant corresponding to FFY 2020, requested on March 13, 2020, was approved on October 30, 2020, the FFY 2021 grant was approved on September 11, 2021, and the FFY 2022 grant was approved on June 26, 2023. DOH has also requested certain capitalization grants associated to the Bipartisan Infrastructure Law (BIL) of November 2021. Since fiscal year 2016 the fiscal situation of the government of Puerto Rico, as well as its instrumentalities were undergoing distress, more marked with the enactment of PROMESA. For four years the DWSRF was under a federal cut off of the transfer of funds from the federal Treasury to Puerto Rico. This cut-off started approximately in February 2016. One year later there was a partial riddance for the funds under the set-asides. Also, it must be noted that the capitalization grants corresponding to fiscal year 2016, 2017, 2018, 2019 and 2020 although requested in compliance with the deadlines established in order to receive the approval on or before September 30, of the corresponding years all have been approved within a year or more after the request. On September 5, 2019, the cut-off was ridden by EPA as a result of reaching a Debt Restructure Agreement for PRASA (currently the sole "loanee" to the Program) which was reached and signed in the summer of 2019.

Prior to reaching the riddance of the cut-off and signature of the Agreement, two new Operating Agreement, two Memorandum of Understanding, an Escrow Accounts and Trust were established in order to comply with EPA's requirements. Additionally, the government of Puerto Rico restituted 53 million dollars to the Fund that were frozen and that corresponded to repayment funds and state match funds.

As indicated previously, DOH continues complying with the requirements of Section 1420 of the SDWA including its subsections **(*See Attachment I*).** DOH continues with the development of previously established Capacity Development Program and by complying with EPA's regulations received the approval to the New Drinking Water Systems Capacity Assurance Plan and to the Existing Water Systems Assurance Strategy. Since 1997 and up to fiscal year 2012 when the regulations established the Enforcement Targeting Tool (ETT), the new enforcement mechanism, DOH submitted to EPA the list of systems with a history of significant noncompliance. As stated

previously, now the new enforcement mechanism is through the use of the Enforcement Targeting Tool (ETT) which is a measurement of water quality and enforcement prioritization. Also, DOH has complied with the quarterly reporting under the ETT. In addition, since August 2001, DOH has prepared and submitted to EPA the Report on the Success of Enforcement and Capacity Developments Efforts in Helping Systems with a History of Significant Non-Compliance every three fiscal years.

Moreover, in compliance with the regulations and the requirements of the SDWA DOH revised the Capacity Development Strategy in order to include the promotion of asset management in drinking water systems and submitted it to EPA in November 2022. This Strategy revision was approved by EPA in March 2023.

As agreed with EPA-NY, concerning the reporting period, in this report we will use only the complete information or data corresponding to fiscal years 2020, 2021 and 2022. No partial data corresponding to this current fiscal year will be provided herein because as of the date of the preparation of the report they are expected to be complete, not partial and should it be the case it will be specified and or explained. This determination is based on fact that in the past reports the "total data" used was partial because the fiscal year had not ended at the time the report was required or expected to be submitted. We cannot disregard the fact that there may be external forces, situations that may impair DOH to provide all the information needed but if such situations occur this Department will notify their occurrence.

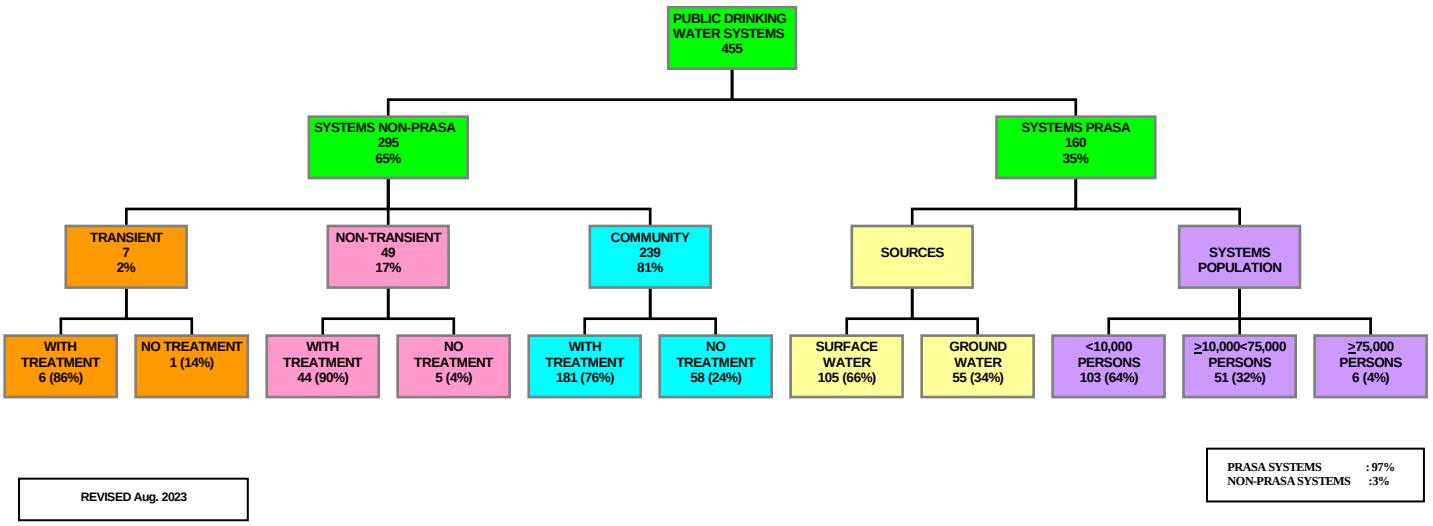
Having complied with these requirements we are submitting to EPA and to the Governor of the Commonwealth of Puerto Rico, Honorable Pedro Pierluisi Urrutia, the *Report to the Governor on the Efficacy of the Capacity Strategy and Progress Made Towards Improving Technical, Managerial and Financial Capacity of Public Water Systems of fiscal years 2020, 2021 and 2022,* in order to comply with section 1420(c)(3) of the SDWA.

II. Introduction

In Puerto Rico, the Puerto Rico Aqueduct and Sewer Authority (PRASA), a public corporation created by law, has the responsibility for the supply of drinking water to the majority of the population. As of September 2019, approximately 96% of the population receives potable water served by this public corporation. Thus, around 4% of the population receives drinking water from sources/systems other than PRASA's. These systems, which we call Non-PRASA systems are owned and operated by private entities, rather than the public corporation.

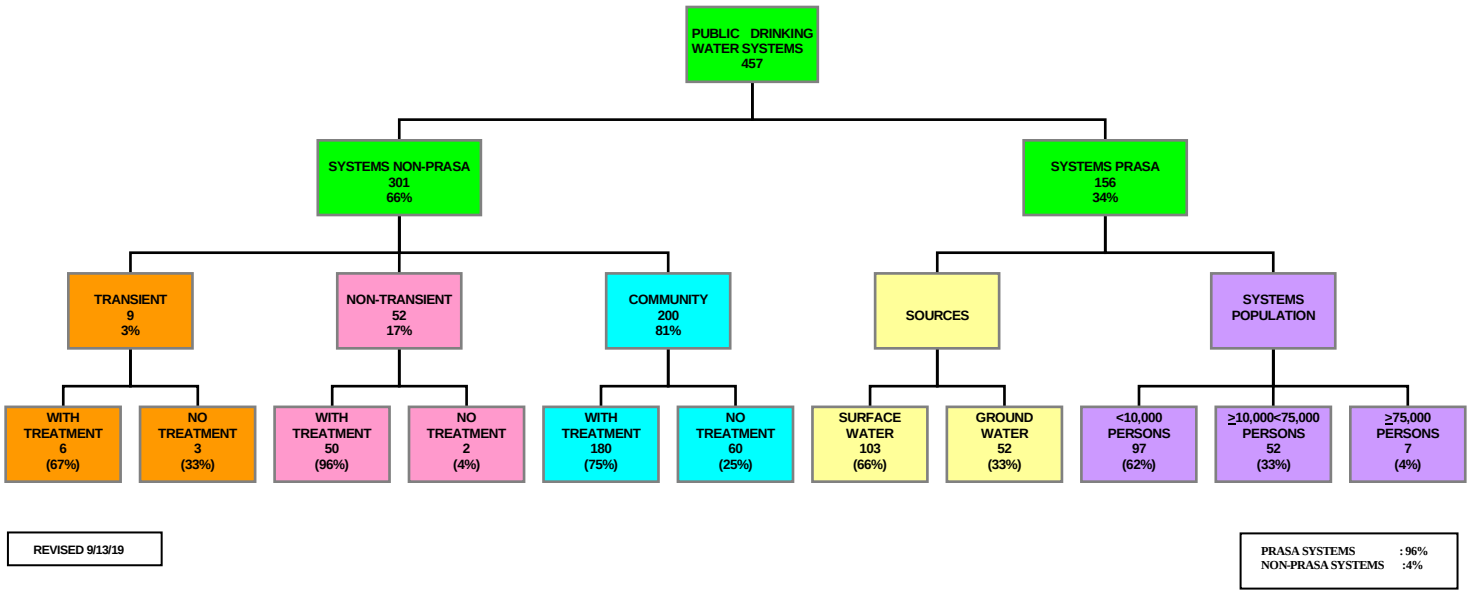
At the end of fiscal year 2022, the Non-PRASA drinking water systems were distributed as follows: 239 community systems located in the rural area throughout the Island and 56 non-community systems.

PUERTO RICO DRINKING WATER SYSTEMS
DISTRIBUTION FOR FISCAL YEAR 2022



At the end of fiscal year 2019, these Non-PRASA drinking water systems were distributed as follows: 200 community systems located in the rural area throughout the Island and 61 non-community systems.

PUERTO RICO DRINKING WATER SYSTEMS
DISTRIBUTION FOR FISCAL YEAR 2019

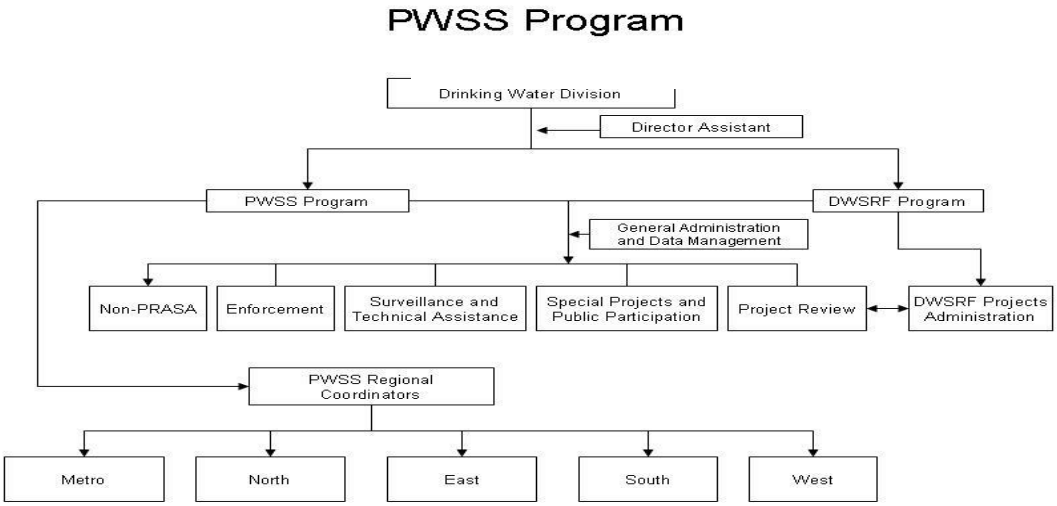


It is important to note that throughout the years the percent of population receiving drinking water from systems other than PRASA has ranged between 3% and 4%. This slight variation is due to the fact that throughout the years some systems are eliminated while new ones emerge.

Nevertheless, this percent has not increased significantly throughout the years due to the fact that the Commonwealth continues implementing an aggressive infrastructure program for consolidating systems and has established a series of initiatives to avoid the creation of non-viable systems while existing systems are assisted in their process of compliance.

III. Capacity Development Program Legal Basis

DOH is the lead agency and the administrator of the DWSRF as a result of the amendments to Act No. 5 through Act No. 193 of December 26, 1997, and thus, responsible for the establishment of control and prevention programs such as the Capacity Development Program since the inception of the DWSRF in 1997. The 1996 amendments to the Safe Drinking Act, also established prevention programs such as the Capacity Development Program, within others, under the Drinking Water Sate Revolving Loan Fund Program (DWSRF) at the Department of Health Drinking Water Division. The organization of the DWSRF Program and Drinking Water Division and the relationship of the different sections that manage the supervision of drinking water systems are described in the following chart.



The Department of Health, as the Primacy Agency (since 1980), is responsible for the supervision of public water supply systems (PWSS) and also for the protection of the public health of the people of Puerto Rico. Act No. 5 of July 21, 1977, enacted to "Protect the Purity of the Drinking Waters in the Commonwealth of Puerto Rico", grants the Secretary of Health the authority to "perform any or all such actions needed to carry out the purposes and requirements of this Act in order to assure safe and potable water.

The Department of Health promulgated the General Regulation for Environmental Health or Regulation Number 6090 which was approved in February 2000 to avail the enforcement of the law. Through this Regulation (Article II Drinking Water), the Code of Federal Regulations (CFR) (Part 40, parts 141, 142 and 143) is adopted by reference. The Environmental Health Regulation Number 7655 (also known as Regulation Number 135) was amended on December 29, 2008, and it continues adopting the federal regulations. Therefore, the Drinking Water Standards are also adopted, and these require, within others, that new drinking water systems and existing systems in operation after October 1, 1999, comply with sections 1419, 1420 and 1452 of the SDWA. Thus Act No. 5, as amended, and this Regulation, provide for DOH enforcement of the Capacity Development Program. Throughout the years of enforcement of the laws, under the DWSRF Program, this Department has continued outreaching the drinking water systems and has advised them of the new requirements of

the law while also offering assistance on this effect.[3] Up to date DOH has enforced section 1420 which is directly related to the DWSRF and no funds withholding (under the allotment of the DWSRF) has occurred.

DOH continues exercising its authority in order to limit the development of new drinking water systems. In a yearly basis an Attorney General Opinion ratifies this authority. This is evidenced to EPA with the capitalization grant application. In order to exercise its authority on the new systems, DOH is using certain processes, procedures and requirements developed for the evaluation of new systems/projects during the permitting process. DOH continues implementing the Capacity Development Checklist which is the instrument for evaluating new systems and it includes all the above-mentioned requirements that must be satisfied in order to approve a new project. Throughout the years this checklist is revised and/or updated to incorporate any change in the regulations. This document is provided to proponents when they request orientation regarding the permitting process. As discussed in the Capacity Strategy, for each stage or phase in the permitting/endorsement process: development, construction, and operation, DOH developed the endorsement requirements of each stage or phase that must be complied with, prior to granting the corresponding endorsement required by law for the establishment of a new system. The use of the checklist has proven to be effective in limiting the creation of new systems, as well as a tool for assisting them in their compliance process.

DOH, as part of its responsibilities, issues comments to any new or proposed regulation related to permitting process at other agencies that may be issued and that may have an effect on the new requirements for the development of new systems. Also, coordination and agreements with other agencies have been established and have continued throughout the years to enable the assurance of projects/systems that can comply with the SDWA. As part of the implementation of the strategy DOH bears continuous advices to the systems on the new requirements established in the law. Up to date, DOH has evaluated thirty (30) proposed new NTNCWSs systems under these terms and only fifteen (15) new NTNCWSs commenced operation after 10/1/01. Prior years' data has been provided in previous reports. As it can be appreciated, during the last three years only ten (10) proposed new NTNCWSs were evaluated, only five (5) were approved but none (0) commenced operation. We have to mention that during FY 2018 DOH has registered a series of systems that their existence was unknown to this Department, but apparently, they were in operation. DOH became aware of these systems as a result of the resiliency actions and the assessment to the systems undertaken after hurricanes Irma and María; as it can be appreciated, 11 were registered. The following table discloses the new systems capacity development evaluations/determinations from FY 2020 to 2022.

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[3] Written communication letters, newspaper announcements, seminars, phone and direct orientation meetings and inspections have been used to advise the systems and the public in general of this requirement of the SDWA.

NEW SYSTEMS CAPACITY DEVELOPMENT EVALUATIONS/DETERMINATIONS											
Method(s) used to evaluate and verify program implementation	**Up to FY 13 ¤**	**FY 14**	**FY 15**	**FY 16**	**FY 17**	**FY 18**	**FY 19**	**FY 20**	**FY 21**	**FY 22***	**Total**
Proposed new CWSs	**2**	0	0	1	-	-	0	0	0	0	**3**
Proposed new NTNCWSs**	**7**	3	1	4	4	-	1	3	6	1	**30**
Approved new CWSs	**4**	0	0	0	-	-	1	0	0	0	**5**
Approved new NTNCWSs	**0**	2	2	1	-	2	0	1	3	1	**12**
New CWS's commenced operation after 10/1/01	**5**	0	0	0	-	-	0	0	0	0	**5**
New NTNCWSs commenced operation after 10/1/01	**5**	2	2	1	1	2	0	0	0	2	**15**
New CWS's that are not in compliance/reason for non-compliance	**-**	-	-	-	-	-	-	-	-	-	**-**
New NTNCWs that are not in compliance /reason for non-compliance	**-**	-	-	-	-	-	-	-	-	-	**-**
CWSs registered as a result of: - hurricanes Irma and María	**-**	-	-	-	-	11	-	-	-	-	**11**
- earthquakes	**-**	-	-	-	-	-	-	-	2		**2**
- other	**-**	-	-	-	-	-	-	-	-	1	**1**

Prior years' data has been provided in previous reports.
* Information as of September 2022.
**Only comments issued.

IV. Efficacy of the Strategy

The 1996 amendments to the SDWA states that systems must have *technical*, *managerial* and *financial* capability in order to consistently provide safe drinking water and ensure compliance with the requirements of the SDWA. The Capacity Development Program encompasses these requirements. Following is a description of the three capacities:

- **Technical** - Physical and operational ability of a water system to meet the requirements of the Act and it refers to the physical infrastructure of the water system including the adequacy of the source water and the adequacy of a treatment, storage and distribution infrastructure, as well the ability of the system's personnel to adequately operate and maintain the system and implement required technical knowledge.

- **Managerial** - Ability of a water system to conduct its affairs in a manner that enables the system to achieve and maintain compliance with the Act and it refers to the system's institutional and administrative capability.

- **Financial** - A water system's ability to acquire and manage sufficient financial resources to allow the system to achieve and maintain compliance with the Act.

The Capacity Development Program deals with two types of systems: existing systems and new systems. Also, small systems are addressed by the Program through the Small Systems Strategy. This Strategy helps communities that are managing drinking water projects, meet technical, managerial, and financial requirements.

The DOH's Small Water Systems Strategy objectives are:

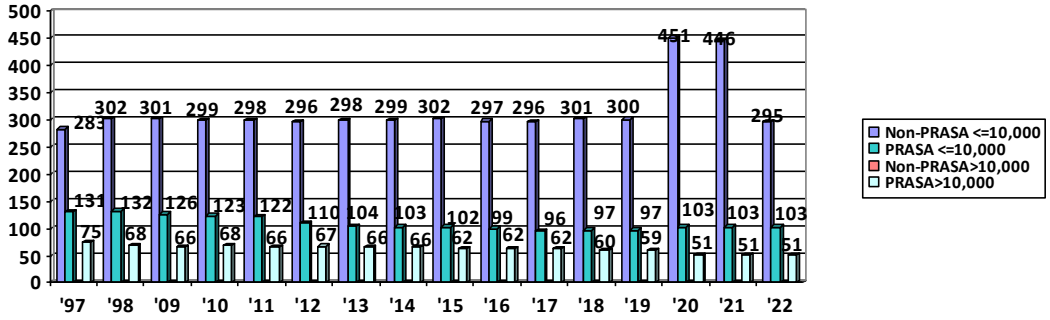
- connect Non-PRASA systems to PRASA projects, whenever possible;
- install disinfection equipment in all Non-PRASA systems;
- reduce the number of surface water systems;
- create a surveillance program to assure adequate operation and maintenance of the Non-PRASA systems;
- reduce the number of positive bacteriological results.

The main objective of Puerto Rico's Capacity Strategy is:

- to help, assist and assure the systems in their compliance with the SDWA;
- to avoid the development of new systems that will not comply with the Capacity Development Program and with the SDWA.

In general, DOH's strategies for dealing with drinking water systems have their basis on the enforcement and compliance mechanisms that the Federal and Commonwealth laws and regulations establish. Systems that are addressed are both PRASA and Non-PRASA systems. According to the service supplied there are PRASA systems and Non-PRASA systems. For Puerto Rico, the following graph presents the distribution of systems by population by type of systems (PRASA and Non-PRASA) since 2009 to date, although for comparison purposes, the results for fiscal year 1997 and 1998 are also included.

SYSTEMS BY POPULATION AND FISCAL YEARS



In order to assist the Non-PRASA systems in their process of compliance, DOH continues implementing the Non-PRASA Strategy that was approved by EPA since 1997. Continuously, this Strategy is under examination in order to improve assistance to systems. In compliance with the Strategy, Achievement Reports are submitted to EPA. As stated previously, this Strategy is incorporated as part of the CDS Strategy. It is important to note that not only the Non-PRASA but also PRASA systems are addressed in the CDS. During FY2022 DOH worked in the revision of the Capacity Development Strategy. The purpose of this revision was to incorporate the new regulations that required the states to include in their Capacity Strategy the promotion of Asset Management in drinking water systems. It is expected from the systems to prepare an asset management plan that will help them in the achievement and compliance process with the safe drinking Water Act.

Through the last twenty-three years DOH has gathered information that is useful for modifying of the CDS. In 1997, the Non-PRASA Strategy was established in order to assist systems in their compliance process. This Strategy is included as part of the CDS. The DWSRF Program has provided assistance to the PWSS Program in order to deal with these systems. As requested by EPA, and as a result of the implementation of both Strategies (CDS and NON-PRASA Strategy), new initiatives and in order to promote and increase the number of systems that attain compliance it was discussed and agreed with EPA that the revision of the existing Non-PRASA Strategy was necessary. DOH and EPA undertook that revision, and it was approved by EPA **in** November 2015. As a result of this revision, it was determined that beginning on fiscal year 2012 all the Non-PRASA systems are included in the Strategy. Therefore, accounting for the number of systems that have been eliminated from the Strategy since its inception to date becomes more difficult and it has always been difficult because there are always new systems that are registered. Also, since the implementation of the ETT and the change in standpoint when you evaluate a system as significant non-complier and/or *vs* systems with a score higher than 11 the two should not be used in conjunction for comparison purposes and/or for determination of inclusion or elimination from the Strategy. Reports will refer to the information based on the ETT and the new approach of inclusion of all systems. Thus, now with this changing policy all community water systems are included in the Small Systems Strategy which was also revised to become the Small Systems Strategic Plan.

Been a living document the strategy is open to incorporate new trends and changes that will favor and promote in drinking water systems the compliance with the SDWA. One new change in the regulations is the use and promotion of asset management in drinking water systems According to the

2018 America's Water Infrastructure Act (AWIA), Section 2012, state drinking water programs are required to "consider and include as appropriate asset management" into their state capacity development strategies. If we look into the law, the AWIA amended Section 1420 subsections (c)(2) and(c)(3) of the Safe Drinking Water Act (SDWA) as follows:

- "Section 1420(c)(2) of the SDWA concerns the content that a state shall consider, solicit public comment on, and include as appropriate in the state's capacity development strategy. The AWIA amended this subsection to add a sixth consideration:

  - (F) a description of how the state will, as appropriate-(i) encourage development by public water systems of asset management plans that include best practices for asset management; and (ii) assist, including through the provision of technical assistance, public water systems in training operators or other relevant and appropriate persons in implementing such asset management plans.

In compliance with the regulations this Department revised the Capacity Development strategy to incorporate asset management promotion. This process was undertaken during 2022 and the Final revised strategy was submitted in November 2022 and its approval was received in March 2023. DOH initiated the promotion though the use of written informative communication to all drinking water systems in 2023. Thus as we stated in the revision of the strategy it is the intention of this revision to consider and include "a description of how asset management will be promoted by the Department of Health in Puerto Rico's drinking water systems for them to establish asset management plans that include best practices for asset management and to provide such technical assistance to these public water systems in training operators or other relevant and appropriate persons in implementing such asset management plans.

As indicated, the revision of the Non-PRASA Strategy addressed and/or incorporated new issues and challenges of the Non-PRASA systems:

- inclusion of new community and non-community Non-PRASA systems,
- implementation of new regulations and future rules under development that require compliance[4],
- determination of Ground Water Under Direct Influence (GWUDI) systems,
- addition of new compliance assistance projects,
- addition of the Enforcement Response Policy (ERP) and the Enforcement Targeting Tool (ETT) as measurements of water quality and enforcement prioritization,
- asset management promotion in drinking water systems for them to establish asset management plans that include best practices for asset management.

[4] Long Term 1 Enhanced Surface Water Treatment Rule (LT1ESWTR), Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR), Stage 1 Disinfection By-Products Rule (Stage 1 DBPR), Stage 2 Disinfection By-Products Rule (Stage 2 DBPR), Groundwater Rule, Radionuclides Rule, Arsenic Rule, Total Coliform Rule (Revised).

According to the SDWA, by definition, a community water system (CWS's) is a “public water system which serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents”. The CWS’s are categorized as small public water systems serving as follows:

(I) a population of 10,000 or fewer but more than 3,300;
(II) a population of 3,300 or fewer but more than 500; and
(III) a population of 500 or fewer but more than 25.

In Puerto Rico we have CWS’s that are “very small” (serving fewer than 500 persons) or “small” (serving fewer than 3,300 persons). When the Non-PRASA Strategy was implemented in 1997 around 85% of Puerto Rico’s systems were small systems serving a population of 10,000 or less persons and 58% of those were Non-PRASA systems. By FY 2007, the number of total small systems serving a population of 10,000 or less increased to 88%, for a net increase of 3%, from which 60% were Non-PRASA systems for a net increase of 2%. This increase responded to an aggressive campaign of the Department for registering systems that existed but had no record as an existing system *vs.* the creation of new systems. It must not be disregarded the fact that due to the topography (mountainous) and inaccessibility of the source, it is very difficult and expensive for PRASA to provide drinking water to these small Non-PRASA community systems, thus there will always exist this type of system. It must be noted that by FY 2010, these percent were 86% and 61%, respectively, for a decrease of 2% and slight increase of 1%, respectively from FY 2007 to FY2010. The decrease of total small systems serving a population of 10,000 or less is due to the consolidation by PRASA of their small systems. During FY 2011 to FY 2013, the total small systems was maintained in an 86%, while the Non-PRASA small systems increased 3% from FY 2010. Notwithstanding that the total small systems was maintained in an 86% up to fiscal year 2014, there was a slight increase of 1% during fiscal year 2015, while the Non-PRASA small systems increased in a 4% when compared to FY 2011.

During this reporting period (FY 2020 to FY 2022), the results are as follows: the total percentage of small systems increased to 88% in FY2020 and 89% in 2021 but in 2022 decreased to 87% thus in general the 87% prevailed or, while the Non-PRASA small systems decreased in only one percent (1%) or 65% when they are compared to the FY 2019 respectively. The following table shows the above-mentioned data.

SYSTEMS BY POPULATION AND FISCAL YEARS																
SYSTEMS	**FY 97**	**FY 08**	**FY 09**	**FY 10**	**FY 11**	**FY 12**	**FY 13**	**FY 14**	**FY 15**	**FY 16**	**FY 17**	**FY 18**	**FY 19**	**FY 20**	**FY 21**	**FY 22***
Non-PRASA <=10,000	283	302	301	299	298	296	298	299	302	297	296	301	300	297	292	295
PRASA <= 10,000	131	132	126	123	122	110	104	103	102	99	96	97	97	103	103	103
Subtotal <=10,000	**414**	**434**	**427**	**422**	**420**	**406**	**402**	**402**	**404**	**396**	**392**	**398**	**397**	**400**	**395**	**398**
Non-PRASA >10,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PRASA >10,000	75	68	66	68	66	67	66	66	62	62	**62**	60	59	51	51	57
TOTAL SYSTEMS	**489**	**502**	**493**	**490**	**486**	**473**	**468**	**468**	**466**	**454**	**454**	**458**	**456**	**451**	**446**	**455**
% of Non-PRASA	**58%**	**60%**	**61%**	**61%**	**61%**	**63%**	**64%**	**64%**	**65%**	**65%**	**66%**	**66%**	**66%**	**66%**	**65%**	**65%**
% of Small Systems	**85%**	**86%**	**87%**	**86%**	**86%**	**86%**	**86%**	**86%**	**87%**	**86%**	**87%**	**87%**	**87%**	**88%**	**89%**	**87%**
* Data as of September **2022**																

A. Enforcement and Compliance Strategy for Small Community Water Supply Systems (Non-PRASA Strategy (NPS))

As previously stated, with the implementation of the Enforcement Targeting Tool (ETT), systems violations were assigned a weight or number of points based on the assigned threat to public health. We must emphasize that instead of accounting systems that had 4 or more violations in 12 consecutive months period as Significant Non-Compliers (SNC), points for each violation are added to provide a score for the water system. EPA prepares a list once the system reaches 11 points or more.

Within this section there are several tables that prove systems are moving towards compliance: Non- PRASA Systems in the Strategy with Disinfection FY 1996 to 2019, and Bacteriological Results in Non-PRASA Systems Included in the Strategy: FY 1996 to 2019). Previous years data based on the Significant Non-Compliers (SNC) is provided as ***Appendix F.***

During the reporting period ending September 2013, the systems included in the Non-PRASA Strategy that were having disinfection showed a slight decrease of 1%. For the reporting period ending September 2016, the systems included in the Non-PRASA Strategy that were having disinfection showed a decrease of 3%, when compared to September 2013.

As appreciated in the following table, during FY 15 to FY 16 the percent of systems disinfecting was maintained in 76%. From FY 2016 to FY 2017, the Non-PRASA that were having disinfection increased in 1% from 76% to 77%. During FY 2018 out of 241 the Non-PRASA systems, there are 182 or 75% that were having disinfection. There is a decrease of 2%. From FY17 to FY18 that may respond to the fact that two hurricanes hit the Island and the recovery process was delayed. Another reason may be that new systems may have been registered. For fiscal year 2019 out of 239 the Non-PRASA systems, there are 180 or 75% that are having disinfection. From FY 18 to FY 19 the percent was maintained in

75%. As of FY 2019 it has not been possible yet to increase the per cent to 77% as prior to the hit of the two hurricanes.

During this reporting period, for FY 2020 and FY 2021 out of the 239 Non-PRASA systems, there were 180 or 75% that were having disinfection; while for FY 2022, there was an increase of 1% (181 or 75%) in the Non-PRASA systems having disinfection. We can also observe an increase of 1% in the systems that were having disinfection when comparing FY 2019 to FY 2022. Although it is a small increase, it is an increase and no setbacks have occurred.

NON-PRASA SYSTEMS WITH DISINFECTION FROM FISCAL YEAR 2015 TO FISCAL YEAR 2022*								
	FY-15	**FY-16**	**FY-17**	**FY-18**	**FY-19**	**FY20**	**FY-21**	**FY 22**
Comm. Systems	248	242	240	241	239	**239**	**239**	**239**
Systems w/Disinfection	189	185	184	182	180	**180**	**180**	**181**
% Systems w/Disinfection	**76%**	**76%**	**77%**	**75%**	**75%**	**75%**	**75%**	**76%**

* **Prior year data is included in previous reports**

NOTE: We have to emphasize that all community water systems are included in the Non-PRASA Strategy since fiscal year 2012.

At the beginning of the previous reporting period (FY 2017) the Non-PRASA system's compliance with the Revised Total Coliform Rule (RTCR) requirement can be observed: from a total of 243 Non-PRASA systems, 22 bacteriology Maximum Contaminant Level (MCL) violations were reported in 17 systems, while for the bacteriology Monitoring /Reporting (MR) violations, a total of 1,619 MR violations were registered in 243 Non-PRASA systems. At the end of the period, from a total of 223 Non-PRASA systems, 5 bacteriology MCL violations were reported in five systems, while for the bacteriology MR violations, an increase to 2,133 violations was registered in 223 Non-PRASA systems.

At the beginning of this reporting period (FY 2020) the Non-PRASA system's compliance with the Revised Total Coliform Rule (RTCR) requirement can be observed: from a total of 239 no Non-PRASA systems, no bacteriology Maximum Contaminant Level (MCL) violations were reported in in the systems, while for the bacteriology Monitoring /Reporting (MR) violations, a total of 2,036 MR violations were registered in 205 Non-PRASA systems. At the end of the period, from a total of 239 Non-PRASA systems, no systems were reported with bacteriology MCL violations. A decrease from 2036 to 1331 violations was registered in 147 Non-PRASA systems for MR in bacteriology, a decrease in violations and a decrease in Non-PRASA systems.

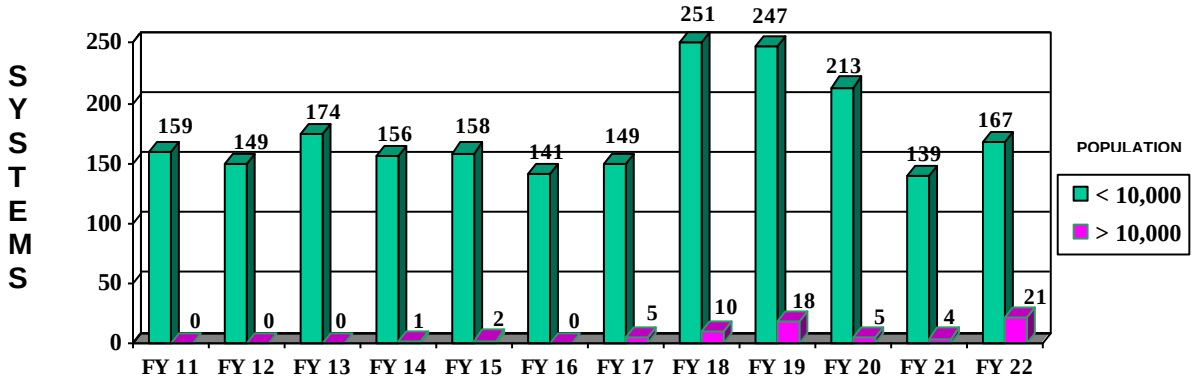
BACTERIOLOGY SUMMARY COMPLIANCE	**Non-PRASA**			**PRASA**		
	FY 2020	**FY 2021**	**FY 2022**	**FY 2020**	**FY 2021**	**FY 2022**
Systems in Violation	0	3	0	2	0	2
MCL violation	0	3	0	2	0	2
Systems in Violation	205	137	149	2	2	31
MR Violations	2036	1552	1331	2	2	32

Regarding Compliance and Surveillance Monitoring samples taken, following are the results for approximately 240 community systems:

Non-PRASA (Community Systems)	FY 2020	FY 2021	FY 2022
COMPLIANCE MONITORING			
Samples Taken	922	1,355	1,502
Negatives Results	918	1,348	1,485
Negatives Results %	99.5%	99.4%	98.8%
SURVEILLANCE MONITORING			
Samples Taken	1,187	1,696	1,616
Negatives Results	799	1,280	1,197
+Negatives Results %	67.31%	75.50%	74.07%

The following graph represents the distribution of systems with violations by type and population. Now and since fiscal year 2012 named Systems with the Most Serious or Repeated Violations in Puerto Rico. Please refer to ***Appendix F*** for the previous years' data, based on the SNC calculation.

TOTAL SYSTEMS WITH BACTERIOLOGY AND TURBIDITY VIOLATIONS BY POPULATION BY FY's



During 2011 and 2012 it can be observed that in FY 2011 there were 159 systems in violation with a population of less than 10,000 out of which 158 were Non-PRASA systems and one was a PRASA system, and in FY 2012, there were 149 systems in violation, with a population of less than 10,000, all of them Non-PRASA systems, this trend continued decreasing as well as up to 2014, with a variance in 2013 due to new regulations applicable during that year.

Also, for FY 2013, there were 174 systems in violation with a population of less than 10,000, all of them non-PRASA systems. In FY 2014, there were 154 systems in violation, where one was a PRASA system with a population greater than 10,000 and 153 were Non-PRASA systems with a population less than 10,000. For fiscal year 2015 there were 158 systems in violation with a population of less than 10,000, all of them non-PRASA systems, while for FY 2016 there were 141 systems in violation with a population of less than 10,000.

For FY 2017, there were 154 systems in violation: 149 systems with violations with a population of less than 10,000, and 5 PRASA systems. In FY 2018, there were 261 systems in violation: 251 violations in systems with a population of less than 10,000, and 10 PRASA systems. By the end of FY 2019 there was a total of 265 systems in violation: 247 with a population of less than 10,000, and 18 were PRASA systems with a population of 10,000 or more and there were 9 which were violations in PRASA systems with a population of less than 10,000.

For this reporting period the following is observed. For FY 2020, there were 218 systems in violation: 213 systems in violations with a population of less than 10,000, and 5 PRASA systems. In FY 2021, there were 143 systems in violation: 139 systems in violations with a population of less than 10,000, and 4 PRASA systems. By the end of FY 2022 there was a total of 188 systems in violation: 167 with a population of less than 10,000, and 21 were PRASA systems with a population of 10,000 or more and there were 18(5) which were violations in PRASA systems with a population of less than 10,000.

Notwithstanding, up to fiscal year 2016 there was a decreased tendency, when compared to the beginning of the Strategy, for both PRASA and Non-PRASA systems' population less than 10,000. It is necessary to point out that the increase in systems in violation for fiscal year 2018 was due to the Hurricanes Irma and Maria that struck Puerto Rico during September 2017. These hurricanes affected the monitoring and compliance of, mainly, the small systems. Although for fiscal years 2017 and 2018 violations were registered, these were not accounted nor reported, as EPA granted a waiver in this regard. From fiscal years 2018 to FY 2019 the number of systems in violation increased from 261 to 265. We need to continue emphasizing that since the implementation of the Strategy and up to fiscal year 2017, when the two hurricanes stroke, the general trend was the reduction of systems in violation and the increase in systems disinfecting. From fiscal year 2020 to 2022 the number of systems in violations decrease from 265 by the end of FY 2019 to 188 at the end of FY 2020. The decrease began in FY 2020 with 218 in comparison to FY 2019 where there were 265.

Regarding the Capacity Development and the DWSRF programs the term "historical significant noncompliance (HSNC)" and "significant noncompliance" (SNC) are to be interpreted as systems with ETT scores of eleven (11) or greater. This policy change began in fiscal year 2010 but was effective in January 2013 when the ETT file and new ETT scores trackers were available for download. Currently systems are being evaluated using the *Enforcement Targeting Tool (ETT).* The ETT approach replaces the existing contaminant by contaminant compliance Strategy with one that focuses on the drinking water systems with the most serious or repeated violations or SMSRV for its abbreviation by initials. Under this new approach, the states <u>will not</u> be required to submit a list of HSNCs every three years. It uses a targeting tool/formula as a model for escalating responses to violations in a timely and appropriate response. This new strategy brings the systems with the most significant violations to the top of the list for enforcement actions in states. The ETT enables the prioritization of PWS by assigning each violation a "weight" or number of points based on the assigned threat to public health. Points for each violation of a water system are summed to provide a total score for that public water system (PWS). A PWS that incurs in a system score of 11 points or greater is considered as in Significant Noncompliance with the National Primary Drinking Water Regulations (NPDWR) and is subject to the required enforcement actions.

As previously stated, the Department of Health implemented in the Public Water Supply Supervision Program (PWSS) actions to reflect the new Enforcement Response Policy (ERP) and the

[5] These 18 systems are included within the total 167 systems with a population of 10,00 or less.

Enforcement Targeting Tool (ETT). Since fiscal year 2010, DOH completed the transition from the evaluation of systems through the traditional Historical Significant Non-Compliance (HSNC) to the new EPA enforcement approach, the ETT and continues working with this new approach.

It is the intention that the list generated as part of the ETT can be used as one of the ways to identify systems that may lack technical, managerial, and financial capacity (TMF) and prioritizes the assistance that can be provided. This Department, instead of reporting SNCs, will be indicating which of those new community and non-transient non-community water systems has had, at any point during the first three years of operation, unaddressed violations that incurred an ETT score greater than or equal to 11. Under the Enforcement Response Policy (ERP), these systems are considered a priority system by EPA. This is a tool to determine steps to help the systems return to compliance. Priority is awarded to systems with a higher population.

As stated, DOH completed the revision of the Non-PRASA Strategy (NPS), which is included in the Capacity Development Strategy. This strategy was revised with the purpose of using or applying the ETT concept thus now all systems are included and are ranked based on the ETT. DOH has complied with the quarterly reporting required with the ETT and it is the intention to continue doing so, as well as to provide certain information/details related to the ETT in this Capacity Development Report. DOH will update the tables presented in this report to cope them with the change from SNC to the ERP/ETT approach. Therefore, no reference will be made hereinafter to SNC systems. Data up to FY 2017 can be found in ***Appendix F***. According to ERP/ETT lists submitted by EPA up to FY-2020-2022, the total number of systems with score equal or above 11 were:

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SYSTEMS WITH SCORES GREATER THAN 11 FROM FY 2020 to FY 2022												
Systems	2020				2021				2022			
	Jan	Apr	Jul†	Oct	Jan	Apr	Jul	Oct	Jan	Apr	July	Oct
PRASA	37	16	18	22	15	21	7	2	6	7	4	4
Non-PRASA Private	3	5	6	6	6	7	6	8	4	6	7	10
Non-PRASA Communities	47	57	59	58	58	40	44	44	31	29	86	87
Total	**87**	**78**	**83**	**86**	**79**	**68**	**57**	**54**	**41**	**42**	**97**	**101**

† Due to the extreme circumstances resulting from the hurricanes Irma and Maria violations corresponding to the next quarter after the hurricanes were not registered. Also, data entry was not possible due to problems with the software of SDWIS, which has delayed the register of violations corresponding to the following months. We have to point out that extreme conditions resulting from the hurricanes Irma and María impaired the ability to continue the regular tracking needed to work the quarterly ETT list. During the months of September through December 2017 and as an exception, violation were not registered in the SDWIS. Moreover, DOH has encountered software difficulties when entering the data corresponding to the quarter of July and October 2018. This was known to EPA and EPA worked on the access to the SDWIS system to register this information.

Great effort was required to address the needs and problems of these small systems in order to attain compliance based on the fact that there are limiting factors that in conjunction with the applicable regulations hinder their ability to comply.

From FY 2014 to FY 2019 the data[6] regarding the number of systems in terms of bacteriology and turbidity violations is as follows:

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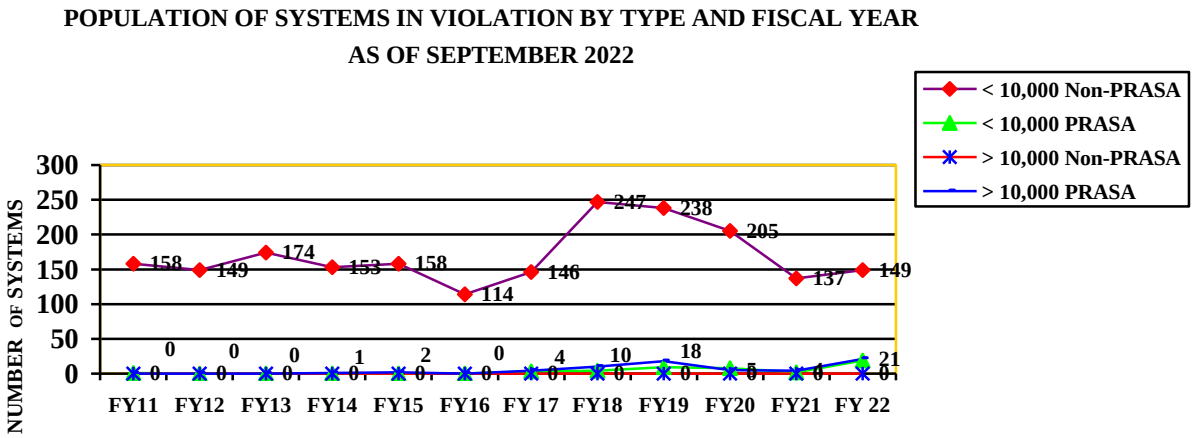
BACTERIOLOGY AND TURBIDITY VIOLATIONS FORM FY 2014 TO FY 2022												
		PRASA MCL		PRASA MR			Non-PRASA MCL		Non-PRASA MR			
Fiscal Years and Population Range		BACT	TURB	BACT	TURB	Total PRASA	BACT	TURB	BACT	TURB	Total NON-PRASA	TOTAL
FY-14	>10,000	0	0	1	0	1	0	--	0	--	0	**1**
	<10,000	0	0	0	0	0	8	--	145	--	153	**153**
Total		**0**	**0**	**0**	**0**	**1**	**8**	**--**	**145**	**--**	**153**	**154**
FY-15	>10,000	0	2	0	0	2	0	--	0	--	0	**2**
	<10,000	0	0	0	0	0	6	--	152	--	158	**160**
Total		**0**	**2**	**0**	**0**	**2**	**6**	**--**	**152**	**--**	**158**	**160**
FY-16	>10,000	0	0	0	0	0	0	--	0	--	0	**0**
	<10,000	0	0	0	0	0	7	--	134	--	141	**141**
Total		**0**	**0**	**0**	**0**	**0**	**7**	**--**	**134**	**--**	**141**	**141**
FY-17	>10,000	1	2	0	2	**5**	0	0	0	0	0	**5**
	<10,000	0	2	0	1	**3**	8	0	138	0	146	**149**
Total		**1**	**4**	**0**	**3**	**8**	**8**	**0**	**138**	**0**	**146**	**154**
FY-18	>10,000	1	5	3	1	**10**	0	0	0	0	0	**10**
	<10,000	0	2	2	0	**4**	0	0	247	0	247	**251**
Total		**1**	**7**	**5**	**1**	**14**	**0**	**0**	**247**	**0**	**247**	**261**
FY-19	>10,000	2	7	8	1	**18**	0	0	0	0	0	**18**
	<10,000	2	1	6	0	**9**	5	0	233	0	238	**247**
Total		**4**	**8**	**14**	**1**	**27**	**5**	**0**	**233**	**0**	**238**	**265**
FY-20	>10,000	1	3	1	0	**5**	0	0	0	0	0	**5**
	<10,000	1	6	1	0	**8**	0	0	205	0	205	**213**
Total		**2**	**9**	**2**	**0**	**13**	**0**	**0**	**205**	**0**	**205**	**218**
FY-21	>10,000	0	3	1	0	**4**	0	0	0	0	0	**4**
	<10,000	0	1	1	0	**2**	0	0	137	0	137	**139**
Total		**0**	**4**	**2**	**0**	**6**	**0**	**0**	**137**	**0**	**137**	**143**
FY-22	>10,000	1	5	15	0	**21**	0	0	0	0	0	**21**
	<10,000	1	1	16	0	**18**	0	0	149	0	149	**167**
Total		**2**	**6**	**31**	**0**	**39**	**0**	**0**	**149**	**0**	**149**	**188**

As we have indicated, for the previous reporting period it can be appreciated, that the Non-PRASA systems with the most serious or repeated violations increased from 141 in FY 2016 to 146 at the end of fiscal year 2017. In FY 18 the scenario changed dramatically and there is an increase in systems with the most serious or repeated violations from 146 in FY 2017 to 247 at the end of fiscal year 2018. As previously indicated, this increase comes as a result of the impact of hurricanes Irma and Maria and the registration of existing systems that became known when these requested resiliency remedies for the damages received in their systems. However, it must be noted that in fiscal year 2019 the Non PRASA violations decreased to 238, while PRASA's systems violations increased to 18.

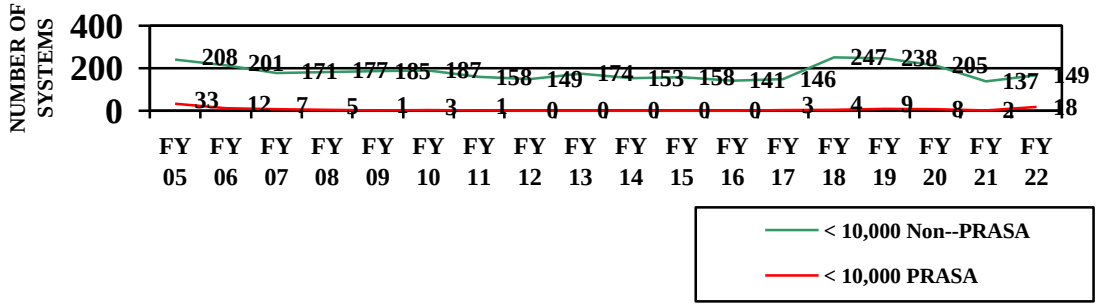
For this reporting period it can be appreciated, that the Non-PRASA systems with the most serious or repeated violations decreased from 247 in FY 2019 to 167 at the end of fiscal year 2022. In FY 2021 the scenario changed dramatically and there is a decrease in systems with the most serious or repeated violations from247 in FY 2019 to 139 at the end of fiscal year 2021. As previously indicated, this decrease may respond possibly to the efficacy of the resiliency efforts of the government in coordination with the NGO organizations where possibly resiliency efforts increase not only as part of the recovery from the hurricanes but as part of the recovery of the pandemic and the earthquakes. We cannot disregard that in 2022 we had hurricane Fiona that brought a set back and the number of systems increased from 139 in FY 2019 to 167 in FY 2022Also there is a possibility that some existing systems became registered. The registration of existing systems became known when these requested resiliency remedies for the damages received in their systems. It must be noted that in fiscal year 2022 not only the Non PRASA violations increased to 167 but also the PRASA's systems violations that increased from 18 in FY 2019 to 21 in FY 2020 notwithstanding that in 2020 and 2021 they had a marked decrease from 18 to 4.

The following graph represents the distribution of systems with the most serious or repeated violations since fiscal year 2012) in Puerto Rico by type and population from the last three reporting periods (FY 2011 to 2022):



Behavior of systems with the most serious or repeated violations since fiscal year 2005) in terms of bacteriology and turbidity by type and population can be appreciated in the following graphs:

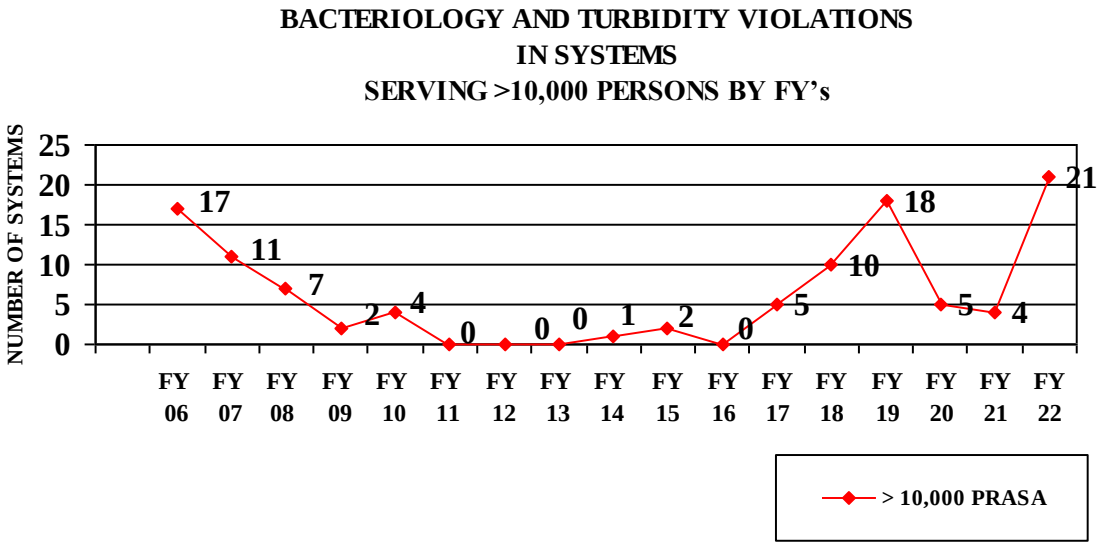
BACTERIOLOGY AND TURBIDITY SYSTEMS SERVING <10,000 PERSONS BY FY's



As of today, the Non-PRASA Strategy has been in implementation since 1996. It was established with the purpose of bringing these small systems to compliance with Commonwealth and Federal regulations. Throughout these years EPA has recognized this strategy as a successful approach in bringing these systems to treatment and compliance.

Due to the changes as a result of the implementation of the ETT, systems classification has varied. In accordance with the priorities established in the Non-PRASA Strategy, revised as of November 2015, the number of systems with more than 11 violations reported had a noticeable decrease. The revised Strategy is a great tool in the assistance provided to the systems towards attaining their compliance goals. Once a system reaches more than 11 violations, it becomes a priority to attend. For FY 17 and FY 18 the difficulties encountered by the systems in complying after the hurricanes was evident and thus the number of systems with violations had an increase not withstanding that at the end of FY19 they started to diminish. As we stated previously during this reporting period, the number of systems with violations that had an increase in 2019 to 265 in this reporting period this number began to diminish in 2020 to 2018 and to 143 in 2021 although by the end of this reporting period there was an increase. Notwithstanding the increase it is still below the closing number of FY 2019.

As it can be appreciated, DOH initiated the capacity development effort in assisting these small systems with the Non-PRASA Strategy included as part of the Capacity Development Strategy, which directs its exertions through different approaches covering and providing assistance in the main three areas of capacity: technical, financial and managerial; aspects that comprise capacity development program.



In terms of technical assistance, within others, upgrading of the existing system infrastructure is emphasized, as well as connection of the system to PRASA is a managerial aspect that requires consideration. In terms of financial assistance, the identification of sources of funds is vital for the success of the managerial and technical assistance, which through the effort of establishing partnerships fosters this economic help. Now in addition the strategy was revised during FY2022 to incorporate asset management which is an additional tool for the systems to use and improve their compliance with the SDWA.

Nonetheless throughout the years, limiting factors have continued impairing the systems' ability of achieving and maintaining compliance with the applicable drinking water standards. Therefore, consistently providing safe water is a major challenge. Besides limited accessibility by the topography isolation, there are also other factors that hinder and weaken their compliance process, as well as the assistance that can be provided to them.

DOH continues testing this new approach in order to combine efforts for identifying, if any, the existence of new limiting factors in addition to those that have been identified as a result of prior pilot projects undertaken and examine if these and the new ones as well as to what extent these prevailed in the different aspects of capacity that hinder the total capacity of the systems. These limiting factors are summarized as follows:

LIMITING FACTORS		
Technically	**Managerial**	**Financially**
Lack of infrastructure required as well as the operational ability	Lack of personnel or stable staff	Lack of ability in acquiring, increasing, and managing financial resources,
Problems related, or associated to the source	Lack of organization	Lack of knowledge and mechanisms for implementing a source of revenue.
Adequate treatment not available	Small or very small systems, do not have with adequate expertise for acting as owners, and or operators	Limited/Low family income
Lack of trained and experienced	High turnover of personnel or staff of	Inability to comply with financial

LIMITING FACTORS		
Technically	**Managerial**	**Financially**
operating personnel	the directing or governing board.	requirements
Lack of knowledge on compliance requirements	Lack of knowledge on sources of funds available for compliance.	

DOH has undertaken several approaches to assist systems in their process of compliance. In turn, the assistance process has provided valuable information on the conditions of the systems.

As part of the assistance process, DOH has been able to identify in most of the small systems in Puerto Rico one or more of the these limiting factors which are directly associated to their ability to attain capacity and thus compliance with the law.

Together with the above-mentioned ones there are other factors that hinder the system's ability to comply and that impact directly the public health of the population served by the system:

LIMITING FACTORS		
Technically	**Managerial**	**Financially**
Lack of awareness or understanding of health effects or impacts on systems malfunctions or inadequate treatment.	Recalcitrant communities that remain in the strategy demonstrate no interest in improving their water system and are not receptive to assistance	Lack of resources to pay for the operation of the system/lack of personnel willing to take responsibility for the operation of the system
Non-compliance of the system with mandatory requirements	Limited access to outreach programs	Lack of follow-up or continuity to/or of required activities
Limited scholarly	Inability to qualify for financial assistance	Increase in cost of sampling and monitoring,

With the implementation of different pilot projects throughout the years DOH has been able to minimize and/or eliminate certain limitations of the communities, but also in this process has been identified other limiting factors:

LIMITING FACTORS		
Technically	**Managerial**	**Financially**
Poor sanitary conditions / non-performance of necessary sanitary improvements	Lack of stable/permanent board of directors and general personnel	General global economic rescission.
Non-performance of regulatory monitoring	Inadequate source protection / unauthorized source access	Inability to allocate funds and insufficient income
Poor or inadequate constructed infrastructure	Potential high risk of contamination	High infrastructure and operational costs (energy costs)
Lack of certified operators	They don't like the government telling them what they have to do	There are less persons willing to cover the expenses of the operation of the systems

LIMITING FACTORS		
Technically	**Managerial**	**Financially**
Lack of storage/distribution tank cleaning	Most of the operators offered voluntary work and it is difficult to demand a better performance from them	
Lack of operation and maintenance manuals		
Existence of cross connection		
	Difficulty in the compliance with the bureaucratic processes of the concerning agencies, due to the need to create more flexible procedures, especially for the permitting process Need to train community drinking water systems' management personnel in the processes and procedures that need to be undertaken for permitting	
Extremely aged and fragile or obsolete infrastructure whether drinking water or the electric power supply for drinking water systems including alternate ones for back-up for the existing ones	Lack of human resources, equipment, materials and others for undertaking repairs, replacement or construction.	Lack of financial resources

We have to point out that due to Hurricanes Irma and María new limiting factors have emerged during FY 2018 that constitutes a challenge to the government in the resiliency efforts to maintain in operation small drinking water systems serving safe and potable water.

NEW LIMITING FACTORS CAUSED BY HURRICANES IRMA AND MARIA		
Technically	**Managerial**	**Financially**
Lack of electric power to run the system Poor electric infrastructure due to lack of maintenance or resources for maintenance Lack of generators Lack of gas	Communities, although they had interest in the acquisition of the necessary tools to put back into operation their water system, the availability of the equipment was limited *i.e.* the increase in the demand for solar panels / generators was not compatible with the availability of the equipment provided by different entities, including central government and federal entities such as FEMA, COE, etc. Bureaucratic processes for the	Lack of resources to pay for alternative methods such as power generators and gas for the operation of the system. If the financial resources were available, the accessibility to them was impaired by long-line hours spent to receive the service/article needed and limited amount of the items.

NEW LIMITING FACTORS CAUSED BY HURRICANES IRMA AND MARIA		
Technically	**Managerial**	**Financially**
	acquisition of equipment	
Destruction of aqueduct/pipes due to landslides	Bureaucratic processes for the acquisition of equipment and human resources	Although funds were assigned their distribution and accessibility was limited.
Destruction of the treatment and disinfection systems	Bureaucratic processes for the acquisition of equipment and human resources for installation and operation	Although funds were assigned their distribution and accessibility was limited.
Lack of accessibility to the systems due to road destruction caused by landslides	Limited equipment availability due to the general demand cause by the emergency	Although funds were assigned their distribution and accessibility was limited.

As previously indicated it must not be disregarded that the earthquakes during the months of May and August 2020, combined with the ongoing coronavirus pandemic and the flooding of July 2020 and another recently during FY 2022, offered new challenges that the systems need to overcome. The recovery efforts were seriously affected and limited with the pandemic lockdown and curfews established. This whole scenario has intensified the existing and prevailing limiting factors. The recovery efforts and resiliency activities are constantly impaired although we cannot disregard the environmental threats and health concerns that needed to be addressed in the process of assistance. As of today, we continue dealing with the ongoing coronavirus pandemic and recently the flooding at the beginning of year 2022.

NEW LIMITING FACTORS CAUSED BY ENVIROMENTAL CHALLENGES OF THE EARTHQUAKES, FLOODING, PREVALING PANDEMIC, LOCKDOWN AND CURFEW		
Technically	***Managerial***	***Financially***
Collapse of electric infrastructure due earthquakes and fragility (aged) and pending replacement/reconstruction due to lack of resources Delay in the flow of government funds/ lack of economic resources limitations of staff due to the pandemic and to the resulting unemployment due to lockdown	Communities although wanting to acquire the necessary tools to restart operation of their water system, the availability of the equipment was limited due to the pandemic/accessibility worldwide and lockdown /curfew established by the central government and in some cases by municipal government. Access to federal entities such as FEMA, COE, was limited due to the pandemic delaying access and the bureaucratic processes for the acquisition of equipment. Eligibility criteria subject to emergency declaration of municipalities	Lack of fiscal resources (savings) for immediate purchase of alternative methods, or replacement of existing infrastructure of the system. Lack of equipment/machinery and financial resources to provide accessibility to the community /system. Long-time spam to access services or resources and limited amount of the items due to the lockdown and curfew (*i.e.* gas, water, generators)
Destruction of the treatment and	Increased bureaucratic	Limited access to funds/ slow pace

NEW LIMITING FACTORS CAUSED BY ENVIROMENTAL CHALLENGES OF THE EARTHQUAKES, FLOODING, PREVALING PANDEMIC, LOCKDOWN AND CURFEW		
Technically	***Managerial***	***Financially***
disinfection systems including destruction of aqueduct/pipes due to landslides caused by flooding and earthquakes and access to the systems. Increase demand for appurtenance	processes and requirements that delay the award of funds lack of and Limited equipment availability due to the general demand cause by the emergency.	for disbursement of funds

Although more than two years has passed since the atmospheric events and the determination of a pandemic these two conditions prevailed during this year and have taken a toll in the financial aspect of the island which was already lacerated from the prior year's incidents. The financial situation continues in deterioration, and we cannot disregard that it is subject to the impact of PROMESA on it. Movement and flow of funds is limited to PROMESA and their authorization. In terms of the limiting factors, we have revised/modified and clarified others during this year as follows without disregarding those identified last year.

LIMITING FACTORS CAUSED BY THE PREVAILING EARTHQUAKES, AND THE CORONAVIRUS PANDEMIC		
Technically	**Managerial**	**Financially**
Damaged and destruction of electric infrastructure due to seismic events that provoked lack of electric power to run the system and Lack of sufficient replacement materials Lack of alternate "temporary" resources to replace or substitute damaged infrastructure Lack of continuous operation of the electric system due to aging infrastructure	Communities although they may have interest in the acquisition of electric power replacement equipment to put back into operation their water system, they require operators or trained and qualified personnel in the installation/management of electric power system such as electricians and electric engineers among others. Lack of manpower or human resources. The availability of the equipment was limited due to *i.e.* the increase in the demand for solar panels/generators and lack of compatibility with the available equipment. Systems are unable to comply with the bureaucratic requirements needed to approve funds or replacement equipment that could be permanently installed versus temporary during the initial emergency such as that provided by FEMA, COE, etc.; Lack of personnel qualified or with	Lack of resources to pay for alternative or replacement infra-structure equipment or methods such as solar panels and batteries, the power generators and gas for the operation of the system. If the financial resources were available, the accessibility to them was impaired by inability to comply with require-ments.

LIMITING FACTORS CAUSED BY THE PREVAILING EARTHQUAKES, AND THE CORONAVIRUS PANDEMIC		
Technically	**Managerial**	**Financially**
	expertise at the system to put in operation replacement equipment	
Damage /destruction of aqueduct/pipes due to seismic action	Bureaucratic processes for the replacement, construction or substitution of equipment /infrastructure and human resources	Identification of funds
Damage/destruction of the treatment and disinfection systems	Bureaucratic processes for the acquisition of equipment and human resources for maintenance replacement and or operation	Accessibility of funds is limited.

We must indicate that under PROMESA the government has moved to make required changes particularly in the structure of the government. Particularly these changes are focused initially in the Puerto Rico Power and Energy Authority because this agency is still in the process of restructuring its debt. Moreover, due to the fragility and aged infrastructure, the inability to recover the system after the hurricanes is that the changes were inclined towards the privatization of part of this agency. This change has directly impacted on the drinking water systems. The change is related to the distribution of electric power. In Puerto Rico the distribution of electricity was privatized and currently is now under a public-private partnership/contract. Now there is a contract with a private entity that is responsible of dealing with the distribution of electricity while the generation is under the government. The entity named Luma is responsible of repairing, changing, and replacing all the electric distribution system including among other poles, luminaries, cables. Thus, they are in charge of all the electricity distribution in Puerto Rico including its maintenance. Now they have been in charge of this for a year. During this year of operating and managing the distribution system the consumers in general were not satisfied. Although we recognize that the infrastructure of Puerto Rico is a very old and fragile infrastructure the response of these managers has not been to the satisfaction of many. We have serious power outages that last longer in time thus this is causing the drinking water systems that rely on electricity cannot operate and the communities lack potable water. In turn the government and PRASA has to move to provide water thus increasing the cost of water in general. Another situation affecting the systems is the increases in cost of energy due to the increase in cost of petroleum due to the global situation and the war. This is making the service more expensive to the consumers.

LIMITING FACTORS CAUSED BY THE FRAGILITY OF THE INFRASTRUCTURE AND NEW OPERATOR OF THE ELECTRICITY DISTRIBUTION SYSTEM		
Technically	**Managerial**	**Financially**
Damage / destruction of electric system of drinking water systems due to power outages	Bureaucratic processes for the repair or replacement, or substitution of equipment / infrastructure and human resources	Inability to identify funds

LIMITING FACTORS CAUSED BY THE FRAGILITY OF THE INFRASTRUCTURE AND NEW OPERATOR OF THE ELECTRICITY DISTRIBUTION SYSTEM		
Technically	**Managerial**	**Financially**
Damage/destruction/interruption of the treatment and disinfection system/processes	Bureaucratic processes for the acquisition of equipment and human resources for replacement and or operation/ maintenance	Accessibility to funds is limited due to global increases in cost and war

It has been established that the non-compliance of the small systems is due to their inability to deal with respect to the 3 areas of concern: technical, financial, and managerial, compared to systems with a population greater than 10,000. Larger systems (PRASA's) are more capable of stabilizing that area or that one aspect where the non-compliance focuses.

Most of the systems in significant non-compliance or systems with the most serious or repeated violations are concentrated in the systems with a population of 10,000 or less. It must not be disregarded those changes in the water quality standards, to more stringent ones will always affect the compliance status of the systems if provisions are not taken and resources in the three areas of capacity are not invested.

These findings have been applied in order to deal with the small systems and are considered or included in the "Capacity Development Program: Existing Water System Capacity Assurance Strategy, final July 2000 (the Strategy). The Capacity Development Strategy continues enhancing actions initiated by DOH through Non-PRASA Strategy in order to fully cover the three areas and assist the small systems (whether PRASA or Non-PRASA). In general, strategies are subject to change and are open to changes and variations. Implemented strategies are subject to reevaluation based on predictable situations encountered, which require adjustments in its implementation to make it more feasible.

Among the re-evaluation/revision undertaken by DOH is the Non-PRASA Strategy[7], which, in coordination with EPA Caribbean Environmental Protection Division (EPA CEPD), incorporated new approaches in the management and enforcement process for the systems including sustainability. This revision, approved by EPA in November 2015, considers, within others, the possibility of establishing a plan that accounts and assigns priorities in dealing with the systems, according to the population that they serve, and public health risks associated. A high priority is systems that serve schools. Categorized groups could be treated separately with specific action plans responding, up to a certain extent, to case-by-case needs. Since the revision of the Strategy, it has been possible to concentrate the follow-up to the systems with greater population and systems with schools. Also, it has been possible to lower the number of systems with a score greater than 11.

Now the new trend is the revision of the strategy for the incorporation of asset management into it. Currently DOH initiated the revision of the strategy in order to incorporate the promotion of asset management in the drinking water systems emphasizing particularly small systems. The revision process has been delayed due to the general conditions of the pandemic that has affected seriously. Moreover, in Puerto Rico besides the pandemic that we continue undergoing with serious positivity indexes and death tolls, we still have the series of earthquakes now for two years causing damages

[7] The Non-PRASA Strategy and the Capacity Development Strategy are separate documents. The Non-PRASA Strategy is used under the PWSS Program. As a result of its approval in November 2015 it is now called Revised Enforcement and Compliance Strategic Plan for Non-PRASA Public Water Systems. The Capacity Development Strategy is used under the DWSRF Program.

and interruption in the government activities particularly due to the loss of electric power outages. Our expectation was to be able to comply with the deadline of December notwithstanding all the setbacks. To this effect during 2022 the Strategy was revised to incorporate mechanisms that make viable the promotion of asset management in the systems.

As previously mentioned, initially there were 232 community water systems selected and included in the Non-PRASA Strategy. Since its inception in 1997 and up to fiscal year 2016, a total of 81 systems have been eliminated. For the last reporting period (2014, 15 and 16) a total of seventeen (17) systems were eliminated. As previously stated, these systems may have been eliminated because either they have been connected to PRASA or have been rehabilitated and are under adequate operation and maintenance or have been eliminated as a system from DOH's system inventory. Because now, and since FY 2015 when the NON- PRASA strategy was revised, and all systems were included in the strategy, the accounting of systems included initially and leaving the strategy because they returned to compliance cannot longer be accounted, thus, they will not be reported.

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NON-PRASA SYSTEMS ELIMINATED FROM NON-PRASA STRATEGY- FYs 1997 to 2016		
Fiscal Year	**Included**	**Eliminated**
1997	232	--
1998	220	--
1999	220	12
2000	214	6
2001	210	4
2002	207	3
2003	205	2
2004	205	0
	Total 1997-04	**27**
2005	200	5
2006	196	4
2007	195	1
	Total 2005-07	**10**
2008	194	5
2009	186	10
2010	2	4
	Total 2008-10	**19**
2011	182	2
2012**	296	5
2013	298	1
	Total 2011-14	**8**
2014	299	3
2015	248	4
2016^	242	10
	Total 2014-16	**17**
	GRAND TOTAL NON-PRASA SYSTEMS ELIMINATED FROM THE STRATEGY	**81**
** The Non-PRASA Strategy revision was approved in November 2015. As a result of this revision, it was determined that beginning on fiscal year 2012 all the Non-PRASA systems are included in the Strategy, disregarding whether they are SNC or not.		

As a result of the implementation of the ETT, the classification of the systems varied. DOH understands that after the implementation of the Non-PRASA Strategy and where there have been several changes in the applicable regulations, the use of the ETT, and changes in reporting, there was a need to cope all these changes and methods by revising the Non-PRASA Strategy.

Following is a summary of the compliance with the Drinking Water Regulations regarding disinfection treatment and bacteriological compliance at the Non-PRASA systems that are included in the Strategy.

A significant public health issue is whether drinking water systems are or are not providing any treatment or disinfection to the water they serve. Throughout the years the Non-PRASA Strategy has been working and continues working to increase the number of system that initiate and/or maintain the treatment and/or disinfection process and thus reduce the number of positive bacteriological samples.

During the last twenty-six years of implementation of the Non-PRASA Strategy included in the Capacity Development Strategy this has been achieved. From the implementation of the strategy up to date there has been a 21% (averaged) of increase in the systems that are disinfecting. When comparing the results at the end of FY'14, and FY'16, a 76% of the systems were having disinfection, for a slight decrease of 2%. During the previous reporting period (October 2017 to September 2019) the community systems included in the Non-PRASA Strategy that are having disinfection decreased to 75%, showing a small decrease of 1% when compared to fiscal year 2016. This decrease is due to the fact that the number of community systems have may increase particularly after the hit of the two hurricanes because there were a number of systems that appeared to be operating but were not registered and DOH proceeded to register them. Additionally, the environmental conditions caused by the hurricanes provoked to certain extent a backslash.

This percentage, in general, was maintained from FY 2008 to FY 2015 in an average of 79%. By the end of FY 2019 a decrease to 75% can be observed. Although the pace of increase in the percentage has been limited or appears to be limited, no great backslash has occurred notwithstanding all the difficulties encountered**.** We understand that this has been an achievement because it demonstrates the effort exercised by the systems throughout the years to maintain compliance with the regulations that apply to them, notwithstanding the events that have affected them, particularly since fiscal year 2017.

We cannot disregard that after the two hurricanes the small systems faced many challenges**,** and one was keeping their systems in operation and in compliance. Thus, we may dare to say that possibly assistance efforts/resiliency efforts immediately after the hurricanes could have contributed to the increase in compliance after the hurricanes which hit the island by the end of FY 2017. Possibly two and a half years after the hurricanes, the systems do not have the funds available or the economic assistance that they had received in 2018 thus their compliance continues facing a small set-back. Nevertheless, by the end of FY 2022 an increase of 1% is observed when compared to the end of the previous reporting year. Data corresponding to previous years is included in ***Appendix F.***

NON-PRASA SYSTEMS IN THE STRATEGY WITH DISINFECTION FROM FY 2008 TO FY 2019

	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22*
Comm. Systems	182	180	177	177	248	**242**	**240**	**241**	**239**	**239**	**239**	**238**
Systems with Disinfection	144	142	139	138	189	**185**	**184**	**182**	**180**	**180**	**180**	**181**
% Systems with Disinfection	79%	79%	79%	78%	76%	**76%**	**77%**	**75%**	**75%**	**75%**	**75%**	**76%**

Note: We have to emphasize that all community water systems are included in the Non-PRASA Strategy since fiscal year 2012.

* Prior years' data is included in previous reports.

Regarding the surveillance bacteriological samples collected at Non-PRASA systems serving schools, by the end of FY 11, out of 174, 137 (79%) were negative. By the end of FY 12, out of 205 surveillance bacteriological samples collected at Non-PRASA systems serving schools, 146 or 71% were negative, with a decrease of 8% in comparison to FY 2011. By the end of FY 13, out of 224 surveillance bacteriological samples collected, 163 samples or 73% were negative. This is an increase of 2% of negative results in comparison to FY 2012.

For the three years reporting period ended in FY 2016, the following was achieved: by the end of FY 2014 out of 228 surveillance bacteriological at Non-PRASA systems serving schools samples collected, 180 samples or 78% were negative; by the end of FY 2015 out of 181 surveillance bacteriological samples collected, 154 samples or 85% were negative; and by the end of FY 2016 out of 179 surveillance bacteriological samples collected, 136 samples or 76% were negative. This is an increase of 3% of negative results in comparison to FY 2013.

For the previous reporting period (FY 2017, 2018 and 2019), the following was achieved: by the end of FY 2017 out of 159 surveillance bacteriological Non-PRASA systems serving schools samples collected, 128 samples or 81% were negative; by the end of FY 2018 out of 86 surveillance bacteriological samples collected, 74 samples or 86% were negative; and by the end of FY 2019 out of 63 surveillance bacteriological samples collected, 47 samples or 75% were negative. This is a slight decrease of 1% of negative results in comparison to FY 2016.

From FYs 2020 to 2022 we can appreciate that by the end of FY 2022 out of 1,616 Non-PRASA surveillance bacteriological samples collected at Non-PRASA systems serving schools, 1,197 samples or 74% were negative. This is a slight decrease of 1% of negative results in comparison to FY 2019. The following table shows the above-mentioned results from years 2014 to 2022, which constitutes the last three reporting periods. By the end of fiscal year 2021 we can observe a marked an increase from 70% % to 75% in the number of negative results when comparing these two years 2020 and 2021 . Nevertheless, when we compare year 2020 with the end of fiscal year 2019 we can observe a decrease of 5% in the number of negative results in the surveillance bacteriological at Non-PRASA systems serving schools. It must be noted that there was an increase in five percent in FY 2021 comparable to the end of FY2019. We must keep in mind that during the last three years we were under pandemic conditions, lockdown, earthquakes, hurricanes and several other environmental conditions and notwithstanding these the percent has been stable and looking forward to increase. Also, it has been possible to increase the number of samples taken during these last three years.

Bacteriological Results in Non-PRASA Systems Serving Schools FY-14 to FY-22: Surveillance (S) and Compliance (C) Monitoring																		
FY	**2014**		**2015**		**2016**		**2017**		**2018**		**2019**		**2020**		**2021**		**2022**	
S / C	**S**	**C**	**S**	**C**	**S**	**C**	**S**	**C**	**S**	**C**	**S**	**C**	**S**	**C**	**S**	**C**	**S**	**C**
Number Negative Results	180	160	154	128	136	133	128	129	74	34	47	85	**777**	**1208**	**1280**	**1348**	**1197**	**1485**
Total Number Samples	228	167	181	139	179	145	159	138	86	35	63	87	**1106**	**1327**	**1696**	**1355**	**1616**	**1502**
% Negative Results	**78%**	**95%**	**85%**	**92%**	**76%**	**92%**	**81%**	**94%**	**86%**	**97%**	**75%**	**98%**	**70%**	**91%**	**75%**	**99%**	**74%**	**99%**

On the other hand, in the previous reporting period, 2017 thru 2019 we must note that the number of samples taken was significantly lower. Two possible reasons for this was the hit of the two hurricanes that due to the devastation of the island impaired the number of samples that needed to be taken. Additionally due to the devastation there was lack of energy/electric power, and many systems were out of operations. Other reasons were identified such as the lack of access to the systems due to the vegetation obstructing highways and rural roads. Another reason that we

detailed previously was that EPA undertook a series of samples, but these were not included in the above table.

As we have mentioned previously, slight decreases are due to the registering of systems; marked decreases are due to new regulations in force. In addition to this, there is the change with the use of the ETT and that with the ETT all systems (Non-PRASA) are now included in the Strategy, thus increasing the number of systems that might.

In terms of the bacteriological surveillance results in the Non-PRASA community systems included in the strategy, by the end of 2011 the percent of negative samples was maintained at 65% in regard to FY 2010. By the end of FY 2012, 64 % of the samples were negative, for a slight decrease of 1% when compared to FY 2011. By the end of FY 2013, 66% of the samples were negative, for a slight increase of 2% when compared to FY 2012. By the end of FY 2014, 67% of the samples collected for the bacteriological surveillance results in the Non-PRASA community systems included in the strategy were negative, for a slight increase of 1% when compared to FY 2013 on which the negative samples increased to 66%. By the end of FY 2015, 71% of the samples were negative, for a slight increase of 4% when compared to FY 2014.

By the end of FY 2016, 67% of the samples collected for the bacteriological surveillance samples taken in the Non-PRASA community systems included in the strategy were negative, which represents a decrease of 4% when compared to FY 2015. By the end of FY 2017, 70% of the samples were negative, for a slight increase of 3% when compared to FY 2016 where the negative samples decreased to 67%. By the end of FY 2018, 69% of the samples were negative, for a slight decrease of 1% when compared to FY 2017. By the end of FY 2019, 96% of the samples were negative, for a marked increase of 27% when compared to 69% in FY 2018.

By the end of FY 2020, 67% of the samples were negative for the bacteriological surveillance results. This is a slight decrease of 3% when compared to FY 2017 where the negative samples were 70%. By the end of FY 2021, 75.5% of the samples were negative, for an increase of 6.5% when compared to FY 2018. By the end of FY 2022, 74% of the samples were negative, for a marked decrease of 22% when compared to 96% in FY 2019.

As summary, we can observe that from October 2014 to September 2022, there is a change from a total of negative results of 67% to74% respectively this is an increase in the per cent of negative bacteriological surveillance results. Likewise, is when we compare FY 2020 to FY -2022, the negative samples increased.

BACTERIOLOGICAL SURVEILLANCE RESULTS IN NON-PRASA COMMUNITY SYSTEMS INCLUDED IN THE STRATEGY: FY 2014 TO 2022

	FY 14	FY 15	FY 16*	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22**
Number of Negative Results	868	993	939	777	815	818	799	1280	1197
Total Number of Samples	1298	1399	1397	1106	1187	848	1187	1696	1616
Negative Results %	**67%**	**71%**	**67%**	**70%**	**69%**	**96%**	**67%**	**75.5%**	**74%**

BACTERIOLOGICAL SURVEILLANCE RESULTS IN NON-PRASA COMMUNITY SYSTEMS INCLUDED IN THE STRATEGY: FY 2014 TO 2022									
	FY 14	**FY 15**	**FY 16***	**FY 17**	**FY 18**	**FY 19**	**FY 20**	**FY 21**	**FY 22****
* We have to emphasize that all community water systems are included in the Non-PRASA Strategy since FY 2012. **Data as of **September 2022**.									

In terms of the bacteriological results in the Non-PRASA systems, by the end of FY 11, the percent of negative samples was maintained at 65%. By the end of FY 2012, 64% of the samples were negative, for a slight decrease of 1% when compared to FY 2011. However, by the end of FY 2013 the negative samples increased to 65%. From October 2013 to June 2014, 65% of the samples were negative maintaining the per cent of the prior year as illustrated in the following tables.

As of June 2015, 73% of the samples were negative as illustrated. By the end of FY 2016, 67% of the samples were negative, which represents a decrease of 4% when compared to FY 2015.

During FY 2017, from the 697 samples collected, 475 were negative, showing an increase from 67% to 68% in negative results, showing a slight increase of 1%. After the completion of the data for FY2018, the samples collected increased: from the 1,445 samples collected, 1,017 were negative, showing an increase from 68% to 70% in negative results, for a slight increase of 2%, as illustrated in the following table. This increase is the result of a special monitoring undertaken by EPA as part of the resiliency actions after Hurricane María. As of July 2019, from 341 samples collected, 241 were negative, showing a slight increase of 2% in negative results, as illustrated in the following table.

During FY 2020, from the 922 samples collected, 918 were negative, showing an increase in the percent from 68% to 99% in negative results, which is a marked increase of 31%. After the completion of the data for FY 2021, the number of samples collected also increased. From the 1355 samples collected, 1348 were negative, showing an increase in the percent from 70% to 99% in negative results. This is also a marked increase of 29%, as illustrated in the following table. As of July 2022, out of 1502 samples collected, 1485 were negative, showing a marked increase of 26.8% in negative results, as illustrated in the following table. Throughout the years it can be appreciated that the per cent tendency in bacteriological negative results continues increasing. There might be some slight variations but for this reporting period, these per cents increased considerably. Once more, notwithstanding the difficulties the more and more systems are undertaking the appropriate steps to disinfect and comply with the SDWA. These results demonstrate that the strategy implementation has proven results.

BACTERIOLOGICAL RESULTS IN NON-PRASA SYSTEMS									
FISCAL YEARS*	**14**	**15**	**16**	**17**	**18****	**19****	**20**	**21**	**22**
Number of Negative Results	301	756	939	475	1017	241	918	1348	1485
Total Number of Samples	460	1036	1397	697	1445	341	922	1355	1502
% of Negative Results	**65%**	**73%**	**67%**	**68%**	**70%**	**72%**	**99%**	**99%**	**98.8%**
* FYs 2005 to 2010 data is included in the Capacity Development Program Report of fiscal year 2019 provided to EPA. ** Data of FTY available as of July 2019. FY 2018 data was revised and includes results from the special monitoring undertaken by EPA as a result of the resiliency actions past hurricane María. NOTE: We have to emphasize that all community water systems are included in the Non-PRASA Strategy since fiscal year 2012.									

B. Efforts and Initiatives

DOH continues implementing a series of approaches to assist systems in their process of attaining capacity and compliance with the SDWA during the last years. Within these, is the establishment of procedures to assess and thus assist systems in order to identify limiting factors, especially capacity development limiting factor, which in turn have provided valuable information on the conditions of the systems. To this effect is that we have proceeded to revise and incorporate in the capacity development strategy the use of the asset management plan. Additionally, we have developed a series of pilot projects. The most recent pilot project used or combined several tools to identify problems that will become limiting factors.

DOH has undertaken, among others, fifteen (15) initiatives and/or pilot projects where some were extended in order to outreach more systems. With each new pilot project, DOH continues directing its exertions in order to consider new approaches and parameters to be evaluated and included in the assistance process or add more systems that are to be benefited. DOH is trying to identify the best combination of outreach to the systems as well as the best combination of approaches towards obtaining compliance in an effort to maximize the resources available. During fiscal year 2016 it was not possible to extend the outreach due to financial constraints. Moreover, during the last three years it has not been possible to extend the outreach to the systems for the same financial constraints. It has been DOH's intention to request and/or revise existing proposals and either execute a new contract with prior private entities or hire or contract personnel to undertake these activities in order to continue the assistances given to the systems. Once more, not only due to the financial situation this has not been possible, but also due to the strike at the end of fiscal year 2017 of two hurricanes, Irma and María, that caused a huge setback.

Added to this situation new challenges continue forcing a set-back to the outreach and these have been the continuous earthquakes and the pandemic caused by the coronavirus as well as the simultaneous occurrence of these last two. Environmentally speaking as well as of Public health this combination totally hinders the assistance to systems. Now also during this period a great percentage of the Island has been under a moderate to severe drought conditions that also affect the drinking water systems and Ironically we had also a hurricane: Fiona. Our future reports will provide data related to these latest challenges.

As a primary tool for assisting, guiding, and orienting systems in the process of attaining capacity, several years ago DOH designed and used a training manual for systems owners where technical, financial and managerial aspects needed in a system were addressed. In the same manner, other projects were undertaken where practice versus theory was the main objective in order to teach and implement procedures that will conduct the systems towards compliance because improvements are achievable in their operation. This was attained through the Circuit Riders approach and the use of the Adapted CPE. Nevertheless, the financial situation continues hindering and limiting advances in the systems' assistance process.

During the two years contract entered into for the Circuit Rider Program Project, which ended in September 2016, certain activities undertaken on technical capacity were directly related to the Operator Certification Program. This contract benefited all 48 systems that participated in the project. After this contract ended and notwithstanding that almost seven years have passed no new

contracts were awarded particularly due to the critical financial condition of the government but also to the electronic fund transfer cut off imposed by the federal government which ended in September 2019. Nevertheless, this Department was able to comply with its responsibilities as delegated by law. We recognize serious financial limitations and serious challenges encountered due to the hit of the two hurricanes Irma and Maria and relatively recent Fiona.

As we have stated, the Circuit Rider Program Project scope is to provide training for the benefit of public water system operators affected by the regulatory requirements of Section 1419 of the 1996 SDWA. As part of its scope of work, the Circuit Rider Program Project provided the small water system operators with the necessary tools and knowledge to reach compliance with the Puerto Rico operators' regulations. The licensing process fees were also covered under the contract. Most of the small system operators in Puerto Rico still do not either qualify or comply with the requirements necessary to file an application for the operator exam. The Program continues facilitating the system operators in the establishment of mechanisms and strategies to comply with these requirements and has provided them assistance through the certification process.

In summary, the Circuit Riders project activities completed as of September 2016 covered three areas of assistance: provide operator support, undertake complete Sanitary Surveys (SS), and measure of the capacities through the adapted CPEs. As indicated in the previous reporting period, although this project ended in September 2016, during the first quarter of FY 2017 DOH was able to revise all outstanding invoices and reports related to the activities that were completed in order to facilitate and expedite the payments once the cut-off was eliminated.

Notwithstanding that there was an expectation of extending the project for two additional years, due to the lack of funds caused by the federal cut-off of electronic transfer between Puerto Rico and the US Treasury, and the financial situation, this extension was not possible.

During fiscal year 2017 and 2018 coordination with RCAP continued and information was provided by DOH, which was to be used by them for training small systems where capacity development and compliance is addressed. Another example of this is the case of compliance with the lead/copper rule. This concurrent assistance is the result of the Interagency Committee, now known as Multi-sectorial Committee, established with the purpose of dealing with the Non-PRASA systems/Non-PRASA Strategy and as of today with resiliency activities for the recovery of Puerto Rico after the hurricanes.

As we have indicated during fiscal year 2016-17 DOH had the intention of executing a new contract during this year. The activities of the new contract would be similar to the ones described in the one that ended in September 2016. The new contract estimated the use of funds as follows:

CONTRACT / PARTNERSHIP WITH PRIVATE OR PUBLIC ENTITY		
2016-17	**2017-18**	**Approx. Total**
$102,000	$102,225	$204,225

During these two fiscal year 2017 and 2018 the programming of the implementation the Circuit Riders Program in other systems was undertaken in order to continue expanding it. Although DOH completed the preparation of a request for proposal for a new contract where once more two concepts, Capacity and Circuit Rider, are mingled in order to provide technical assistance and support to these

systems in order to obtain compliance and a draft contract was prepared, due to the federal cut-off and the economic situation it is pending execution. Not only was the contract affected with the cut-off, but also the award and/or extension of new contract. Although all the paperwork (provider's information, draft contract, etc.) was completed during the last quarter of FY 2016 as of today this Department has not been able to award a new contract that will avail and further the assistance to small systems. This situation was aggravated also by the fact that the government of Puerto Rico continues under serious economic distress and application of the PROMESA Act and furthermore hindered with the two devastating hurricanes that hit the Island in the last quarter of FY 2017.

With the strike of Hurricanes Irma and Maria, during FY 2018 all efforts were directed towards resiliency activities, including DOH's efforts. In regard to the last contract executed, once more it was DOH's intention to request and/or revise existing proposals and award a contract as soon as possible, when an economic stability and the electronic transfer of funds are fully reinstated. To this effect, DOH requested a proposal for the extension to the contract to FY 2018 but due to the financial crisis this extension was not executed. Therefore, future technical assistances and its expansion to cover more systems have been in serious difficulty.

It was the intention of DOH to continue undertaking activities included in the last contract executed, where monthly visits would be undertaken to each system during the project period, if the extension or new contract were executed. DOH requested an update/revision to the proposal for the extension to FY 2018 in order to execute a new contract, but, although received and discussed with the proposed partner, it was not possible to execute the contract. Another possibility was hiring/contracting personnel to undertake these activities in order to continue the assistances given to the systems but, once more, hiring was not possible.

For FY 2018, the objective was to have under contract activities in three (3) phases of two (2) years each for a total of six (6) years. The contract estimated the use of funds by phases, as follows:

CONTRACT / PARTNERSHIP WITH PRIVATE OR PUBLIC ENTITY THIRD PHASE*		
Year Source of Funds		**Approximate Total**
2019-20	**2020-21**	
$122,000	$100,140	$222,140
* Third two years of a six-year contract. Estimates and time frame may vary subject to proposal.		

DOH's intention is the execution and/or extension of a contract during this year in order to give continuity to the assistances given to the systems. The activities of the contract will be similar to the ones described in the original contract which ended in September 2016. The first two phase's estimates are as follows:

CONTRACT / PARTNERSHIP WITH PRIVATE OR PUBLIC ENTITY FIRST PHASE*		
Year Source of Funds		**Approximate Total**
2015-16	**2016-17**	
$100,000	$66,240	$166,240
* First two years of a six-year contract. Estimates and time frame may vary subject to proposal.		

CONTRACT / PARTNERSHIP WITH PRIVATE OR PUBLIC ENTITY SECOND PHASE*		
Year Source of Funds		**Approximate Total**
2017-18	**2018-19**	
$50,000	$30,410	$82,410
* Second two years of a six-year contract. Estimates and time frame may vary subject to proposal.		

Although DOH continued with the intention of executing and/or extending a contract during fiscal year 2019, due to the above-mentioned reasons it was not possible.

DOH's intention for fiscal year 2018-19 was to modify the contract time frame. It was expected to be a four-phase contract of two years each, for a total of eight years in order to give continuity to the assistances given to the systems. The activities of the contract would be similar to the ones described in the original contract which ended in September 2016. As stated previously, the contract estimated the use of funds in four phases, as follows:

CONTRACT / PARTNERSHIP WITH PRIVATE OR PUBLIC ENTITY FOURTH PHASE*		
Year Source of Funds		**Approximate Total**
2021-22	**2022-23**	
$120,080	$100,000	**$220,080**
*Fourth two-years phase of an eight years contract. Estimates and time frame may vary subject to proposal.		

The first three phase's estimates are as follows:

CONTRACT / PARTNERSHIP WITH PRIVATE OR PUBLIC ENTITY FIRST PHASE*		
Year Source of Funds		**Approximate Total**
2015-16	**2016-17**	
$100,000	$66,240	**$166,240**
* First two-years phase of eight-year contract. Estimates and time frame may vary subject to proposal.		

CONTRACT / PARTNERSHIP WITH PRIVATE OR PUBLIC ENTITY SECOND PHASE*		
Year Source of Funds		**Approximate Total**
2017-18	**2018-19**	
$50,000	$30,410	**$82,410**
* Second two-years phase of eight-year contract. Estimates and time frame may vary subject to proposal.		

CONTRACT / PARTNERSHIP WITH PRIVATE OR PUBLIC ENTITY THIRD PHASE*		
Year Source of Funds		**Approximate Total**
2019-20	**2020-21**	
$127,000	$100,180	**$227,180**
* Third two-years phase of eight-year contract. Estimates and time frame may vary subject to proposal.		

As we have indicated DOH's expectation throughout all these years was to award a contract to give continuity to planned and executed activities. Once more DOH tried to award this contract during FY 2019-20 using conservative estimate, which may vary in time and cost due to the various events that affected Puerto Rico's fiscal conditions since fiscal year 2016 up to 2019, once again this was not possible.

Nevertheless, DOH did not gave up in its efforts to give continuity to the assistances to the drinking water systems and after examining several possibilities, concluded that a time frame of 8 years was s a time frame that will not avail the catch up wanted. Thus, in an effort to catch-up the lapse of time where the assistances were not possible DOH has developed a new project and was included it in the 2020 IUP and in the FY 2020-21 Set-Asides Work Plan in order to expand the outreach to the small systems and give continuity to the assistance provided.

During fiscal year 2020 DOH determined that the most feasible and expeditious way to continue providing technical assistance given to the systems, besides the regular full-time employees has been executing of individual professional services contract or contract with prior private entities. There continue to be serious limitations for hiring/contracting personnel including retaining it to undertake these activities. Therefore, DOH's FYs 2020, 2021 and 2022 Work Plans included the pilot project to "recover" time lost during the years of cut-off (four years). Also, the Work Plan for FY 2022-23 includes some related activities towards achieving the project initial goals and to the extent possible completing it in a reasonable time frame based on current circumstances. ***Appendix B*** – *"Technical Assistance and State Management Program Set-Asides through the Circuit Riders Project*[8]*"* provides a summary of the activities undertaken since the beginning of this pilot project and the catch-up plan designed considering these three years[9] and now the two fiscal years since the beginning of this particular pilot project using also the State Program Management set-aside.

Regarding the last contract executed by DOH to undertake activities related to circuit riders, capacity development and operator certification it was DOH's intention/expectation to extend the project at the time for at least two additional years and outreach more systems. This has not been possible since FY 2016, at the time of the federal cut-off and up to date. As we have indicated DOH directed its exertions towards executing a contract now after almost four years to restart all these activities. At last, we were able to execute it at the beginning of 2020, October. A series of professional services contracts where personnel was hired to undertake among others operator certification related activities, but it has been delayed and continues as such due to personnel turnover related to the pandemic, the earthquakes financial constraints and now to the hit of hurricane Fiona. Through the use of available tools such as sanitary surveys and the adapted CPE and oversight of the operation of the systems possible operational adjustments and recommendations will be made towards improving this technical area of the capacity.

As indicated the preparation of circuit riders' alternatives that manage different assistance methodologies directed to avail compliance of the systems and capacity development attainment were included in the FY 2020 and 2022 Workplan with the design of a contract to use remaining balances of funds from previous year's award under the line item of Contractual under Technical Assistance with the funds established for the State Program Management set-aside. Thus, we also established in both 2020 and 2022 IUPs the set-aside for State Program Management. In this way we are trying to catch up in time lost and money available during the cut-off and give continuity to the assistances provided to the systems. The activities of the contract are similar to the ones described in the original/initial contracts, when the cut-off was already in force.

Also, the amounts available and estimated were revised in order to use the funds in three phases, thus, using the remaining balances of funds of previous years under the technical assistance set-aside, mainly. Details were provided in the Set aside Workplan submitted in June 2020, 2021, and 2022. We must emphasize that the environmental threads that Puerto Rico has been subject to simultaneously the prevailing pandemic of coronavirus, the recurrent earthquakes and now the recent hit of hurricane Fiona, altogether they have seriously increased delays and even halted many initiatives and activities of

[8] Pilot project financed with the Technical Assistance and State Program Management set-aside.

DOH including our pilot project related to the set-aside of state management established and initiated in 2021. Particularly the government activities are daily impaired due to the hurricane, the pandemic, the earthquakes including the collateral results of all this such as the severe power outages that are constant prolonged and recurrent. Following is the use of funds assigned.

- the first phase will continue with the use of remaining funds from fiscal years 2014, 2015 and 2016, thus, an estimate of $313,272 will be cash drawn based on activities undertaken;

- the second phase will continue with the use of remaining funds from fiscal years 2017 and 2018, thus, an estimate of $229,737 will be cash drawn based on activities undertaken; and

- the third phase will continue with the use of remaining funds from fiscal year 2019, thus, an estimate of $294,893 will be cash drawn based on activities undertaken.

As stated previously, the contract estimates the use of funds in three phases of use of source funds in an estimated three-year contract, as follows:

CONTRACT / PARTNERSHIP WITH PRIVATE OR PUBLIC ENTITY Three Phase Contract under Technical Assistance Set-aside				
Phase	**Source of Funds Year and Amount**		**Total per Phase**	**BALANCE FY 2021**
First FY 2014, 2015, 2016	**2020**	**2020-21-2023**	**$313,272**	**$245,836**
	$100,000	$213,272		
Second FY 2017 and 2018	**2020**	**2020-21-2023**	**$229,737**	**$229,737**
	$100,000	$129,737		
Third FY 2019	**2020**	**2020-21-2023**	**$294,893**	**$294,893**
	$100,000	$194,893		
	Total		**$837,902**	**$770,466**

During fiscal year 2020 DOH established the State Program Management set-aside in order to assign the use of 2% or $220,220 of the contractual activities under the Circuit Riders project as follow:

CONTRACT / PARTNERSHIP STATE PROGRAM MANAGEMENT*		
Use of Funds		**Approximate Total**
2020	**2021-2023**	
$100,000	$120,120	**$220,220**
* A three-year contract. Estimates and time frame may vary subject to the proposal. Year source of funds: 2020 2% out of 10% available for the State Program Management set-aside. ** Only individual professional service contracts were executed. Due to the pandemic and personnel turnover only three (3) remain working.		

It was DOH's optimistic expectation to award this contract by the end of FY 2020 and if not during the first quarter of 2020-21. This was accomplished. In October 2020 the project started mainly with the training of personnel. This was very difficult due to the severe limitations that were imposed by the pandemic. We must recall also that we were under an election period that also imposed restriction. Notwithstanding all the odds the project began. There were approximately four to six months of trainings. As previously indicated, a total of ten (10) people were hired under contract to undertake these activities. The Set-asides Work Plan 2021 and 2022 submitted to EPA provides details of the activities for the use of the funds outlined. We regret that due to the prevailing situation with economic limitations imposed by PROMESA, the pandemic and the earthquakes there was personnel turnover. Only three persons remain in the project. The development of activities was seriously delayed. The following table shows the activities undertaken once the trainings and workshops to the personnel were undertaken, and the field activities began. Also, a total of two training were taken and a total of eight brochures were prepared.

Capacity Development / Monitoring Surveillance Undertaken During Fiscal Years 2021 and 2022			
Activity	**FY 2021**	**FY 2022 (as of September 30)**	**Total FYs 2021 and 2022**
Capacity Measures	2	66	**68**
Technical Assistance	5	102	**107**
Emergency Plan	2	14	**16**
Sanitary Survey	7	9	**16**
Data Evaluation	1	126	**127**

Regarding this project we need to mention once more that the data evaluation, during fiscal year 2020-2021, bacteriological samples were taken in the selected PWS, on a frequency of alternate months. Specifically, during the months of May, July, September 2021. However, due to various compelling reasons beyond DOH's control, unfortunately it was not possible to tabulate and evaluate these results, as anticipated. In this sense, the project manager, as well as several inspectors that had been recruited for the sampling, data entry and the corresponding statistical evaluation resigned from the project, for personal reasons, unexpectedly. Consequently, the personnel limitations that we had, along with the work delays typical of the COVID 19 emergency, prevented us from complying with this part of the agreed work plan, as scheduled.

Nevertheless, despite this unforeseen situation, and with the objective of overcoming this limitation, we immediately began the process of recruiting new personnel and our efforts were successful in record time. In other words, in October 2021 and subsequent months, new personnel, including a new project manager and several inspectors were hired. This new staff undertook the process of tabulating and evaluating all collected bacteriological results during this fiscal year.

As we have stated, the Puerto Rico Department of Health's Technical Assistance Circuit Rider Project has worked to define and address the needs for assistance and enforcement for the Non-PRASA systems and has developed tools and manuals that are revised, updated and used in these communities to address systems' deficiencies through the use of small pilot projects. To certain extent, the assistance has been provided on a case-by-case specific situation, notwithstanding the financial

situation of the Island and all its departments and instrumentalities and the requirements of the PROMESA Act.

DOH will continue encouraging the system operators to participate in the project's trainings that capacitate them in order to enhance and reinforce their knowledge of the system operation process. This will provide for improvement in the operational performance which may warrant safer potable water production and promotes public health protection.

As stated in previous reports, limitations on the economic resources continue to be a challenge that DOH needs to overcome in order to outreach a greater number of communities in the short term. For four years the DWSRF and, thus, this Department was under a federal cut-off, situation that has delayed and to certain extent halted and aggravated the outreach to small systems in the process of assistance and, with the government in general under the PROMESA Act, more funding cuts were expected, causing greater difficulty in the process of assistance.

Notwithstanding all this fiscal situation, we continue recognizing the success of the Capacity Program Strategy also during fiscal years 2020 through 2022 because once more, this Department has been able to continue the implementation of the Strategy but in a limited way due to the financial constraints when we speak of undertaking new pilot projects for the systems.

DOH continues assisting systems by providing orientations regarding disinfection processes and the preparation of the Consumer's Confident Report (CCR). Approximately 240 systems are assisted each year in the process of the preparation of this report.

Limiting factors are directly associated to the systems' ability to attain capacity and thus compliance with the law. It has been proven that limiting factors hinder the systems' ability to comply with the law and that impact directly the public health of the population served by the system. The programmatic activities, the establishment of procedures to assess systems, and a series of approaches to assist them are undertaken simultaneously with the implementation of the Capacity Development in order to improve their capacity and, thus, improve the quality of the water that is being served. Following, these are discussed.

Throughout the years, the pilot projects undertaken to assist drinking water systems have provided standpoints in the assistance methodology/procedure that has been incorporated to ease the assistance and training provided to systems. In the assistance process, DOH has been able to identify as well as confirm that limiting factors in most of the small systems in Puerto Rico continue to be directly associated to their ability to attain capacity and thus compliance with the law. As we have stated, DOH has undertaken several pilot projects and with each new pilot project DOH has been able to add new features in the assistance process. DOH continues trying to identify the best combination of outreach to the systems as well as the best combination of approaches towards obtaining compliance in an effort to maximize the resources available.

The importance of these pilot projects is that they have provided DOH with the tools to measure and determined the viability and effectiveness of Circuit Riders with the advantage that the results have been proven and they can be applied to other similar systems. Currently, notwithstanding that there is no contract executed, there is a feedback and collaboration with Circuit

Riders partners that continue providing their support and assistance to the systems by undertaking evaluations of the individual needs or case-by-case determinations for increasing their capacities.

1. Non-PRASA Inter-agency Committee Meetings

DOH has directed this Committee for approximately twenty-three years. As stated previously, complying with the request of EPA's Director, Carmen Guerrero Pérez during FY 2017 the Committee was renamed as "Multi-sectoral Committee for the Organization and Compliance of the Community Aqueducts", due to the fact that that also various Non-Governmental Organizations (NGO) were part of it. Government agencies as well as Regulatory Agencies and private and non-profit entities have provided assistance to the Non-PRASA community systems in all aspects (technical, managerial, and financial). Their assistance among others includes:

Assistances provided by the Non-PRASA Inter-agency Committee	
Identification of sources of funds	Study and identification of best available technology for surface water systems
Assessments of current infrastructure	Evaluation of applicable existing and future state and federal regulations
Avail treatment equipment and techniques	Preparation of educational manuals and conferences
Improvement and construction of infrastructure	Technical assistance / improvement of sanitary conditions
Identification/assessment of existing operational problems and improvement in operation and maintenance	Identification of available human resources for operational assistance

We have stated that this Committee continues providing the assistance through the supporting agencies. There will be variances in the approach of the Committee where each agency maintains their own individual goals and exertions, but they continue guiding and assisting the systems in their process of compliance with the applicable regulations and now with the recovery activities including organization process for the benefit of obtaining funds for resiliency. The "Multi-sectorial Committee", former "Interagency Committee", has continued since fiscal year 2017 providing assistance to the systems in their challenge towards compliance. Other partner agencies with existing Circuit Riders programs continue assisting the systems in the preparation of technical and financial proposals that are required by other agencies, including federal agencies that can provide not only funds but also support in the different areas of capacity.

The former Interagency Committee or "Multi-sectorial Committee" since fiscal year 2017 to FY 2020 and 2021 undertook activities that since FY 2021 are ongoing under the Water Coalition, which continues providing assistance to the systems in their challenge towards compliance and in the challenges and ongoing resiliency activities.

During 2021 due to the fact that we continue under resiliency and recovery actions from the prior and current disasters, assistance was provided with the organization of systems and the registration of new ones to the extent that these were identified in order to avail fiscal resources. This process was to avail funds provided by FEMA and other organizations such as Water Mission / Water Coalition. Technical assistance was also provided in order to avail compliance with the monitoring that needed to be undertaken. In the prior years' reports we detailed the assistances

undertaken by community/systems. As previously indicated, the Water Coalition Group has provided assistance and DOH participated in the revision of the form Water Coalition Community Aqueducts Initial Needs Assessment, created by EPA. Through this assessment form the systems' present conditions and emergency needs were identified. This is a tool to be used during emergency/disaster events.

Since fiscal year 2018, and as a result of hurricanes, and as of today, since the new and prevailing threats, other initiatives emerged emphasizing resiliency activities particularly those provided by Project Hope, Water Mission, FEMA, "Tu Hogar Renace", Water Coalition and the "Multi-sectorial Committee for the Organization and Compliance of the Community Aqueducts" but also at this point reconstruction. As previously stated, and in order to avoid duplicity of activities, the Water Coalition has undertaken various activities that were share with the "Multi-sectorial Committe". Mr. Paul Faricelli, from EPA, has been in charge of follow-ups by programming meetings. In coordination with EPA and Mrs. Odalys de la Vega, from PRWEA, DOH has indicated to the small community systems about the workshops, seminars and funds availability. As of today, also Water Coalition has grouped many of the NGO in the multisectoral committee such as "Fundación Comunitaria", and "Por los Nuestros".

ASSISTANCES GIVEN BY THE ORGANIZATIONS GROUPED UNDER THE WATER COALITION (former Non-PRASA Inter-agency Committee) During FYs 2021 and 2022	
Por los Nuestros	24 photovoltaic energy systems installed and 20 electric power generators provided during FY 2020 and continued undertaking assistance for resiliency activities to the systems during FY 2021.
RCAP	assistance to the small water systems to fill-out the necessary forms to apply for or request electric power generators.
Fundación Comunitaria	assistance to the small water community systems to achieve energetic redundancy.
EPA - ERG / RCAP	as part of a contract with EPA, ERG and RCAP, provided assistance to approximately twenty-four (24) systems, and assistance to another twelve (12) systems is ongoing.

Due to the recent strike of Fiona during FY 2022 a meeting was held through a conference call with Water Coalition in order to become aware of the needs of the systems as a result of this atmospheric event. DOH undertook visits to the systems in order to know their conditions: how this hurricane Fiona affected their operation, if these are in operation, if they had electric power or were using other alternate energy power supply like solar panels or electric power generators. This information was provided to EPA that would share it with FEMA in order to provide assistance according to their immediate need.

We must mention that prior to the hit of the Fiona hurricane, the organizations such as "Por Los Nuestros", "Fundación Comunitaria de Puerto Rico" and Water Mission/Water Coalition

have continued during this year 2022 installing solar panels and batteries in some systems creating resiliency on them.

After the hit of the new hurricane Fiona this Department moved to assist directly the emergency situation while we also continued to certain extent dealing with "old" resiliency and recovery actions from the prior hurricanes. Thus, once more with the current disasters assistance was provided with the organization of systems in order to avail fiscal resources. This process was to reach out and allocate and avail funds provided by FEMA and other organizations such as Water Mission / Water Coalition. Technical assistance was also provided in order to avail compliance with the monitoring that needed to be undertaken. In the prior years' reports we detailed the assistances undertaken towards community/systems when the hit of hurricanes Irma and Maria happened. During this year to certain extent entities such the Water Coalition Group, has provided assistance and DOH participated providing also assistance and coordination with them in the identification of needs or undertaking the Needs Assessment. Through this assessment form the systems' present conditions and emergency needs were identified. This is a tool to be used during emergency/disaster events.

As previously stated, to outreach the assistance, the agencies have been reorganized in order to maximize the efforts and a field sub-committee was created within the Regulatory Agencies. This sub-committee continues meeting regularly throughout the year.

Several agencies, among which are included PRDOH, USEPA, Rural Housing Development (RHD), The Northeastern Rural Communities Assistance Partnership (RCAP) Solutions, National Rural Water Association (NRWA) have engaged during the last **twenty-six** years in undertaking important activities that are basis for initiating the process of attaining capacity and thus compliance. The assistance provided included training and technical assistance to systems with a population of less than 10,000 (<10,000) to achieve and maintain compliance with the SDWA.

During fiscal year 2020, DOH continued to be involved with several of the agencies above mention although being limited by the current situations.

Also, PRDOH continued coordinating assistance to small systems through the NRWA which in turn provided the assistances through the Environmental Finance Center (EFC) through funds and grants provided nationwide by EPA. Due to the new challenges encountered not only previously but now, there are other agencies that have been identified because they are more directly involved with response during emergency situations such as FEMA, Water Mission, Water Coalition, "Fundación Comunitaria", Red-Cross, Salvation Army, and National Guard. Regarding the COVID 19 pandemic, the "Rural Community Assistance Partnership" (RCAP) identified two entities, "Xylem Watermark" and "120 Water Audit" that will provide, upon request and free of cost, N95 protection masks to all the rural small systems throughout the Island. By clicking over the following address https://share.hsforms.com/1ffPE_qJCQVa7183nrijpxw35n1xt **the systems can secure an amount from 10 to a maximum of 100 masks until the inventory is over.**

DOH has provided assistance to the different agencies that are involved in the establishment or creation of new systems. This assistance has included the monitoring and sampling process required in the creation and/or establishment, development, and identification of new community systems. We must indicate that during FY 2020-21 due to the prevailing situation of the earthquakes that, although their frequency and intensity has decreased, but have continued up to date,

and where, added to this is the prevailing COVID-19 pandemic and other environmental situations, this coordination with the EFC particularly was not possible. Nevertheless, during FY 2021-22 PRDOH continued coordinating assistance to small systems through the Environmental Finance Center (EFC) through funds and grants provided nationwide by EPA.

The EFCN also administers the Smart Management for Small Water Systems Program, which is a university/based organization creating innovative solutions to difficult how-to-pay issues of environmental protection and improvement. The Commonwealth of Puerto Rico continues, through PRASA, with an initiative to assist those Non-PRASA small systems that have, within others, no possibility of connection to them. A fee for this purpose has been established and charged to all their customers. Currently this fee continues in place.

Different technical assistances were provided focusing on attaining and maintaining capacity (improvement of financial and managerial capabilities) particularly directed to operators and systems' owners, emphasizing in the management, treatment and operational issues.

Notwithstanding all the odds we have to point out that this Department has continued collaborating in the coordination and/or assistance to workshops provided to small systems. These were notified of three (3) workshops that were undertaking throughout the Island. During the workshop "Convocatorios para Acueductos Comunitarios", DOH provided information to the small systems in the Eastern Region on the availability of funds and how to request or apply for them. Following is the list of the workshops, dates undertaken, and the sponsor entities:

WORKSHOPS UNDERTAKEN DURING FISCAL YEAR 2020			
Name	**Date**	**SPONSORED BY**	**Other**
"Tercer Encuentro Regional de Acueductos Comunitarios"	Nov 2, 2019	Hispanic Federation, "Fundación Comunitaria de PR" and OXFAM	Adjuntas
"Taller sobre Plataformas del Gobierno en Líneas y sus Servicios"	Nov 26, 2019	"Centro para Puerto Rico (Fundación de Sila M. Calderón)"	Rio Piedras
"Adiestramiento sobre Manual de Operación y Mantenimiento & Plan de Respuesta a Emergencia"	June 20, 2020	RCAP Solutions	Online training
"Convocatorios para Acueductos Comunitarios"	Various	"Fundación Comunitaria de PR"	East Region systems
"Cómo Realizar una Revisión de la Tarifa para un Acueducto Comunitario"	August 5, 2020	RCAP Solutions	Online training
"Agua como un Derecho Humano"	September 9, 2020	FURIA	Facebook Live
"Control de Pérdida de Agua & Acceso a Fondos para Mejorar Sistemas Comunales Pequeños"	September 23 and 24, 2020	PRWEA	Online training
"Lograr y Mantener el Cumplimiento del Sistema de Tratamiento"	November 10 and 12, 2020	PRWEA and RCAP	--

During FY 2021 DOH has continued collaborating in the coordination and/or assistance to workshops provided to small systems. Due to the pandemic, the systems were notified via electronic mail of three (3) workshops that were undertaking throughout the Island. During the workshop "Convocatorios para Acueductos Comunitarios", DOH provided information to the small systems in the Eastern Region on the availability of funds and how to request or apply for them. Also, in September 2021, the systems were notified that the workshop "Control de Pérdida de Agua & Acceso a Fondos para Mejorar Sistemas Comunales Pequeños" would be undertaken on September 24. Among the themes to be discussed were partnership for safe water, aqueduct systems' auto evaluation, priorities in the auto evaluation, and availability of USDA funds.

By electronic mail, DOH provided flyers to approximately thirty (30) systems to recall their participation in several workshops. Also, the systems were informed of financial aid available, and the steps needed to receive it. "Alianza Comunitaria" at the Recinto de Ciencias Médicas (UPR Medical Sciences Campus) - UPR published a flyer requesting the participation of communities in a virtual forum on April 29, 2021, in order to know the principal health needs of these communities. RCAP Solutions indicated to Mr. Paul Faricelli, from EPA, of four online workshops scheduled for May and July 2021. As of September 2021, the small systems were notified of five (5) additional workshops scheduled for June 19, 22, 24 and 29, and July 8, 2021. These workshops are offered free of cost.

During this fiscal year 2022 the collaboration and coordination continued. Also, the systems were informed of financial aid available, and the steps needed to receive it. As it can be appreciated the themes were important and relevant for compliance of the drinking water systems. In summary, as of August 2022, a total of six (6) workshops were undertaken. A total of thirty (30) systems attended the workshop offered by RCAP to the rural communities as a review for the operator's certification exam. Coordination with DOH was undertaken for the workshops offered. A two days' workshop was scheduled for August 30 and September 1, 2022. Many of the workshops were online although others were presential. These workshops are offered free of cost.

We have to say that also in FY2022, although we continue under difficulties of all sorts this Department has continued collaborating in the coordination and/or assistance to workshops/ forums provided to small systems. These were notified of the workshops that were undertaken throughout the Island. Following is the list of the workshops, dates undertaken, and the sponsor entities:

WORKSHOPS / FORUM UNDERTAKEN DURING FISCAL YEAR 2020 THROUGH 2022		
Name	**Date**	**Sponsored by**
"Tercer Encuentro Regional de Acueductos Comunitarios"	Nov 2, 2019	Hispanic Federation, "Fundación Comunitaria de PR" and OXFAM
"Taller sobre Plataformas del Gobierno en Líneas y sus Servicios"	Nov 26, 2019	"Centro para Puerto Rico (Fundación de Sila M. Calderón)"
"Adiestramiento sobre Manual de Operación y Mantenimiento & Plan de Respuesta a Emergencia"	June 20, 2020	RCAP Solutions
"Convocatorios para Acueductos Comunitarios"	Various	"Fundación Comunitaria de PR"

WORKSHOPS / FORUM UNDERTAKEN DURING FISCAL YEAR 2020 THROUGH 2022		
Name	**Date**	**Sponsored by**
"Cómo Realizar una Revisión de la Tarifa para un Acueducto Comunitario"	August 5, 2020	RCAP Solutions
"Agua como un Derecho Humano"	September 9, 2020	FURIA
"Control de Pérdida de Agua & Acceso a Fondos para Mejorar Sistemas Comunales Pequeños"	September 23 and 24, 2020	PRWEA
"Lograr y Mantener el Cumplimiento del Sistema de Tratamiento"	November 10 and 12, 2020	PRWEA and RCAP
Socio-Environmental Analysis of the Community Water System of Puerto Rico	December 1, 2020	University of North Carolina and Instituto de Investigaciones Interdisciplinarias - UPR, Cayey, P. R.
Interpretation of laboratory Results	March 17, 2021	RCAP
Forum to Strengthen Collaboration with the Community and Academia: Deseamos Conocer tus Principales Necesidades de Salud"	April 29, 2021	Recinto de Ciencias Médicas of the University of P.R.
Online training "Regla de Tratamiento de Aguas superficiales (SWTR)	May 12, 2021	RCAP Solutions
Fundamental Concepts of the Revised Total Coliform Rule, Lead and Copper Rule, and Disinfectants and Disinfection Byproducts Rule	May 14, 2021	RCAP Solutions
Taller de Participación Comunitaria para Acueductos Rurales	June 19, 2021	Bosque Modelo and Enlace Comunitario
"Control de Pérdidas de Agua y Acceso a Financiamiento para Mejorar los Sistemas Comunales Pequeños"	June 22, 2021	American Water Works Association (AWAA) and PR Water Environmental Association (PRWEA)
"Herramientas para los Sistemas Comunitarios: Manual de Operación y Mantenimiento & Plan de Respuesta a Emergencia"	June 23, 2021	RCAP Solutions
"Establecer Tarifas de Revisión para un Sistema Comunales Pequeños"	June 24, 2021	American Water Works Association (AWAA) and PR Water Environmental Association (PRWEA)
"Seguridad Cibernética para Sistemas Comunales Pequeños"	June 29, 2021	American Water Works Association (AWAA) and PR Water Environmental Association (PRWEA)

WORKSHOPS / FORUM UNDERTAKEN DURING FISCAL YEAR 2020 THROUGH 2022		
Name	**Date**	**Sponsored by**
Fundamental Optimization and Access to Financing to Improve Small Community Systems	June 29, 2021	American Water Works Association (AWAA) and PR Water Environmental Association (PRWEA)
"En Ruta a la Resiliencia Comunitaria"	July 8, 2021	WCRP Foundation for Puerto Rico
"Protección de la Fuente de Abasto"	July 22, 2021	RCAP Solutions
"Encuestas Sanitarias, Salud y Seguridad Ocupacional y Desinfección de Instalaciones"	July 28, 2021	RCAP Solutions
Second Regional Meeting of Community Aqueducts	August 21, 2021	Fundación Comunitaria de P. R.
18th Annual EPA Drinking Workshop	August 30 to September 2, 2021	EPA and ASDWA
4to Junte Regional de Acueductos Comunitarios	December 4, 2021	Comunidad Asomante and Fundación Comunitaria
Asset Management Principles and its Practical Application to the Water Industry	January 26, 2022	PRWEA and ARCADIS
Repaso para Comunidades Rurales Tomar Examen de Certificación Operador Plantas de Tratamiento – Agua Potable	April 5, 6 and 7, 2022	RCAP Solutions
"Evaluación de Materiales de Tubería para Selección de Sitios de Muestreo Cumpliendo con la Regla de Plomo y Cobre"	August 3, 2022	EPA and RCAP Solutions
Celebremos a los Acueductos Comunitarios	August 6, 2022	EFC, Organización Sistemas Non-PRASA de PR (OSAN) and Environmental Finance Center West (EFCWest)
Lograr y Mantener el Cumplimiento del Sistema de Tratamiento de Agua Potable (Achieve and Maintain Compliance with the SDWA)	August 30 and September 1, 2022	RCAP, EPA, PRWEA, and American Water Works Association

As in prior years, the workshops are focused on attaining and maintaining capacity (improvement of **technical**, financial, and managerial capabilities) particularly directed to systems' owners emphasizing in the management, and operational issues. As stated previously, throughout the fiscal years special emphasis was placed on information to the systems that helped them address the disaster cause by the hurricanes. We have to point out that additional trainings were expected with their sponsorship before the end of the fiscal year, where approximately between 25 and 30 communities were expected to receive assistance in several municipalities. Nevertheless, we have to point out that the activities included, but were not limited to:

1. provide training and technical assistance for small public water systems across the country to achieve and maintain compliance with the Safe Drinking Water Act.
2. help small public water systems across the country improve their financial and managerial capabilities to effectively provide safe drinking water over the long-term.
3. assist small publicly owned wastewater systems and decentralized wastewater systems to improve operational performance over the long term, thereby improving public health and water quality.
4. assist private drinking water well owners with information they need to protect their drinking water supply and improve water quality.
5. evaluations to identify deficiencies in specific components of the system.
6. assistance in the incorporation process, community regulation and in the development of corrective action plans.
7. assistance in the development of response letters to regulatory agencies and request for financial assistance to improve the water system.
8. train for the certification of operators and continuing education for licenses issue and renewal.
9. assistance in the compliance with the operator certification requirement.
10. assistance in the identification of operational problems.
11. identification of alternative energy sources to minimize/reduce energy cost.

In general emphasis is given to:

1. Meetings to organize and educate communities.
2. Evaluations to identify deficiencies in specific components of the system.
3. Preparation of Emergency Management Plans to assist systems during a terrorist/vandalism attack.
4. Assist in the development / implementation of compliance action plans.

It has been a challenge coping with each individual agencies' goals, while simultaneously conduct their exertions, advance, and provoke a change in the systems' compliance. Goals for attaining and maintaining compliance have been re-examined in terms of the services provided to the communities in order to maximize assistance and move more communities towards reaching at an accelerated pace their compliance. DOH continues to be engaged in bringing awareness to the communities of the direct relationship between health and potable safe drinking

water. An increase in awareness has been reached as well as knowledge of the operation and maintenance of the system. Nonetheless, still limiting factors, mainly economic and regulatory continue to hinder progress.

As of today, communities/systems continue been well aware of their need to comply and that they need to seek for assistance and to work out the capacity development in order to attain and maintain compliance and thus become sustainable systems that provide safe drinking water.

Agencies' goals have changed throughout the years due to new trends, environmental issues and economic situations. Entities willing to partner during these years have examined their individual goals in order to continue providing assistance. Several meetings were undertaken during the reporting period corresponding to fiscal years 2020 through 2022 to act not only regarding all the systems but also on case-by-case situations. Thus, assistance was provided after a case-by-case re-evaluation of needs and the achievable means in order to guide them and manage them in their compliance process and while each agency's goals are also attained.

Due to the recent strike of Fiona in September 18, 2022, a meeting was held through a conference call with Water Coalition in order to become aware of the needs of the systems as a result of this atmospheric event. DOH undertook visits to the systems in order to know their conditions: how this hurricane Fiona affected their operation, if these are in operation, if they had electric power or were using other alternate energy power supply like solar panels or electric power generators. This information was provided to EPA that would share it with FEMA in order to provide assistance according to their immediate need.

It is also necessary to re-examine and measure compliance through attainable ways of minimizing or eliminating limiting factors. This new trend continues to be and has been used by the committee now for several years as the best approach for the coordination of the assistances needed. This has improved the outreach. Considering the limited resources available to assist them for compliance, assistance has been maximized as well as the trend towards compliance.

2. The Clean Water State Revolving Fund Needs Survey /Drinking Water Needs Survey

The Clean Water State Revolving Fund Needs Survey has been opened to include other agencies' needs within the SRF Needs Survey. Since the Survey was open to other needs, all upcoming Survey continue including these others agencies' needs through the Office of the Governor in coordination with the Environmental Quality Board, the Department of Health, the Department of Housing, the Department of Natural Resources, Tourism Company, USGS, PRASA, and the Puerto Rico Energy and Power Authority within others. The importance of this survey is that it has been opened to include more need categories that positively favor and promotes the improvement of approximately 600 communities which are many served by Non- PRASA drinking water system. Due to new regulations now in force now the need survey will be undertaken every four years. For the next reporting period, the Drinking Water Needs Survey will include certain resiliency actions that were addressed after the case of Flint and the hit of the hurricanes and systems will be evaluated in order to address more aggressively changes in pipes due to lead and copper and this will provide additional funds to the systems.

3. Drinking Water Seminar

On an annual basis and up to fiscal year 2014-15, DOH in coordination with EPA and other entities sponsored the Drinking Water Seminar. The purpose of this seminar is to disclose to the public new regulations, new technological advances, as well as enforcement actions required by law. The public in general also has the opportunity to provide opinions and feedback to the agencies on the new requirements applicable to drinking water systems. The Drinking Water Seminar corresponding to fiscal year 2015, held during the week of October 12 to 16, 2015 was the last seminar undertaken. We have to point out that the Drinking Water Seminar corresponding to the past seven fiscal years (2016 through 2022) were not undertaken due to the critical economic situation that Puerto Rico and several government agencies have encountered, particularly PRASA which were aggravated by the hurricanes, earthquakes and the prevailing pandemic and resiliency actions. However, on September 28, 2018, a training was provided to small systems' operators. Also, on September 30, 2022, DOH offered to PRASA and its consortiums one seminar regarding the PRDWSRF Program. Additionally, DOH's personnel delivered a session as part of a two-day seminar on the Revised Total Coliform Rule (RTCR) requirements to Non-PRASA systems.

As part of the Drinking Water Seminar, the American Water Works Association (AWWA), a sponsoring agency, recognizes the efforts exercised by the communities in their process of compliance through an award ceremony. There are three levels of recognition: excellence, self-improvement, and community participation. As of September 2019, approximately forty-three (43) communities have been recognized with an award on three (3) categories: excellence, improvement and community participation. It is important to know that there are communities that have being recognized on several occasions. During the past reporting period, in a partnership with EPA, AWWA, ASDWA this recognition was undertaken. For the current reporting period this has not been possible due to the prevailing circumstances.

As previously indicated, DOH has not been able to offer the Seminar in order to continue this initiative. Funds from sponsors are limited or are not available for undertaking this activity. During the last eight fiscal years the Drinking Water Seminar was not offered. Nevertheless, in an effort to continue providing new information and knowledge to the systems in its place several workshops have been planned and attended by the personnel in order to keep them trained and, thus, maintain the staff updated on new regulations and new technological advances, as well as enforcement actions required by law.

As an alternative to the situation and notwithstanding that DOH and AWWA-Puerto Rico Chapter engaged in a new initiative with a series of disinfection by products (DBP) workshops to be undertaken during the second quarter of fiscal year 2016-17, and all the activities that comprise the logistics were undertaken, the workshops were delayed initially due to administrative processes that were necessary. After several meetings and once completed the administrative procedures, it was agreed that from August 2017 to December 2017 the workshops were to be undertaken.

As it can be noted efforts and alternatives have been identified to continue providing new trends and knowledge to the systems for several years after 2015., due to the hurricanes Irma and María that stroke the Island in September 2017 and the economic situation that Puerto Rico and its government agencies encountered these workshops were halted. However, during fiscal year 2018 it was possible to proceed with the workshops that were to be offered. On September 28, 2018, a seminar/training was provided to small systems' operators. Since the cut-off was ridded on

September 5, 2019, that is at the end of fiscal year 2019, it was not possible to organize new workshops for that year.

4. PWSS Grants for Supporting the Capacity Development Strategy

As stated previously DOH initiated the capacity attainment with the Non-PRASA Strategy (NPS). During these years the strategy has proven to work and assist systems in their compliance but still we cannot set-aside the fact that the strategy, although initiated twenty-six (26) years ago, requires other actions that are necessary to enhance it. The Public Water Supply Supervision Program (PWSSP) grant under the Puerto Rico Drinking Water Program continues delineating and implementing the details of the Non-PRASA Strategy, and thus outreaching and assisting systems. Through the recent revision of the Non-PRASA Strategy contained in the Capacity Development Strategy its enhancement was initiated. This revision, which was successfully attained, was also supported by EPA when its approval was received in November 2015. Now in 2022 again the Strategy was revised in order to incorporate the promotion of asset management in drinking water systems. Also, this revision was approved by EPA in March 2023.

As of today, its outreach and development continues to be subject to the availability of funds. It must not be disregarded that there are actions and projects associated with it that were initiated and completed but still there are others in its development stage. In general, strategies are subject to change and are open to changes and variations. Implemented strategies are subject to reevaluation based on predictable situations encountered, which require adjustments in its implementation to make them more feasible. Several years ago, DOH determined, in coordination with EPA, that it was necessary to revise its Non-PRASA Strategy[10]. DOH engaged in the process of revising the Non-PRASA Small Systems Strategy in coordination with EPA Caribbean Environmental Protection Division (CEPD). Through twenty-six years DOH gathered information that was useful in modifying the Capacity Development Strategy (CDS). In 1997, the Non-PRASA Strategy was established in order to assist systems in their compliance process. The Non-PRASA Strategy is included as part of the Capacity Development Strategy. As a result, of the revision of 2015 all Non-PRASA systems are part of the Capacity Development Strategy. The DWSRF Program has provided assistance to the PWSS Program in order to deal with the small systems. As requested by EPA, and as a result of the implementation of both Strategies (CDS and NPS), and the implementation of new initiatives and in order to promote and increase the number of systems that attain compliance, it was discussed and agreed with EPA that the revision of the existing Non-PRASA Strategy was necessary. For several years, DOH and EPA have coordinated and undertaken the Non-PRASA Strategy revision and it was approved in November 2015. This revision considered, within others, establishing a plan that accounted and assigned priorities in dealing with the systems according to the population that they serve, and public health risks associated. A high priority is the systems that serve schools. Categorized groups could be treated separately with specific action plans responding, to a certain extent, to case-by-case needs. As previously stated, the Strategy revision addresses and/or incorporates new issues and challenges of the Non-PRASA systems.

[10] The Non-PRASA Strategy and the Capacity Development Strategy are separate documents. The Non-PRASA Strategy is used under the PWSS Program. The Capacity Development Strategy is used under the DWSRF Program. The Non-PRASA

5. Other Commonwealth (local agencies) Initiatives Supporting the Capacity Development Strategy

The Commonwealth of Puerto Rico continues, through PRASA, with an initiative to assist those Non-PRASA small systems that have, within others, no possibility of connection to them. A fee for this purpose has been established and continues to be charged to all their customers.

During fiscal years 2015 and 2016 there was an initiative coordinated by and among PRASA, the Department of State, PR Electric Power Authority and DOH, within others, in order to maximize the use of these funds in order to eliminate those independent systems and/or consolidate them within PRASA infrastructure. If the consolidation was not viable, these funds were going to be used for enabling the construction of infrastructure for compliance and enhancement of those systems, where sustainability and capacitation was envisioned. Monitoring was to be undertaken for water quality. Due to the financial situation in the beginning fiscal year 2016, it was not possible to continue this initiative.

From April 2016 to January 2017 the DWSRF Program was subject to a total federal cut-off of electronic fund transfer transactions imposed by EPA. This cut-off, together with the conditions imposed by EPA for the riddance of the cut-off, limited the funds available to continue with the operation of the Program and any initiatives that were in process. **Once** the cut-off was eliminated, there is a possibility to resume and continue the enhancement of those systems, where sustainability and capacitation was envisioned. We cannot disregard that there are still funding considerations that continue, limiting the number of systems that can be addressed.

Notwithstanding this scenario of the federal cut-off, DOH provided during the 2014-2016 reporting period assistance to the Department of State and their initiative in regard to the required monitoring and sampling process in the creation and/or establishment of new community systems four new community systems in the Municipality of San Lorenzo. Under this initiative, coordinated efforts with the "Centro de Innovación Social" (CIS)[11], several workshops and trainings were developed not only for the systems participating in the initiative, but through the CIS all systems can access information related to compliance with several drinking water regulations through the CIS website.

As previously reported, during the first quarter of fiscal year 2017, DOH participated in meetings of the Comité de Desarrollo Económico Empresarial Comunitario in coordination with the Office of the General Coordinator of the Financial and Socioeconomic and Auto-Management (Oficina de la Coordinadora General para el Financiamiento Socio-económico y la Autogestión (OFSA)). As part of these meetings, it was discussed the activities that were undertaken by the Special Communities Committee. It identified the difficulty in the bureaucratic processes in the concerning agencies, emphasizing the need to create more flexible procedures, especially for the permitting process. In addition, it was identified the need to train community drinking water systems' management personnel in the processes and procedures that need to be undertaken for permitting.

After twenty-three years of its implementation, the Capacity Strategy has proven to work, and it is providing results because more systems are outreached and the resources available have been maximized notwithstanding the limitation in the amount of funds and the need of more

[11] Center for Social Innovation

technical financial and managerial support which in turn could increase the pace at which systems can receive assistance. One of the things that was considered in the revision of the capacity strategy was the transition from Significant Non-Compliance (SNC) to Enforcement Targeting **(**ETT) Rule. The approach of this rule is based on the holistic concept instead of the SNC as defined by each rule and where systems will be prioritized numerically indicating contaminants code and violation and where this information will be produced on a quarterly basis.

Up to date, DOH has been able to obtain from EPA grants that have been used to conduct a special project which in turn has resulted in the identification of limiting factors within selected communities. Although the grants have been closed there is a legacy that continues to be used as part of the technical assistance provided by the program.

a. Capacity Development Manual[12] with the guidance and strategies to comply with the Capacity Development Program. Through a special project, the Manual was revised, and the new edition is distributed and used in the assistance program.

b. Circuit Riders[13]: Circuit rider concept for providing assistance has been extended to new systems The concept is limited to the availability of fund used to outreach other systems throughout the Island. Further resources are necessary in order to evaluate more systems.

c. Supplementary Environmental Project" (SEP) [14] or "Proyecto Ambiental Suplementario" (PAS): DOH participates directly in this project. During the first SEP or PAS, to the extent possible, the system were assisted in the chemical monitoring, equipment installation for the improvement of the operation of the system and assistance to schools that receive water from a NON-PRASA system in order to connect them to the PRASA systems and recently the connection of Non-PRASA systems to PRASA. Up-coming revision to the SEP will allow the connection of Non–PRASA systems to PRASA. During the previous reporting period, a Second PAS was established. A summary of the activities undertaking in the first and second PAS are included in section 6a.

6. Drinking Water State Revolving Fund (DWSRF)

As previously stated, DOH is the agency administrating the DWSRF and also is the agency with the Primacy for Drinking Water. The Department of Health continues giving high priority in the funding process to projects that are included in the strategy and/or eliminate or consolidate systems by the projects to be financed or constructed. On this regard, under the DWSRF, DOH continues using the 15% for small systems available for loans for construction. In addition, under the technical assistance set-aside, funds are used for assisting this type of systems. There are other set-asides (capacity development, operator certification) that could be established for providing

[12] It is use as a guide in the process of developing capacity for the small systems. It includes the requirements of the Program and strategies that can be followed to develop and maintain capacity.

[13] The concept of circuit riders was tested with positive results that were applicable to other small systems technical in order to determine their potential to comply with the requirements of the Capacity Development Program. These findings were generalized for the communities of the Island with similar characteristics. Further resources are necessary in order to evaluate more systems.

[14] The SEP known as "Proyecto Ambiental Suplementario" or Supplementary Environmental Project provides assistance to small systems in the area of sampling, equipment installation and drinking water to schools.

assistance to small drinking water systems, but up to fiscal year 2017 these required a dollar-to-dollar match. This requirement limited their establishment. Since fiscal year 2017, the requirement of a dollar-to-dollar match for the State Program Management set-aside was eliminated for capitalization grants awarded after the WIIN Act's passage (December 6, 2016). Although the dollar-to-dollar match is no longer required, these set-asides were not established duet to the financial situation encountered among others with PROMESA and the availability of cash-flow. It is not until 2020 when DOH delineates a new pilot project combining the fiscal resources under the technical assistance set-aside and the establishment of the State Management Program set-aside. The combination of the two set-asides would avail the coverage of all the community drinking water systems in this Pilot Project. Details were provided to EPA in the FY2020 workplan.

Since its first capitalization grant, DOH has been able to provide assistance to fifty-two (52) projects through twenty-three (23) loans[15] under which seventeen (17) Non-PRASA small community systems have been or were in the process of been eliminated and/or consolidated, affecting approximately 12,907 people in these communities. Following is the table presenting the Non-PRASA small community systems that have been or are in the process of being eliminated and/or consolidated through the rehabilitation and or construction of drinking water systems financed with the DWSRF grants. We must not disregard that an achievement was the debt restructure agreement signed in July 2019 which consolidates approximately 19 loans into one and restructures a debt of $192,000,000 million dollars which enables the total restart of the Program.

[15] Includes loan from transfer of funds from Clean Water State Revolving Fund.

NON-PRASA SYSTEMS ELIMINATED OR CONSOLIDATED BY PRASA PROJECTS FINANCED BY THE DWSRF (INCLUDES REDISTRIBUTION OF FUNDS BASED ON UNLIQUIDATED FUNDS STRATEGY (ULO'S))						
FFY	**Grant $**	**15%**	**Project Name**	**Loan Amount**	**Systems Eliminated**	**Population**
1997-98		$4,125,259	Naguabo-Río Blanco	$12,393,319	Pasto Seco-Sistema Superficial con multas	1,948
			Mayagüez-Ponce de León	$4,827,235	--	150,000
			Guayama-Carite	$2,880,963	Carite Lake, Guayama (150) Los Barros-Guayama (275) Carite-Guayama (1,352) Guamaní-Guayama (1,056)	2,833
			Yabucoa-Guayabota	$2,383,802	--	2,084
			Culebras-Guayama	$584,720	Culebras-Villa Verde, Guayama	260
			Utuado-Urbana	$1,419,775		25,068
			LOAN TOTAL	**$24,489,814**		
1999	**$12,860,040**	$1,929,006	Naguabo-Río Blanco	$4,322,131	--	141,308
			Río Grande-El Yunque	$7,894,907	--	48,000
			LOAN TOTAL	**$12,217,038**		
2000	**$13,365,360**	$2,004,804	Yabucoa-Guayabota	$914,198		2,084
			Guayama-Carite	195,857	Carite Lake, Guayama (150) Los Barros-Guayama (275) Carite-Guayama (1,352) Guamaní-Guayama (1,056)	2,833
			Culebras-Guayama	215,280	Culebras-Villa Verde, Guayama	260
			Utuado-Urbana	1,920,225		25,068
			Mayagüez-Ponce de León	4,851,945		150,000
			Río Grande-El Yunque	4,599,587		48,000
			LOAN TOTAL	**$12,697,092**		
2001	**$13,420,560**	$2,013,084	Mayagüez-Ponce de León	$848,662		150,000
			Río Grande-El Yunque	$11,900,870		48,000
			LOAN TOTAL	**$12,749,532**		
2002	**$12,889,560**	$1,932,984	Añasco Nueva (4,188)	$12,245,282	Pinales Arriba Hatillo Caguabo Corcobada La Choza II	440 330 440 360 84
			LOAN TOTAL	**$12,245,282**		
2003	**$12,812,040**	$1,921,806	Las Marías	$12,171,438	Guacio Laguna	304 100
			LOAN TOTAL	**$12,171,438**		
2004	**$13,290,600**	$1,993,590	Naguabo-Cubuy	$12,626,070	Florida-Maizalez	3,541
			Hatillo-Camuy		-	
			Naranjito-Anones		Anones Centro I	2,172
			Morovis-Sanamuerto		-	
			LOAN TOTAL	**$12,626,070**		
2005	**$13,262,520**	$1,989,378	Yauco Urbano Nueva	$13,262,520	La Jalda del Río Naranjo	80 300
			LOAN TOTAL	**$13,262,520**		
2006	**$9,875,160**		Añasco	$8,498,530	Pinales Arriba Hatillo Caguabo Corcobada La Choza II	440 330 440 360 84
			Caguas Norte	$4,230,179	-	
			LOAN TOTAL	**$12,728,709**		
2007	**$9.874,800**		Río Grande-El Yunque	$11,628,071	-	
			LOAN TOTAL	**$11,628,071**		

NON-PRASA SYSTEMS ELIMINATED OR CONSOLIDATED BY PRASA PROJECTS FINANCED BY THE DWSRF (INCLUDES REDISTRIBUTION OF FUNDS BASED ON UNLIQUIDATED FUNDS STRATEGY (ULO'S))						
FFY	**Grant $**	**15%**	**Project Name**	**Loan Amount**	**Systems Eliminated**	**Population**
2008*	**$9,775,200**		Yauco Urbano Nueva	$5,254,345	La Jalda del Río Naranjo	80 300
		$1,810,903	Naguabo-Rio Blanco & Maizales (1A, 1B and II)	1,810,903	Florida - Maizalez	3,541
			Hatillo - PF Camuy-Hatillo	1,819,316	-	
		$560,633	Naranjito-Anones	560,633	Anones Centro	2,172
			LOAN TOTAL	**$9,445,197***		
2008*		$1,006,036	Las Marías - FP (Phase I) - Overrun	$1,006,036	-	
			Hatillo - Camuy FP - Overrun	2,276,000	-	
			LOAN TOTAL	**$3,282,036***		
ARRA 2009**	**$19,500,000**		Utuado- Urbana WTP	832,000		25,068
			Yauco-La Jurada Community WDS	**1,038,716**	Jalda del Río –54 La Jurada – 203	348
			Hatillo-Hatillo WDS	**3,184,261**		
			Aibonito-La Plata WTP Phase II	**2,098,005**		
			Guaynabo WTP	**470,603**		
			San Juan-Caimito WDS	**365,329**		
			Guánica Water Distribution System	**112,572**		
			Humacao WDS	**270,000**		
			Barceloneta WDS	**285,029**		
			Trujillo Alto - Sergio Cuevas W T P	**4,688,268**		
			Las Marías - F P (II-A)	**6,155,216**		
			****FINANCIAL AGREEMENT TOTAL**	**$7,957,641**		
			SUBSIDIZED	**$11,542,359**		
2009	**$9,775,200**		Caguas Norte FP	$769,822		
			Guayama Urbano WTP	3,453,190		
		$1,888,800	Arecibo WTP	1,888,800		
			Camuy WDS - II	3,400,000		
		$1,412,330	Lares - Phase III	1,412,330	Laguna Magüeyes	100 140
		$1,607,071	Lares - Phase II	1,607,071	Vega Acevedo Acueducto Com. Las 40	396 100
			Trujillo Alto - S. Cuevas WTP-Overrun	1,410,202		
			Lajas-San Germán WTL	2,780,000		
		$1,537,920	Ciales - Las Delicias WTP	1,537,920		
			Caguas Sur FP	1,020,000		
			LOAN TOTAL	**$19,289,335**		
2010	**$13,573,000**		Morovis Sur WTP	**$5,597,542**		
		$2,000,000	Morovis Urbano WTP	**$4,333,605**		
		$2,222,646	Cedro Arriba WTP	**$3,099,204**		
			Añasco Water Intake	**$1,300,000**		
			Hatillo Raw Water Intake	**$1,733,566**		
		$3,000,000	Rochas WTP-Moca	**$4,0100971**		
		$2,000,000	La Máquina WTP	**$3,0420260**		
			FINANCIAL AGREEMENT TOTAL	**$23,117,148**		
			SUBSIDIZED	**$ 5,429,200**		
2011	**$9,418,000**		Valenciano WTP, Juncos	**$14,377,868**		
			Camuy-Hatillo-Quebradillas, Phase II	**7,151,007**		
			FINANCIAL AGREEMENT TOTAL	**$21,528,875**		
			SUBSDIZED	**$ 3,767,200**		
2012	**$8,975,000**		Valenciano WTP, Juncos	**$7,814,489**		
			Las Marías, Phase II-B	**2,000,000**		
			FINANCIAL AGREEMENT TOTAL	**$9,814,489**		
			SUBSDIZED	**$1,795,000**		

NON-PRASA SYSTEMS ELIMINATED OR CONSOLIDATED BY PRASA PROJECTS FINANCED BY THE DWSRF (INCLUDES REDISTRIBUTION OF FUNDS BASED ON UNLIQUIDATED FUNDS STRATEGY (ULO'S))						
FFY	**Grant $**	**15%**	**Project Name**	**Loan Amount**	**Systems Eliminated**	**Population**
2013**	**$8,421,000**		Valenciano WTP, Juncos	$ 2,256,300		
			Caguas Norte FP	2,195,081		
			Guayama Urbano WTP	3,084,756		
			Coto Laurel WTP	1,000,000		
			Ponce Vieja WTP	1,450,001		
			Ponce Nueva WTP	2,450,001		
			Caguas Sur	248,228		
			FINANCIAL AGREEMENT TOTAL	**$12,684,367**		
			SUBSDIZED	**$ 2,526,300**		
2014	**$8,845,000**		Valenciano WTP, Juncos	$ 2,311,580		
			Guayama Urbano WTP	2,065,815		
			Hatillo-Camuiy-Quebradillas	1,067.366		
			Lajas-San Germán	1,162,105		
		2,953,398	Ciales-Las Delicias	2,953,398		
			Guajataca WTP	2,319,941		
		$ 500,000	Guaraguao WTP	500,000		
			Jayuya Urbano WTP	2,731.443		
			Toa Vaca WTP, New Sed. Tank	3,270,000		
			FINANCIAL AGREEMENT TOTAL	**$18,381,730**		
			SUBSDIZED	**$1,769,000**		
2015†**	**$8,787,000**		~~Valenciano WTP, Juncos~~	~~$5,357,556~~		
			~~Caguas Norte Filtration Plant~~	~~216,218~~		
			~~Guayama Urbano WTP~~	~~644,778~~		
		$ 109,208	~~Arecibo Esperanza~~	~~109,208~~		
			Coto Laurel WTP, Ponce	2,957,428.00		
			~~Morovis Sur WTP~~	~~1,076,952.00~~		
			Ponce Vieja WTP	6,917,614.39		
			Ponce Nueva WTP	5,302,352.00		
		2,112,535	~~Morovis Urbano WTP~~	~~2,313,506.00~~		
			~~Cedro Arriba WTP~~	~~2,112,535.00~~		
			~~Enrique Ortega (La Plata) FP~~	~~801,449.00~~		
		230,000	~~Caguas Sur Filtration Plant~~	~~2,145,130.0~~		
		918,702	~~La Rocha WTP, Moca~~	~~230,000.00~~	**Rocha**	**4,760**
		938,348	~~La Máquina WTP, Sab. Grande~~	~~918,702.00~~	**La Máquina**	**4,803**
			Hatillo Raw Water Intake	3,716,793.61		
			FINANCIAL AGREEMENT TOTAL	**$18,894,188.00**		
			SUBSDIZED	**$ 8,259,780.00**		

NON-PRASA SYSTEMS ELIMINATED OR CONSOLIDATED BY PRASA PROJECTS FINANCED BY THE DWSRF (INCLUDES REDISTRIBUTION OF FUNDS BASED ON UNLIQUIDATED FUNDS STRATEGY (ULO'S))						
FFY	**Grant $**	**15%**	**Project Name**	**Loan Amount**	**Systems Eliminated**	**Population**
			~~Valenciano WTP, Juncos~~	~~$ 5,000,000.00~~		
			~~Ponce Vieja WTP – New Tank~~	~~5,000,000.00~~		
			~~Vega Baja WTP~~	~~3,500,000.00~~		
			~~Corozal Urbana WTP~~	~~1,400,000.00~~		
			~~Jiménez WTP, Río Grande~~	~~140,000.00~~	Jiménez	292
			~~Caguas Norte Filtration Plant~~	~~50,000.00~~		
			~~Guayama Urbano WTP~~	~~100,000.00~~		
		$ 100,000	~~Arecibo WTP~~	~~100,000.00~~		
			~~Camuy~~	~~100,000.00.00~~		
			~~San Germán~~	~~100,000~~		
			Coto Laurel WTP, Ponce	1,898,424.00		
			~~Morovis Sur WTP~~	~~100,000.00~~		
			~~Ponce Vieja WTP, Ponce~~	~~100,000.00~~		
			Ponce Nueva WTP, Ponce	5,914,856.00		
		100,000	~~Morovis Urbana WTP~~	~~100,000.00~~		
2016[†]	**$8,312,000**	100,000	~~Cedro Arriba WTP - Naranjito~~	~~100,000.00~~		
		1,000,000	~~Las Marías, Phase IIB~~	~~1,000,000.00~~		
		100,000	~~Ciales -Las Delicias WTP~~	~~100,000.00.00~~		
			~~Guajataca WTP, Isabela~~	~~500,000.00~~		
			~~Enrique Ortega (La Plata) FP~~	~~500,000.00~~		
		200,000	~~Caguas Sur Filtration Plant~~	~~200,000.00~~		
			~~Guaraguao WTP, Ponce~~	~~500,000.00~~		
			Añasco Water Intake	10,858,251.00		
			Hatillo Raw Water Intake	709,536.00		
		55,000	~~Rochas WTP - Moca~~	~~55,000.00~~		
		50,000	~~La Máquina WTP – Sab. Grande~~	~~50,000.00~~		
			~~Jayuya Urbano WTP,Jayuya~~	~~50,000.00~~		
			~~Cerro Gordo WTP, San Lorenzo~~	~~1,000,000.00~~		
			~~Toa Vaca WTP, Villalba~~	~~100,000.00~~		
			~~Cerro Gordo Raw Water Intake~~	~~500,000.00~~		
			~~Gurabo WTP, Gurabo~~	~~50,000.00~~		
			FINANCIAL AGREEMENT TOTAL	**$19,381,067**		
			SUBSIDIZED	**$ 7,813,280**		
			~~Vega Baja WTP~~	~~$ 1,000,000.00~~		
			~~Corozal Urbana WTP~~	~~1,000,000.00~~		
			~~Valenciano WTP, Juncos ‡~~	~~3,929,000.00~~		
2017[†]	**$8,312,000**		~~Jiménez WTP, Río Grande~~	~~712.970.00~~		
			~~Ponce Vieja WTP Distrb Tank, Ponce~~	~~3,000,000.00~~		
			Coto Laurel WTP, Ponce	1,389,249.00		
			Ponce Vieja WTP, Ponce (Elimn)	6,604,521.00		
			FINANCIAL AGREEMENT TOTAL	**$7,993,770.00**		
			SUBSIDIZED	**$7,993,770.00**		

NON-PRASA SYSTEMS ELIMINATED OR CONSOLIDATED
BY PRASA PROJECTS FINANCED BY THE DWSRF
(INCLUDES REDISTRIBUTION OF FUNDS
BASED ON UNLIQUIDATED FUNDS STRATEGY (ULO'S))

FFY	Grant $	15%	Project Name	Loan Amount	Systems Eliminated	Population
			~~Corozal Urbana WTP, Corozal ††~~	$ 961,000.00		
			~~Valenciano WTP, Juncos ††~~	2,000,000.00		
			Termination of Valenciano WTP, Juncos	1,455,080.00		
			Coto Laurel WTP, Ponce	1,000,000.00		
			Ponce Vieja WTP, Ponce	2,000,000.00		
			Ponce Nueva WTP, Ponce	1,000,000.00		
			~~Culebrinas WTP, Aguadilla, Phase II~~	~~2,000,000.00~~		
2018†	**$11,107,000**		~~Enrique Ortega (La Plata) FP, Vega Alta~~	~~500,000.00~~		
			~~Culebrinas WTP, Aguadilla, Phase I ††~~	~~1,800,000.00~~		
			Cerro Gordo WTP, San Lorenzo	2,000,000.00		
			Cerro Gordo Raw Water Intake, San Lrzo	2,000,000.00		
			Hatillo Raw Water Intake, Hatillo	1,000,000.00		
			Añasco Water Intake, Añasco	400,500.00		
			Termination of Toa Vaca, Villalba	1,000,000.00		
			~~Ponce Vieja WTP Distrb Tank, Ponce~~	~~500,000.00~~		
			FINANCIAL AGREEMENT TOTAL	**$11,855,580.00**		
			SUBSDIZED	**$6,253,180.00**		
			~~Corozal Urbana WTP, Corozal~~	~~73,377.00~~		
			Coto Laurel WTP, Ponce	1,014,108.00		
			Ponce Vieja WTP, Ponce	2,014,108.00		
			Ponce Nueva WTP, Ponce	1,014,108.00		
2019††	**$11,004,000**		Hatillo Raw Water Intake, Hatillo	790,000.00		
			~~Culebrinas Raw Water Intake, Ph. I, Aguadilla~~	~~2,014,108.00~~		
			Termination of Toa Vaca, Villalba	1,014,108.00		
			Termination of Valenciano WTP, Juncos	5,161,850.00		
			Cerro Gordo WTP, San Lorenzo	2,028,216.00		
			Cerro Gordo Raw Water Intake, S Lor	2,014,108.00		
			FINANCIAL AGREEMENT TOTAL	**$15,050,606.00**		
			SUBSDIZED	**$2,200,600.00**		
			Culebrinas Raw Water Intake, Aguadilla, Ph I	$3,000,000.00		
			~~Culebrinas WTP, Aguadilla, Ph. II~~	~~2,645,252.00~~		
			Ponce Vieja WTP, Ponce	3,000,000.00		
			Cerro Gordo WTP, San Lorenzo	2,000,000.00		
2020	**$11,011,000**		Cerro Gordo Raw Water Intake, S Lor	3,000,000.00		
			Termination of Juncos Valenciano	1,552,540.00		
			Coto Laurel WTP, Ponce	1,000,000.00		
			Ponce Nueva WTP, Ponce	2,000,000.00		
			Termination of Toa Vaca, Villalba	2,000,000.00		
			FINANCIAL AGREEMENT TOTAL	**$17,552,540.00**		
			SUBSDIZED	**$1,541,540.00**		

NON-PRASA SYSTEMS ELIMINATED OR CONSOLIDATED BY PRASA PROJECTS FINANCED BY THE DWSRF (INCLUDES REDISTRIBUTION OF FUNDS BASED ON UNLIQUIDATED FUNDS STRATEGY (ULO'S))						
FFY	**Grant $**	**15%**	**Project Name**	**Loan Amount**	**Systems Eliminated**	**Population**
2021* **	**$11,001,000**		Culebrinas Raw Water Intake, Aguadilla, Ph I	$2,100,000.00		
			Coto Laurel WTP	1,000,000.00		
			Ponce Vieja WTP, Ponce	3,000,000.00		
			Cerro Gordo WTP, San Lorenzo	2,000,000.00		
			Cerro Gordo Raw Water Intake, San Lorenzo	3,000,000.00		
			Termination of Juncos Valenciano	10,082,682.00		
			Ponce Nueva WTP, Ponce	3,000,000.00		
			New CT / Distribution Tank FP Corozal (Termination), Corozal	2,180,000.00		
			Termination of Toa Vaca	3,000,000.00		
			~~Salinas WTP~~	~~8,000,000.00~~		
			FINANCIAL AGREEMENT TOTAL	**$29,362,382.00**		
			SUBSDIZED	**$3,720,140.00**		
2022	**$7,008,000**		New CT / Distribution Tank FP Corozal (Termination), Corozal	$1,289,120		
			Termination of Juncos Valenciano	5,299,200		
			Coto Laurel WTP	1,000,000		
			Ponce Vieja WTP, Ponce	3,000,000		
			Cerro Gordo WTP, San Lorenzo	500,000		
			Cerro Gordo Raw Water Intake, San Lorenzo	1,200,000		
			FINANCIAL AGREEMENT TOTAL	**$12,288,220**		
			SUBSDIZED	**$3,433,920**		

* Monies reassigned since the Pontifical Catholic University of Puerto Rico (PCUPR) declined to enter into loan.

** The dollar amounts corresponding to this financial agreement were rounded. For the ARRA funds and from fiscal year 2010 on, the term "loan" was changed to "financial agreement" since funds granted as " loan" and as "subsidy" were included.

† Due to the years of federal funds cut-off, hurricanes/earthquakes and debt restructure process/agreement, the construction and development of projects was affected. All projects suffered changes in their construction status. The DWSRF projects under construction were terminated by convenience by PRASA. Others were either funded through other financial mechanisms, constructed with PRASA funds, FEMA funds, Emergency funds. For other projects, PRASA determined that they were not necessary, eliminated or consolidated them. During FY 2020, as a restart to the DWSRF Program project construction financing it was agreed with EPA that a single coordinated revision effort of these tree years IUP's could be undertaken. It was necessary due to the time lapse passed and all the significant changes that occurred. This revision could be considered or undertaken in the most recent IUP and as part of its public participation process. To this effect through the public participation process undertaken for the FY2020 IUP which ended in December 2020, this revision was accomplished. Thus, regarding the loans pending execution corresponding to these three years a total of five projects were financed with the funds under these IUPs in accordance with the Bipartisan Act and with the restitution of repayment funds by the government of Puerto Rico and remanent or unused funds resulting from the debt restructure agreement. The projects are Ponce Nueva WTP, Coto Laurel WTP, Hatillo Raw Water Intake, Añasco Raw Water Intake, Ponce Vieja WTP. With this financing DOH continues the restart of the Program with the expectation of the execution of the loan corresponding to the FY 2018 grant funds in the first quarter of FY 2022. It must be noted that as a result of this revision, fund redistribution was necessary among prevailing projects for the corresponding year such as those to be financed with the FY 2018 funds: Ponce Nueva WTP, Coto Laurel WTP, Hatillo Raw Water Intake, Añasco Raw Water Intake, Ponce Vieja WTP, Cerro Gordo WTP, Cerro Gordo Raw Water Intake, Termination of Toa Vaca WTP, and Termination of Juncos-Valenciano.

†† Redistribution of 2019 funds due to Reallotment of $99,000 awarded to PRDWSRF.

*** This amount includes $16,601,522 available to be reassigned due to the fact that, as of date of PRASA's Debt Restructure Agreement these funds had not been disbursed because the projects did not begin their construction and were not counted as part of the Agreement.

As we emphasized in the previous reporting period, that due to federal cut-off of electronic fund transfer transactions from April 2016 to September 2019, and the general financial situation together with the enactment of the Moratorium Act and PRASA's debt restructure request, it was not possible to execute the financial agreements corresponding to the fiscal years 2015 2016, 2017, 2018 and 2019 funds.

However, the financial agreement in the amount of $46,269,025 corresponding to the FYs 2015, 2016 and 2017 grants was executed on August 30, 2021. Thus, DOH evaluated the disbursement requests corresponding to FY 2015 and FY 2016 funds. During FY 2021, having received the award of FYs 2018, 2019, 2020 and 2021 grants, the FY 2018 loan document was prepared and submitted to PRIFA and was executed on September 2, 2022. The financial agreement document including the funds

corresponding to FY 2019, FY 2020 and FY 2021 was submitted to PRIFA but was pending approval as of September 2022.

We indicated previously that since its first capitalization grant, DOH has been able to provide assistance to fifty-nine (59) projects through twenty-four (24) loans[16] under which twenty-two (22) Non-PRASA small community systems have been or were in the process of been eliminated and/or consolidated, affecting approximately 14,131 people in these communities.

Thus, now with the restart of the program and the execution of pending loans and pending capitalization grant awards we have and expectation of a total of thirty-seven (37) are expected to receive these funds through loans or subsidized loans which will be awarded with cero per cent (0.0%) of interest rate and principal forgiveness. Of these thirty-seven (37) projects, fourteen (14) were new projects. The remaining were projects previously funded by the DWSRF that needed additional funds to be completed due to their high construction cost.

For this reporting period three Capitalization Grants corresponding to fiscal years 2020, 2021 and 2022 have been requested to EPA. As we have stated previously, the FY 2019 grant was approved on May 19, 2020, the grant corresponding to FY 2020, was approved on October 30, 2020, and the one corresponding to FY 2021 was approved on Sept. 11, 2021.

Regarding the financial agreements from the funds correspnding to FY 2015 through FY 2018 capitalizations grants, that were halted due to the cut-off of electronic transactions previously mentioned the following was achieved:

One financial agreement was executed in August 30, 2021 corresponding to the funds from FY 2015 to FY 2017 capitalization grants and a second financial agreement corresponding to FY 2018 capitalization grant was executed in September 2, 2022.

As previously stated, on September 5, 2019, the cut-off was totally ridden and DOH restarted full operation of the program. In terms of assistance to small systems a new pilot project was designed to expand the outreach and cover all small system primarily but also all systems using the surveillance monitoring initiative as we have described in the set-aside workplan.

More than ever, after twenty-six years of the establishment of the DWSRF and twenty-three (23) years of the implementation of the Capacity Strategy, DOH understands that in order to increase the number per year of the systems assisted towards reaching the capacity development requirements of the Safe Drinking Water Act, more economic resources, efforts, commitments continue to be necessary. Notwithstanding, DOH has identified the following needs:

a. Technical Assistance/Capacity Development Assurance

DOH continues providing regularly and as part of its programmatic activities technical assistance through the 2% available to the drinking water systems. On an annual basis, technical assistance and support is offered to approximately two hundred fifty (250) Non-PRASA community public water systems in their preparation of the Consumer Confidence Report. Assistance continued and during FY 2022 two hundred thirty-nine (239); FY 2021, two hundred thirty-nine (239); and FY

[16] Includes loan from transfer of funds from Clean Water State Revolving Fund.

2020, two hundred forty-eight (248). In general, from 2020 to 2022, in regard to the Non-PRASA Strategy implementation, besides being revised to include the promotion of asset management in drinking water systems in 2022, also the following has been accomplished by the Public Water Supply Supervision Program, which has been supported by the DWSRF:

PRASA and Non-PRASA Activities								
PRASA	**FY'17**	**FY'18**	**FY'19**	**Total FYs 2017 to 2019**	**FY'20**	**FY'21**	**FY'22**	**Total FYs 2020 to 2022**
Technical Assistance	43	63	29	**135**	52	15	17	**84**
Inspections	561	455	492	**1508**	307	461	312	**1080**
Sanitary Surveys	50	36	38	**124**	18	35	31	**84**
Non-PRASA	**FY'17**	**FY'18**	**FY'19**	**Total FYs 2017 to 2019**	**FY'20**	**FY'21**	**FY'22**	**Total FYs 2020 to 2022**
Technical Assistance	313	339	429	**1081**	122	243	140	**508**
Inspections	58	98	212	**368**	51	51	57	**259**
Sanitary Surveys	37	61	107	**205**	33	38	36	**107**
All data was revised and updated.								

We have to point out that DOH has continued throughout the years providing assistance to systems, in coordination with EPA through EPA's Special Monitoring.

EPA's Special Monitoring

During the previous reporting period, EPA's personnel of the New York office requested the assistance in the identification of the public water systems that had have not chemical analyses, so that personnel from the Weston Solutions, Inc., from Edison, New Jersey, would undertake these analyses with funds identified for that purpose. A total of thirteen (13) public water systems (13: 12 community and 1 transient) were submitted. This included three (3) new systems and ten (10) that participated in the previous "Environmental Supplementary Project" "PAS" or "ESP" initiative. DOH submitted to EPA the ten systems that participated in the "Proyecto Ambiental Suplementario" (PAS) or "Environmental Supplementary Project" (ESP)[17] initiative that showed detections during the monitoring performed as part of that initiative.

Nevertheless, we have point out that during fiscal year 2018 EPA's monitoring efforts were directed towards addressing the emergency resulting from the hurricanes Irma and María. Prior year's activities appear in *Attachment II-a and Attachment III-a*.

During fiscal year 2019, Dr. Motria Caudill, from the Center of Decease Control in Atlanta, provided DOH a summary and conclusions on the project on monitoring undertaken by EPA's personnel that she had the opportunity to evaluate. There were several key-findings as stated in the report, being the last one presented as follows: "Drinking water safety 6 months after Hurricane María was comparable to conditions reported during the year before the Hurricane."

[17] The PAS is "Proyecto Ambiental Suplementario" or Environmental Supplementary Project provides assistance to small systems in the area of sampling, equipment installation and school. This project is coordinated among other Commonwealth agencies including the Puerto Rico Aqueduct and Sewer Authority (PRASA)

We have to mention that during FY 2021 under the circuit riders' concept and partners, in coordination with EPA, EPA has been developing a project under contract with ERG and RCAP to provide assistance to approximately forty-five (45) systems, but initial help will be provided to twelve (12) systems.

During fiscal year 2021 and part of 2022 assistance was provided to the first and second group. The assistance to the systems on the third group is ongoing. DOH collaborated with EPA providing the information regarding compliance of the systems selected. During fiscal year 2022 these forty-five (45) systems were divided in four groups. However, it was determined that a total of nine systems in the fourth group needed to be replaced. As of June 30, 2022, a total of twenty-four systems have received assistance and for the third group of twelve systems, the assistance is ongoing. During this fiscal year 2022 DOH has kept EPA updated on the compliance status of those systems. Following is the list of the Non-PRASA systems participating in this project, presented by group.

No.	PWS ID	System Name	Municipality	Type	Population Served	TAP
1	PR0351023	Sonador II	San Sebastian	G	800	Juan Campos
2	PR0401234	Garzas Juncos	Adjuntas	G	460	Juan Campos
3	PR0455114	Sabana	Orocovis	G	560	Luis Melendez
4	PR0510125	La Tiza 2	Barranquitas	G	240	Ariel Rosa
5	PR0556125	Machuchal	Patillas	G	55	Juan Campos
6	PR0556145	Marin Betancourt	Patillas	G	53	Ariel Rosa
7	PR0604176	El Llano	Aguas Buenas	G	342	Ariel Rosa
8	PR0613106	Lozada Pozo Dulce	Caguas	G	506	Josefa Torres
9	PR0613256	Pinas II	Caguas	G	292	Josefa Torres
10	PR0613256	Pedro Calixto	Caguas	S	461	Carlos Velazquez
11	PR0724087	COPAR	Corozal	S	1,000	Carlos Velazquez
12	PR0754057	Anones Maya	Naranjito	G	1,750	Luis Melendez

No.	PWS ID	System Name	Municipality	Type	Population Served	TAP
1	PR0302053	Aislada Desarrollo	Aguada	G	440	Ariel Rosa
2	PR0458174	Servicio de Agua	Ponce	G/S	310	Ariel Rosa
3	PR0556035	Quebrada Arriba	Patillas	G/S	500	Ariel Rosa
4	PR0401374	Garzas Centro	Adjuntas	G	90	Carlos Velazquez
5	PR0422104	Jaguey	Coamo	G	171	Carlos Velazquez
6	PR0439054	Testimonio Mundial	Juana Diaz	G	220	Josefa Torres
7	PR0666086	Cantera	San Lorenzo	G	53	Josefa Torres
8	PR0302023	Jaguey Chiquito	Aguada	G	856	Juan Campos
9	PR0401384	Vegas Portuguez	Adjuntas	G	275	Juan Campos
10	PR0455324	Santo Tomas Aquino	Orocovis	G	131	Juan Campos
11	PR0306093	Ajies OCCA	Anasco	G	430	Luis Melendez
12	PR0455294	Saltos Cabra	Orocovis	G	500	Luis Melendez

No.	PWS ID	System Name	Municipality	Type	Population Served	TAP
1	PR0422084	Coamo Arriba	Coamo	G/spring	340	Josefa Torres
2	PR0455214	El Perico II	Orocovis	G	88	Ariel Rosa
3	PR0455234	Damian Arriba	Orocovis	G	320	Ariel Rosa
4	PR0458284	Pastillo Tibes	Ponce	G	420	Ariel Rosa
5	PR0476314	Sierrita Caonillas	Villalba	G	100	Juan Campos
6	PR0478064	Guaraguao	Yauco	S	326	Juan Campos
7	PR0510095	Quebradillas	Barranquitas	G	1,862	Juan Campos
8	PR0510145	Palmarito Cintron	Barranquitas	G	720	Josefa Torres
9	PR0556085	Apeadero	Patillas	S	320	Juan Campos
10	PR0556135	Mulas Sofia	Patillas	G	53	Ariel Rosa
11	PR0604086	Bayamoncito	Aguas Buenas	G	536	Josefa Torres
12	PR0644136	Montones 4	Las Piedras	G	223	Josefa Torres

DOH has undertaken, among others, approximately fifteen (15) initiatives and/or pilot projects where some were extended in order to outreach more systems. As a result of Hurricanes Irma and María other initiatives have emerged emphasizing resiliency activities, particularly those provided by Project Hope, Water Mission, FEMA, "Tu Hogar Renace". Now there are other similar initiatives, also coordinated among several government and non-government organizations (NGO's) /agencies.

Second Environmental Supplementary Project or Second PAS

A summary of the activities undertaken during the First Environmental Supplementary Project (ESP) or "Proyecto Ambiental Suplementario" (PAS) and the list of systems benefited with DOH's approach of a new activity although not necessarily a new initiative, are presented as *Attachments III.* The original PAS initiative or First PAS was divided **into** three phases, which were completed.

As of today, a Second Environmental Supplemental Project (Segundo PAS) has been established. This project was expected to end on June 30, 2020. During the period through December 2018 to March 2019 DOH oriented the small drinking water systems selected for their participation in the Second PAS. DOH also participated in the selection of the small systems, where initially one hundred thirty systems were included. Later, thirteen Non-PRASA systems were added, thus, this Second PAS will address a total of one hundred forty-six (146) small systems. In addition, this Department participated in the selection of the chemicals and parameters that were to be sample and these samples were taken in the small drinking water systems participating. The parameters were: volatile organic chemical (VOC's); synthetic organic chemical (SOC's); secondary maximum contaminants; radionuclides; and inorganic chemicals (IOC's. Also, systems that had no record of lead and copper monitoring were oriented of the requirements that they needed to comply with for said monitoring; and that their systems would be referenced as a sample point in this project. The procedure to take samples for lead and copper monitoring was provided by e-mail to various systems. Attachment III presents the list of projects participating in the Second PAS.

In October 2020 and in collaboration with PRASA, DOH presented another conjunctive motion in order to include two additional Non-PRASA systems in the Second PAS, thus increasing the number of systems benefited to one hundred-forty-eight (148). Also, this conjunctive motion presented the need:

- to continue the monitoring that was halted due to the coronavirus pandemic;
- to undertake a second monitoring on some systems that presented some detection levels

of lead and cooper in the first monitoring;
- to undertake a second monitoring on four (4) systems that presented some detection levels of nitrate in the first monitoring.

Due to the pandemic everything in the project was delayed. As of 2021 only one meeting was undertaken in the third quarter of FY 2021 (November 2020).

Since the beginning of this project, up to August 2021 a 94% of the project sampling was completed.

Regarding the sampling programmed for this fiscal year, as of July 2021 it was completed in 100% for DBP's, VOC, SOC, Inorganic Radionuclides and Secondaries. For Pb & Cu, the sampling programmed was completed in 61%. As for the nitrates sampling programed, this was completed in 92%.

In general, the following was undertaken during fiscal year 2021:

- the total number of systems outreached with these monitoring increase to one hundred forty-eight (148);
- only one meeting was held during November 2020;
- a total of three (3) invoices were evaluated by DOH and approved for PRASA's payment to the Environmental Quality Laboratories, Inc (EQLABS) through letters dated September 3, 2020, November 6, 2020, and June 15, 2021.

Sustainable Community Aqueducts Program[18]

Since September 15, 2014, a former Governor of Puerto Rico signed Executive Order No. EO-201-.041 "to create a Sustainable Community Aqueducts Program (SCAP), with the mission of implementing a support program for the drinking water community systems, thus fostering a sustainable development of the communities through self-management and capacitation". It envisions providing the capacitation to the drinking water community systems that will enable them to maximize drinking water quality and guarantee adequate organization, administration and compliance through this model of sustainability.

This Program was under the responsibility of the Department of State, which administers it, together and in coordination with DOH. As we have stated, under the initiative of the Sustainable Community Aqueduct Program also an Interagency Committee was created. Initially, the Committee was composed by six government officers, and acting as its President was the Secretary of State. These members of the Interagency Committee assigned the human, technical and economic resources needed and available for the proper execution of their duties and responsibilities, in accordance with Executive Order OE-2014-041 and with the ministerial duties established in their respective organic laws. The objective of the Committee was to facilitate the planning and execution of the necessary works of the Program.

With the limitation in funds, the change in the government administration, and as a result of the election of November 2016, the Sustainable Community Aqueduct Program ended in December 2016.

[18] "Programa de Acueductos Comunitarios Sostenibles" or Sustainable Community Aqueducts Program

For a summary of the assistances provided through this Program and the list of public water systems that benefited, see ***Attachment II-b***.

Nevertheless, the Interagency Committee created under this Program continued providing assistance to the small systems to guide them towards compliance with the applicable regulations. As of September 2017, it was as "Multi-sectoral Committee for the Organization and Compliance of the Community Aqueducts" because also various Non-Governmental Organizations (NGOs) colleges and universities, were incorporated as members. EPA included the "Fideicomiso de Ciencia y Tecnología" to assist in the organization of the conferences between all the entities participating and also, to act as "facilitators" in such events.

For FY 2021, as well as for fiscal year 2020 reports, due to the earthquakes followed by the pandemic DOH has been unable to include in the report additional information related to efforts under the Sustainable Community Aqueducts Program beyond those dealing with the emergencies. As mentioned earlier, all systems have been assisted and attended and the exertions have been directed towards their empowerment, which has increased based on the need to deal with the prevailing emergencies.

In 2022 we still continue in similar circumstance such as the resiliency after the incidents of hurricanes Irma and Maria together with the constant and prevailing earthquakes and fragile electric power infrastructure and constant outages, the prevailing pandemic. In addition, we have the recent hit of the new hurricane Fiona. Notwithstanding the circumstances all systems have received assistance from the different entities in order to empower them and help them in not only in the resiliency activities that they were forced to undertake due to the circumstances but to move them to new proactive approaches and actions conducting towards sustainability. Many have been able to attend to workshops for this purpose as well as new workshops sponsored also during 2022. We have to mention that notwithstanding the difficulties encountered by the systems, these in turn and to certain extent, have moved them towards sustainability. Example of this is the use of generators, solar panels, water tanks and even alternative housing. Their empowerment has increased towards becoming self-sufficient. This is because they are well aware of the precarious situation related to the outdated and fragile electric power infrastructure. Systems have empowered themselves and have made partnerships in order to be independent particularly "off the grid" and thus self-sufficient. Systems are making more use of technology and on the other hand technology has reached some places that before was not possible. This has opened new horizons of knowledge.

We constantly emphasize that you cannot lose the perspective that there will be variances in the approach of the committee members due to the fact that each agency maintains their own individual goals and exertions. Their main goal is to help systems but without losing their own goals and objectives. However, the purpose of this Committee is achieved since these agencies and NGOs continue guiding and assisting the systems in their process of compliance with the applicable regulations while providing their particular, specific own assistance within their parameters. Although almost **six** years have passed there are still recovery activities including organization process for the benefit of obtaining funds for resiliency. Also, other partner agencies with existing Circuit Riders programs continue assisting the systems in the preparation of technical and financial proposals that are required by other agencies that can provide not only funds but also support in the different areas of capacity.

During fiscal year 2020, three meetings were held before the coronavirus pandemic, one in October 2019, the second in December 2019 and the third in January 2020. These meetings were held to elucidate situations that arise with the systems so that all in the group will become aware of how the project is going.

One of the achievements of these meetings was that everyone became aware that the needs of the communities are: to receive orientation on how to do things; to know where to go for assistance; and to learn how to encourage the communication between the systems. As of today, the Committee needs to determine its final members and decide if they are going to create sub-committees to deal with different issues/problems.

During the first quarter of FY 22, the 4th Regional Community Aqueducts meeting was undertaken on December 4, 2021. The purpose of the meeting was to create a National Organization of Community Aqueducts.

After these regional meetings, the community aqueduct leaders were called-in to participate in one assembly. The meeting was undertaken on May 22, 2022, in the Municipality of Ponce. During this meeting they elected the members of their Board of Directors. This National Organization of Community Aqueducts is composed of approximately two hundred forty-two (242) water systems.

As of September 2019, the Multi-sectorial Committee continued with the Non-PRASA systems undertaking resiliency activities for their recovery after the hurricanes Irma and María. Within the resiliency activities, two meetings were undertaken (October 2018, February 2019). On the meeting held February 2019 it was discussed the coordination of the assistances to be given to the Non-PRASA systems. The American Red Cross (Cruz Roja Americana), and representatives from the Massachusetts Institute of Technology (MIT) participated in the project to install some equipment in order to provide water during emergencies in schools that serve as shelters. The Multi-sectorial Committee also participated in the discussion of the above-mentioned project. When the project commences or becomes active, the Fire Department and PRASA will also participate in the assembling of the equipment and water filling of the tanks, respectively. As of September 2019, this committee continues providing the assistance through the supporting agencies to the systems in order to help them in their challenge towards compliance.

On February 2019, a meeting “Multi-sectorial Committee for the Organization and Compliance of the Community Aqueducts” was held in order to coordinate the assistances to be given to the Non-PRASA systems. The main subject discussed was a project to provide equipment to provide water during emergencies in schools that serve as shelters. Appendix D-2 summarizes activities undertaken since the establishment of this initiative.

As previously stated, the organizations under the Multi-sectorial Committee moved during FY 2020 to become part of the Water Coalition. It must be noted that other entities have joined as we indicated previously, and new others have emerged. We have stated that the Water Coalition continues providing the assistance through the supporting agencies. There will be variances in the approach of the Water Coalition where each agency maintains their own individual goals and exertions, but they continue guiding and assisting the systems in their process of compliance with the applicable regulations and with the recovery activities including organization process for the benefit of obtaining funds for resiliency. The former Interagency Committee or “Multi-sectorial Committee”

since fiscal year 2017 to FY 2020 and 2021 undertook activities that are now ongoing under the Water Coalition, which continues providing assistance to the systems in their challenge towards compliance and in the challenges and ongoing resiliency activities. Other partner agencies with existing Circuit Riders programs continue assisting the systems in the preparation of technical and financial proposals that are required by other agencies, including federal agencies that can provide not only funds but also support in the different areas of capacity now more than ever due to all the latest environmental and health challenges encountered this year and were some of them began by the end of FY 2019 with the earthquakes.

EPA has been in charge of coordination, follow-ups, and programming meetings. In coordination with EPA, PRWEA, and DOH have indicated to the small community systems about the workshops, seminars, and funds availability to the extent that these are being undertaken. As of today, it can be appreciated that some initiatives prevail, but new ones have joined to focus on the new trends and mainly on providing to the systems the tools that will enable them to overcome current difficulties such as power difficulties and access to infrastructure as those encountered during the hurricanes and the earthquakes. Thus, systems are working towards acquiring equipment that uses renewable energy such as solar panels, within others. Following are some assistances achieved during FY 2022.

ASSISTANCES GIVEN BY THE ORGANIZATIONS GROUPED UNDER THE WATER COALITION	
Por los Nuestros	continued undertaking assistance for resiliency activities to the systems
EPA - ERG / RCAP	as part of a contract with EPA, ERG and RCAP, provided assistance to approximately twenty- four (24) systems, and assistance to another twelve (12) systems is ongoing.
Fundación Comunitaria	assistance to the small water community systems to achieve energetic redundancy.

Among the initiatives undertaken by DOH, several years ago, a pilot project for security in small systems was developed for providing assistance to systems where, within others, vulnerability assessments were developed, and systems were trained so they can respond to emergency situations. Emphasis was given to their technical ability in the response to these situations. As part of the activities undertaken systems were visited as an initial reconnaissance of the system's condition. Their technical capacity was also measured. Currently, security grant projects have been completed. If additional funds are available, DOH will consider continuing with this project.

Now more than ever that Puerto Rico is undergoing several environmental challenges such as the hurricanes and the earthquakes where added to this is the coronavirus pandemic and a severe drought with water rationing there is a need to find financial alternatives to retake vulnerability assessments and the preparation of emergency response plans. Once the critical financial situation affecting not only the government but all its instrumentalities including this Department is resolved, DOH will be able to engage in the process of identifying additional funds to specifically develop a new project to consider security concepts. During FY 2020 DOH was able to identify and establish a new set aside, that its establishment is not limited to the requirement of a state match, to undertake some of these assessments among other activities. The results should be reported in the next Report to the Governor.

Thus, we need to emphasize that DOH designed during FY 2020 a new pilot project to assist drinking water systems and the expectation is to initiate its development during FY 2021. To this effect DOH has established the State Management set-aside to cover not only small systems but all drinking water systems. Therefore, during this fiscal year with the Program retaking the full operation of electronic transfer of funds, DOH evaluated and determined that the most feasible and expeditious way to continue providing technical assistance given to the systems, was whether through executing a new contract with prior private entities or hiring/contracting personnel to undertake these activities and as such prepared its workplan with a new pilot project to "recover" time lost during these three years.

DOH expects to continue exertions to outreach the greatest number of systems possible with the limited funds available where using the opportunity within other to discuss all these concepts and, thus, continue to present it to the systems. Thus, DOH continues maintaining coordination with other government entities in order to guarantee and maintain general security concepts for all drinking water systems in the Island.

DOH repeatedly has emphasized how difficult is to separate concepts and draw a line between capacity development / technical assistance and other initiatives to help systems in their compliance process. Taking into account the fiscal resources available up to now, we can agree upon the fact that, providing simultaneous assistance through several or different approaches it can be appreciated (in the systems' feedback to the assistance provided) that they will respond showing more knowledge of the compliance requirements, action plan strategy necessary and tools needed to achieve the financial technical and managerial capacity that will allow them to provide a safe drinking water to the community members. Notwithstanding the limited resources, this Department continues having two ongoing projects: Operators' Certification, and Circuit Riders, although, due to the fiscal situation and other situations previously indicated, the Circuit Riders pilot project contract has not been executed and, thus, these activities have been delayed and to certain extent halted in their expansion to new or different systems during this reporting period. During this year, DOH continued using the Sanitary Surveys as part of its regular day-to-day activities but unable to combine it with the Adapted CPE process as a new way of approaching and outreaching the systems. This effort is aimed towards providing the systems with an adequate toolbox that will enable them to recognize, analyze and solve problems that they encounter and that may result in their non-compliance with the law due to the lack of funds caused by the federal cut-off and the financial situation. As previously mentioned, during this reporting period a Second PAS was established in order to assist them to attain compliance.

DOH has been engaged for several years in undertaking Comprehensive Performance Evaluations (CPE's) as part of the technical assistance process in order to be more effective. To this effect, in order to further the assistance process and based on DOH's experience in undertaking and evaluating CPE under the PWSS program, DOH engaged in the development and validation of an adapted Comprehensive Performance Evaluation methodology applicable to the small Non-PRASA systems.

Throughout the last years DOH completed three projects which intended the modification and enhancement of the Comprehensive Performance Evaluation (CPE) applicable to small systems. Valuable information was obtained on the technical, administrative, and financial situations of the systems. As part of the application of the adapted CPE methodology other activities for small systems were designed and undertaken:

- Inspections to small systems and drinking water sources.
- Meetings and workshops for water suppliers, communities, municipalities, and other entities regarding development of adequate technical, financial and managerial capacity.
- Revision of the Capacity Development Manual
- Orientation and training to community personnel based on the "Capacity Development Manual" (the Manual), using the revised edition.
- Establishment of the system's profile by performing evaluations (determine and identify compliance status, sanitary deficiencies, operation and maintenance conditions, and, in general, the current situation of the community and its status with respect to capacity development) using capacity development criteria, the Manual and checklist prior to the implementation of the Project. Perform a second evaluation of the system in order to appraise and assess the achievements obtained as a result of the implementation of the project.
- Small systems technical, administrative and financial evaluations.
- Assistance in the communities' organization.
- Assistance in the small systems operators' training/certification process.
- Identification and elimination of the limiting factors that impair compliance with SDWA.
- Identification of innovative solutions for encouraging compliance and eliminating factors that cause history SNC.
- Perform Small systems Sanitary Surveys.
- Assistance to the community in the preparation of an Action Plan to eliminate limiting factors in order to achieve and maintain the system's compliance with applicable national and state drinking water regulations.
- Establishment of circuit riders in order to assist the communities throughout the implementation of the action plan and capacity development.

It is important to note that the severe economic situation affecting Puerto Rico impacted the ability of the government agencies in the execution of their roles and responsibilities and in the case of the Department of Health, the assistance provided to small drinking water systems. Since fiscal year 2016 and up to 2019, DOH had to halt the adapted Comprehensive Performance Evaluation (CPE) methodology which has been validated and has been used up to 2017 on systems included in new contracts for technical assistance in order to measure the technical, financial and managerial capacities and the preparation of the corresponding Compliance Action Plans.

It is the intention of DOH to continue using the adapted CPE in the Non-PRASA systems. The CPE constitutes the main tool used in order to determine the possible nature of a problem that impairs the systems' compliance. The CPE methodology continues providing profiles of the capacity status, and thus is a tool considered when designing the appropriate assistance that will move the systems towards compliance. Follow-up through regular systems assistance was provided to the systems included in the pilot projects developed by DOH. Because an extension to the contract was not possible, including DOH's intention is to provide continuous follow-up of the implementation of their compliance action plans.

Notwithstanding DOH's approach with the CPE's program, we have evaluated the assistance that we have been providing and we have continued implementing the approach delineated in the Technical Assistance Support (TAS). The TAS has also proven to be effective because coordination in

the approaches exerted in concert with other Commonwealth assistance initiatives has improved and it has been maximized. The TAS is a tool that has been considered and used in the implementation of the Capacity Strategy (See *Attachment II and II-a*) DOH continues implementing the TAS that is currently providing in an organized manner the assistance that these systems need.

As part of the implementation of the TAS, during the last three years DOH continued the oversight to approximately two hundred forty (240) systems that have been previously considered within pilot projects, as a follow-up of previous action plans and or capacity determinations in order to continue availing their process of compliance and capacity attainment. These projects were also advised on funding availability and compliance activities. Concurrent assistance in the area of capacity, as well as operator certification was provided, notwithstanding the technical assistance provided in the area of compliance and the use of Circuit Riders as a tool for assistance. DOH also worked in the area of small systems security. Currently, security grant projects have been completed. Nevertheless, DOH expects to continue exertions to outreach the greatest number of systems possible with the limited funds available where all these concepts are presented to the systems.

In order to enhance the evaluation of systems using the Adapted CPE, DOH added the undertaking of Sanitary Surveys as a new approach in order to gather information from another standpoint that will provide new tools useful for the systems in the compliance process. During fiscal years 2016-17 and 2017-18, oversight was provided to systems that were subject to sanitary survey and were evaluated taking into account, within others, the optimization of the system. Also, DOH provided follow-up and guidance in the implementation of their resulting compliance action plans, thus providing the tools for optimizing them and re-enforce the maintenance and/or attainment of capacity.

Once more DOH has combined approaches and in 2020 the surveillance monitoring was added to them in a new pilot project. During fiscal year 2020 approximately fifty (50) systems that were previously considered within pilot projects, DOH continued its oversight as a follow-up of previous, sanitary surveys, and/or action plans and/or capacity determinations in order to continue availing their process of compliance and capacity attainment. Also, DOH continued the technical assistance provided in the area of compliance and the use of Circuit Riders as a tool for assistance during this year. In addition, DOH continued working the area of small systems security and emergency response due to the Hurricanes. Notwithstanding that a proposal for providing assistance to small systems was received and evaluated and all paperwork and documentation was prepared in order to enable the execution of a contract this was not possible until October 2020 due to several reasons:

- the federal cut-off of electronic funds transfer mechanism between the US Treasury and the Commonwealth;
- financial distress of the government of Puerto Rico/impairment for use of local funds to execute contract;
- enforcement of the PROMESA Act and limitations in the contracting of services;
- Hurricanes Irma and María impact in the economy due to resiliency activities;
- earthquakes have been affecting and continue affecting the island's activities since December 2019;
- lockdown of March 2020 by the Honorable Governor of Puerto Rico of all activities due to the worldwide spread coronavirus pandemic; and

- flooding resulting from the potential cyclone Isaias on July 30, 2020, that caused an electric power failure.

For this reporting period technical assistances provided combined the undertaking of eighty-four (84) Sanitary Surveys in Non-PRASA community drinking water systems with an evaluation of its technical, financial, and administrative capacity in order to bring these two sources of information together and obtain a description of the community systems status and condition. This would favor the preparation of a comprehensive compliance action plan that will guide the systems towards the achievement of compliance with the SDWA requirements.

As previously mentioned, during the last three years approximately, eighty-four (84) Sanitary Surveys were undertaken in term of the status of capacity development attainment. In addition, per year, more than one hundred small drinking water systems were assessed, and we have continued the assistance advising them of the new requirements of the law while also offering assistance on this effect, including the preparation/understanding of documents necessary and required to attain capacity and DWSRF funds availability. DOH has coordinated efforts with existing partnerships and has been in the process of identifying and establishing new partnerships that can provide continuing support to these systems in order to provide assistance beyond the completion of the pilot project to assure continuation of the implementation of the action plan.

DOH continues including within its regular work plan activities towards developing and preparing the necessary actions that will provide assistance and support to maintain these systems on the right track for compliance and sustainability.

The CPE methodology, which was completed and validated during FY 2008-11, was also used up to FY 2017 on systems included in previous contracts for technical assistance in order to measure the technical, financial, and managerial capacities including the Compliance Action Plans prepared and implemented for approximately one hundred (100) systems assisted. We continue using the CPE methodology which provides valuable information on the progress of the systems towards attaining capacity.

During the previous reporting period there was another contract of two year in partnership with a non-profit entity that ended in FY 2016, where the CPE methodology being used under a Circuit Rider project was enhanced by adding operator's support and Sanitary Surveys (SS), with their corresponding corrective action plans and implementation schedules. The activities that were completed as of September 2016 under the Circuit Riders project were detailed in the previous report. These activities covered three areas of assistance: provide operator support, undertake complete Sanitary Surveys and measure of the capacities through the adapted CPEs. Since September 2016, no new contracts have been executed, but notwithstanding the cut-off, DOH provided a combination of technical assistances with direct evaluation of systems condition and capacity development assistances. As previously stated, now, with the cut-off ridded as of September 2019, DOH's intention is to execute and to this effect has delineated a new approach for the use of funds and for entering into a new contract or hire personnel to undertake those activities during the upcoming fiscal year. As previously stated, during fiscal year 2020 DOH was able to hire under contract a total of ten (10) persons for the new pilot project on surveillance monitoring. As part of this pilot project a total of 66 CPEs were undertaken through FY 2020 to FY 2022.

DOH is constantly examining new ways of how to approach and outreach the systems because, as it can be appreciated, it is difficult to draw a line between development/technical assistance and other initiatives to approach systems.

As previously discussed, DOH examined the assistances provided by supporting agencies that are in the Multi-sectorial Committee and Circuit Riders project, taking into account their own individual goals and their exertions towards advancing the systems in their process of compliance, in order to provoke a change in the static position that they had reached throughout the years in their process of achieving compliance. It is necessary to emphasize that the Non-PRASA Strategy has been revised in an effort to make it more effective in promoting and increasing the progress of the systems towards compliance. The revision moved towards

the increase of the number of systems that monitor in accordance with the SDWA, and the water quality needs to continue improving.

For instance, although DOH has been limited in its ability to enter into contracts we continue with the referral of systems to the circuit riders' partners in order to provide to the community the support and assistance to the systems with the preparation of the required information for the compliance of the lead/copper rule within others. It is DOH's responsibility to advise and assess systems on their compliance requirement with the SDWA. For the compliance with this rule the approach is an evaluation of the individual needs or a case-by-case evaluation of the activities necessary for increasing their capacities in order to move on towards compliance with the SDWA requirements.

DOH continues encountering the challenge of how to outreach the greater number of communities in a short term with very limited resources. We must mention that the Capacity Program Strategy has been successful and proficient since its implementation. Evidence of this success is that we were able to measure capacity through several projects that provided technical assistance and support to the systems. Also, we need to acknowledge the success of the Strategy when we have been able to measure increase in systems disinfecting, increase in negative samples, increase in the number of systems complying and moving towards complying. We have to also acknowledge that although the numbers may seem small, or little, progress and improvement is there. We have to also acknowledge that after being in such adverse conditions and circumstances caused by the three hurricanes in such a short period of time and under pandemic conditions as included earthquakes the systems are there hanging up and moving towards compliance. Consistently, with the pilot projects in action compliance action plans have been prepared and implemented to assist systems and a change in the capacities has been evident. Another achievement of the Capacity Development is that the CPE methodology is proving to be able to measure, evaluate, and determine capacity and that this capacity has changed due to the implementation of the continuous use of the Manual. The systems evaluation is enhanced each time a new approach is added, such as the use of the Sanitary Survey, which together with the Actions Plans related to the CPE help to pinpoint needs. Now with the revision of the strategy who has incorporated the promotion of the use of asset management plans in the systems we are optimistic and looking forward to increasing and improving the compliance.

Because the pilot projects have been successful DOH's intention is to continue participating in new projects where capacities are measured while general assistance is provided and, at the completion of the projects, it has been proven that the capacities increased. Up to now and notwithstanding the

difficulties the goals and objectives of these have been. The pilot projects were able to validate the assistance process in small systems by proving feasible and effective. In general, new projects will continue with the:

- use of the Capacity Development Manual as a tool for assisting and guiding them in attaining capacity,
- implementation of the CPE methodology designed for profiling and measuring capacity, together with the Sanitary Survey evaluation
- outreach system consequently though the circuit riders' approach, emphasizing operators' certification, and
- use of the Capacity Development Checklist as part of the endorsement and permitting process.

The overall of the activities under contract for assistance to systems are conducted towards gathering technical information of the systems to determine their compliance status and to get an overview of their current situation. DOH tries to cover and use, also, laboratory results, technical aspects which are gathered as part of the systems evaluation including, literature revisions where available from investigations conducted in Non PRASA systems. DOH will be using, when available, data related to "recognition visit" of the system's facilities, including to the extent possible, the use of the geographical location by the Geographical Positioning System (GPS) which is useful for mapping the basin of the area. Also important are initial visits to acquaint the system with the project to be undertaken through the Circuit Riders process.

The "Adapted CPE" evaluation document has been and continues to be a key element used as a tool for gathering information regarding the system's status and condition or profile. With this information case by case evaluations are possible, and the technical assistances are provided including, among others, the:

- preparation of administrative and regulatory documents necessary for an adequate administration of the system,
- development of proposals for those systems that are in the process of developing infrastructure improvements,
- assessment of the water producing capacity of the system source,
- implementation of a water conservation campaign,
- improvement to their rate/users charge and invoice methods,
- guidance for those communities in the process of establishing an administrative committee for the systems.

The case by case or system by system evaluation is directed towards the general compliance of the system with the SDWA. This direct interaction is an effective educational tool that encourages communities towards sustainability. However, as previously stated, due to the cut-off and the economic situation encountered by the government of Puerto Rico, the CPE's had been halted and or extremely limited. It is important to emphasize that as of September 5, 2019 the cut-off was totally ridden, therefore, DOH expects to restart this activity during next fiscal year.

As we have indicated DOH has continued providing support to the existing drinking water systems that were considered in previous pilot project. The follow-up action given to systems has been also effective because systems understand DOH's concerns in their compliance process. DOH will continue advising them of the new requirements of the law while also offering assistance on this effect, including the preparation/understanding of documents necessary and required to attain capacity and DWSRF funds availability. Exertions are directed towards identifying, establishing, and maintaining partnerships that can provide continuing support to these systems in order to provide assistance beyond the completion of the pilot project to assure continuation of the implementation of the action plan and, thus, sustain and maintain the support to these systems. Now with the revised strategy DOH will also provide assistance to the systems in their process of preparing asset management which now with the revised strategy DOH will be undertaking said promotion in the systems.

Repeatedly in the presentation of results in prior reports as well as in this one we have mentioned it is difficult to draw a line between capacity development/technical assistance and other initiatives used to help systems. Throughout all these years, DOH has provided simultaneously assistance through different projects. Within the first ones were three projects: Operators' Certification, Circuit Riders and Security. DOH has identified and determined that it is necessary to continue offering the assistances and/or orientations, notwithstanding if the project was completed or ended. This is necessary in order to give continuity and maintain the knowledge acquired and allow it to pass forward for providing the knowledge to the systems owners or operators in the case that these changes or there are new owners. This intention is limited in the funds available to cover or extend the outreach to new systems, but we continue doing it in all instances that this is possible. This is a new way of approaching and outreaching the systems and thus provides them with a toolbox that will enable them to recognize, analyze and solve problems encountered and that may result in their non-compliance with the law. As of today, we continue adding new projects all concepts to the ones already provided such as the Sanitary Surveys and the Adapted CPEs and the new one of monitoring surveillance. We expect to have in the future one addressing asset management plans

It is important to note that notwithstanding our limitations we have partner agencies that constitute circuit riders' partners that within their own goals continue providing their support and assistance to the systems by undertaking evaluations of the individual needs or case-by-case determinations for increasing their capacities and we have cooperated with them availing information and tools used by this Department. This is the case of the compliance with the lead/copper rule. This concurrent assistance is the result of the interagency committee, which was established several years ago, created with the purpose of dealing with the Non-PRASA Strategy. We have stated that this committee continues providing the assistance through the supporting agencies but with a variance in the approach of the committee where each agency maintains their own individual goals and exertions, but they continue guiding the systems in their process of compliance with the applicable regulations. We have identified also that it is necessary to reactivate in full the Interagency Committee to see as of today, and throughout the years, their own individual goals have changed and is applicable any changes in their course of action have occurred due to the financial situation. Other partner agencies with existing Circuit Riders programs continue assisting the systems among other, in the preparation of technical and financial proposals that are required by agencies that can provide not only funds but also support in the different areas of capacity. ***Appendix A*** provides additional

information on activities, accomplishments, outputs, and outcomes under the Technical Assistance/Capacity Development Assurance.

b. Operator Certification Program

In August 2002 EPA approved Puerto Rico's Operator Certification Program. Amendments to Act No. 53, of July 13, 1978, creates the Board of Examiners of Operators of Treatment Systems and/or Plants for Drinking Water and Wastewater to conform it with the federal requirements of the Operator Certification Program, as well as to the Regulation No. 5440, "Regulation for the Certification of Operators of Treatment Systems and/or Plants for Drinking Water and Wastewater", as amended. This was another step taken to **ensure** the compliance of systems with the SDWA. For several years DOH administered the Operator Certification Expense Reimbursement Grant where DOH, within others, developed a draft plan for the distribution of training funds including the criteria for the distribution of such funds based on its availability. Training and licenses fees were covered for several years to those that qualified for it. Nevertheless, once the funds were totally used DOH continued offering the trainings and assisting the systems through other initiatives. As we have stated before, this was necessary in order to give continuity of the information and knowledge that was acquired and thus, to have it available for new operators that come to the systems. We regret that due to the financial situation we have not been able to undertake trainings aggressively in this area.

During the last three (3) years, DOH has undertaken within others a series of activities in order to assist small systems in the compliance with the implementation of the Operator Certification Program. These include but are not limited to:

- advise community drinking water treatment systems owners of the future need for certified operators and the qualifications which may have to be met. Approximately 250 systems are annually advised;
- revise on an annual basis existing plant classification and propose re-classifications, where applicable;
- revise existing Commonwealth laws and regulations, as requested, or needed;
- revise the Operator Certification Program submitted to EPA if any major change may happen.

The Operator Certification Program set-aside funds for several years now (fiscal years 2016-17, thru 2021-22) were banked. Notwithstanding, DOH has various responsibilities concerning the Operator Certification Program and has complied with all of them. DOH undertook for several years certain activities that were performed as part of the Operator Reimbursement Grant as well as assistance to the systems in their process of compliance with the SDWA. Once the grant ended, DOH continued providing these assistances under contract with a private consultant for approximately four additional years and with the intention of renewing or entering into a new contract every two years. As we have indicated since FY 2016 and up to September 2022, the financial situation and the federal cut-off did not allow to extend or renew this contract. Nevertheless, DOH has complied with the annual visits and oversight to all the treatment plants and their evaluation during the field inspections undertaken. As previously stated, now that the cut-off was totally ridden, it was DOH's intention to execute a new contract or hire personnel to undertake such activities. Nevertheless, due to the fact that Puerto Rico is still under the process of debt restructuring and oversight by PROMESA the financial liquidity is not readily available yet for those purposes.

For several years most of the small system operators in Puerto Rico did not either qualified or complied with the requirements necessary to file an application for the operator exam. The Program

facilitated the systems' operators to establish a mechanism and strategy to comply with these requirements and provided them assistance through the certification process.

Also, the system operators that participated in the projects' trainings were capacitated to enhance and reinforce their knowledge of the system operation process. These trainings provide for improvement in the operational performance which may warranty safer potable water production and promotes public health protection. We also had train the trainer in order to assess better the systems and the owners.

Thus, certain related activities that were undertaken are detailed in the report "Puerto Rico Operator Certification Program Annual Submittal of Activities Undertaken" submitted to EPA as of September of each fiscal year of this reporting period. ***Appendix B*** provides additional information on activities and accomplishment under the Operator Certification Program associated to Capacity Development, per year.

During the fiscal years since the cut-off notwithstanding there was no contract with a private entity to provide training and/or licensing to current operators of small systems, DOH continued providing information and orientation regarding the process for examining and obtaining the operators' license. In addition, DOH continued participating as member of the Examining Board for the Certification of Operators in the process of licensing and exams administration. DOH, thus, continued exercising its legal authority up to present and notwithstanding the cut-off period because it is its responsibility. Even under the years of cut off and after its riddance it was PRDOH's intention to request and/or revise existing proposals and award a contract as soon as possible in order to continue a Circuit Rider Program Project with activities related to the Operator Certification Program. Although it was not able to extend the contract agreement or enter into a new one due to the financial situation of the government of Puerto Rico and the strike of hurricanes Irma and María during September 2017, PRDOH performed during FYs 2017 and 2018 the following activities and directed its efforts and limited resources towards providing orientation on:

- training of systems' owners or operator to become certified as operators;
- assisting systems' owners or operators with their exam application, necessary and/or applicable fees; and
- assisting systems' owners in order to obtain their operator license and/or applicable fees.

It must be noted that up to date no contract award has been possible with a private contractor to undertake certain circuit riders' activities. Nevertheless, several individual contracts for undertaking technical assistance and state management activities were possible. The prevailing pandemic and financial situation provoked personnel turnover of these contracts and has limited the assistance provided and the undertaking of activities. To the extent possible DOH continued using under the Technical Assistance set-aside the adapted CPE methodology as a tool considered when designing the appropriate assistance that will move the systems towards compliance. Also, under the previous contract with RCAP Solutions[19], assistance for the training for Operator Certification was provided, as well as the use of the Sanitary Survey for assessing small systems conditions. During this year 2022 it has

[19] RCAP at the time provided under said contract technical assistance and consulting services to assist in an average a total of 48 public water systems. These were selected by the PRDOH in an effort to assist them towards system compliance and to that effect, the integration of the circuit riders' concept was also used. Future contracts are to incorporate these concepts.

not been possible to continue this approach under the current contracts been these, only professional service contract, specific for state management and technical assistance activities It is important to note that, although the contract with RCAP ended in September 2016, DOH has undertaken these activities to the extent possible and as such has presented them in previous reports. The regular pace of assistance to a given number of systems *i.e.* approximately 48 annually has not been possible.

Although activities under the Operator Certification Program continued slow and even halted, and DOH had no formal contract for undertaking activities under the Circuit Rider Program Project, there are activities on technical capacity that are directly related to the Operator Certification Program that were undertaken in coordination with other circuit riders' partners. Within these most relevant activities in FY 2022 and during this reporting period, the following were performed:

1. PRDOH, in coordination with the Board, evaluated the exam applications for compliance with the requirements of the exam and undertook the examination process.
2. PRDOH inspected and visited all the public water systems to assess compliance of the systems with the applicable SDWA regulations.
3. Monthly meetings with the Board to discuss and evaluate the regular issues presented including licenses award.
4. Provided to Stakeholders with the inventory of systems that need to reinforce their capacity to manage their drinking water system.

Nevertheless, technical assistance and orientation has been provided to the systems regarding workshops and trainings available, law requirements, and others. Many of these through coordination with RCAP/AWWA and other partners.. The seminars and workshops explore alternatives to help the communities among others with their financial conditions, payments, as well as how to increase the earnings regarding connections and others.

During last year 2020, the workshop "*Adiestramiento sobre Manual de Operación y Mantenimiento & Plan de Respuesta a Emergencia*" was offered online by RCAP Solutions on June 20, 2020. Also, the flyer "Consejos Operacionales para los Acueductos Comunales", prepared by RCAP, was distributed by DOH to the small systems operators. During FY 2022 a total of thirty (30) systems attended the workshop "*Repaso para Comunidades Rurales Tomar Examen de Certificación Operador Plantas de Tratamiento – Agua Potable*" offered by RCAP to the rural communities as a review for the operator's certification exam. Coordination with DOH was undertaken for the workshops offered. A two days' workshop was scheduled for August 30 and September 1, 2022. Many of the workshops were online although others were presential. These workshops are offered free of cost.

We have to draw attention to the fact that it is necessary to move towards undertaking technical assistance and orientation to the systems regarding workshops and trainings available, and law requirements, because these are vital for the systems compliance. Now that the cut-off has been eliminated, this is priority for DOH and, now that the cut-off has been ridden, we will reinitiate it by executing a contract or hiring personnel to give continuity to them.

As it can be appreciated another tool towards improving one of the aspects of capacity, the technical aspect, has being furthered with the operator certification program. The assistances provided through the grant has covered the small systems that are in the Non-PRASA Strategy as well as those in the Capacity Development Strategy.

c. Source Water Assessment Program (SWAP)

The Source Water Assessment Program (SWAP) was established in March 2001, when DOH received the approval of EPA for the development and implementation of Source Water Assessment Program. This Program was established in accordance with Sec. 1453 of the SDWA, 1996) which emphasized the need to protect drinking water sources and required the state to the state to develop and implement as such the Source Water Assessment Program.

Through a cooperative agreement between the United States Geological Survey: Joint Funding Agreement (JFA) PR0000600 the program was implemented. Although the funding for the establishment of the program ended the program continues providing meaningful information to direct ongoing source water protection efforts and the overall drinking water program in Puerto Rico. With this program it is possible the identification of potential sources of contamination in order to address the greatest threats to drinking water and guide future source protection efforts in concert with the corresponding Commonwealth agencies that can assist DOH in this process due to their corresponding role and responsibility. As stated previously, the SWAP provides the information needed to develop programs within the multiple barrier concepts. The major products of the program are directed towards where and how intensified, site-specific source water protection will be needed. As it can be appreciated, the information regarding the Non-PRASA systems is also part of this project. The information obtained with the SWAP continues being used for helping the small systems and particularly the Non-PRASA systems towards achieving progress in the protection of their source and thus prevent their contamination, the operation of the systems which in turn helps them attain capacity.

The SWAP report provided the tools and information necessary to make the decisions regarding the use of the sources of water and the development of protection and contingency plans. Also, it informs the communities and systems' owners on the activities that may affect the quality of the drinking water. The evaluations undertaken will help to generate significant local efforts to prevent contamination and develop strategies for the protection of drinking water sources. The SWAP is a tool that will further capacity attainment, mainly on the technical area of capacity. ***Appendix C*** provides SWAP data available for technical assistance to small systems.

For this reporting period DOH has continued providing technical assistance to systems, particularly small systems that are concerned in knowing their surroundings, particularly potential sources of contamination, which is provided by the SWAP final results. This information is provided to interested parties such as private and public entities, government agencies, university students and teachers for its use for watershed studies.

PRDOH understands that the assessments performed provide or help in the generation of significant local efforts that, in turn, will help to prevent pollution and develop protection strategies for drinking water. This is supported by the evaluation of the final Inter-System Susceptibility since the results obtained reflect the desirable results expected.

V. New Enforcement Targeting Tool (ETT)/Former Historical SNC Systems Lists

As we have mentioned in fiscal year 2010, there was a policy change that became effective immediately which substituted the existing contaminant by contaminant systems classification: Historical Significant Noncompliance (HSNC's) compliance strategy. Up to fiscal year 2011, any system

that had been identified as a significant noncompliance (SNC) for any three (3) quarters within a three-year period was defined as a system with a history of significant noncompliance (HSNC). But this changed since fiscal year 2012 where the new policy known as the *Enforcement Targeting Tool (ETT)* is focused on the drinking water systems with the most serious or repeated violations. This is intentionally in order to produce responses to violations in a "more" timely and suitable response. This new policy takes the systems with the most significant violations to the top of the list for enforcement actions in states. The PWS are prioritized by assigning each violation a "weight" or number of points based on the assigned threat to public health. Each violation receives a score which in a water system are added to provide a total score for that public water system (PWS). A PWS with a score of 11 points or greater is considered as in significant noncompliance with the National Primary Drinking Water Regulations (NPDWR). All these systems are subject to the required enforcement actions.

Notwithstanding the reporting under the ETT, for a comparative purpose only of previous data, the following table summarizes the total number of bacteriology and turbidity SNC systems by fiscal year by system's owner.

SNC Systems Bacteriology and Turbidity			
Fiscal Year	**Total SNC**	**PRASA**	**Non-PRASA**
2000	310	87	223
2003	275	75	200
2006	273	63*	210*
2007	189	18	171
2008	189	12	177
2009	188	3	185
2010	201	7	187
2011	159	1	158
* Figures used for the 2008 Report. For this Report, the PRASA systems for year 2006 are 29 and the Non-PRASA are 201.			

For discussion purposes in this report the last **three** reporting periods are used and detailed in the following table:

Systems with the most serious or repeated violations (SMRSV) Bacteriology and Turbidity			
Fiscal Year	**Total**	**PRASA**	**Non-PRASA**
2012	149	0	149
2013	174	0	174
2014	154	1	153
2015	160	2	158
2016	141	0	141
2017	154	8	146
2018	261	14	247
2019	265	27	238
2020	218	13	205
2021	143	6	137
2022	188	39	149
Data verified as of September 2022.			

In previous reports we presented in general a comparison of the number of Systems with Violations (before SNC) since fiscal year 2000 to FY 2016 and we indicated that it was appreciated a reduction of 55% in the number SMSRV (before SNC). The FY 2014 number of SMSRV (before SNC) also shows a reduction of 18% in comparison with FY 2009, and FY 2016 in comparison to FY 2014 shows again a reduction of 8% in the number of SMSRV (before SNC). Although from FY 2000 to FY 2016 there is a marked reduction of 55% when we examine FY2000 to FY 2019 it can only be appreciated a small reduction of 15%. This is due to the fact that with changes in regulation and with the ETT more systems are covered under it. Added to this, in 2017 the severe conditions encountered with the hit of hurricanes Irma and Maria more systems were unable to enter in compliance. Also, a series of systems that were unknown and in operation but not registered under DOH became registered, thus the number of systems increase. If we look into the change by year the FY 2017 number of SMSRV (before SNC) shows an increase 9% in comparison with FY 2016, and FY 2018 in comparison to FY 2017 shows an increase 69% in the number of SMSRV (before SNC). The FY 2019 number of SMSRV (before SNC) shows only an increase of 1.5% in comparison with FY 2018. By year the FY 2020 number of SMSRV (before SNC) shows a decrease of 18% in comparison with FY 2019, and FY 2020 in comparison to FY 2021 shows a decrease of 34% in the number of SMSRV (before SNC). However, the FY 2022 number of SMSRV (before SNC) shows a decrease of 29% in comparison with FY 2019.

Although the numbers seem to be in contradiction where in effect the number of systems SMSRV in the last three years are decreasing although there are some years where there is certain degree of increase. This seems to be a set-back. Although it seems to be a set-back because there is an increase, that increase is less each year. We understand that eventually when the environmental circumstances and resilience activities improve the number of systems SMSRV will continue diminishing. In general, the reduction tendency or pattern continues for the number of SMSRV (before SNC). We cannot disregard special circumstances that impaired the continuous marked reduction by delaying the systems returning to compliance and once more moving the number of systems towards an increase in compliance. As it can be appreciated the Program will continue directing its exertions towards the increase of the compliance. This can be attested by the strategy. The strategy demonstrates that the efforts undertaken continue proving an improvement in the compliance pattern and thus the reduction of Number of Systems with the most serious or repeated violations (before SNC).

A. PRASA's Systems

As stated previously, since FY 2010, no HSNCs list is required. Nevertheless, in compliance with the new regulation, DOH has been with the reporting under the ETT. The ERP is a tool used to determine steps to help the systems return to compliance. According to the ERP, these systems become a priority system for EPA. Population is a key factor for awarding priority. The higher the population, the higher the priority in the management of the system towards compliance. Up to date, DOH has been in compliance with this requirement.

As we also mentioned in prior years reports, a reduction trend was observed in terms of PRASA systems with the most serious or repeated violations (before SNC). Significantly in FY 2012 and 2013 in terms of Bacteriology or turbidity no systems with the most serious or repeated violations (before SNC) was registered.

Looking back to the history of facts in first instance, in 2004 the Strategic Plan addressed PRASA SNC systems where the objective was to increase the percentage of population receiving water that meets the health-based standards and thus by default move systems moving towards compliance with the SDWA. This Strategy was an initiative between DOH, PRASA and EPA. Because it was necessary to achieve and maintain sustained compliance with the applicable state and federal laws and regulations in the PRASA systems, this Department filed a lawsuit (complaint) in the Superior Court in February 2006.

An agreement was reached through a Consent Decree (Transaction Agreement) filed by both parties (PRDOH and PRASA) in the Superior Court in December 2006. This legal method resulted as the most efficient, expeditious and economical way to enforce PRASA's compliance as soon as possible, without incurring in additional litigation, as agreed in the negotiation of the Consent Decree. It was preliminarily approved by the Court in March 2007. EPA comments were issued, received, and re-negotiated with PRASA resulting in an amended Transaction Agreement that was filed in the Court on June 16, 2008, and finally approved on June 24, 2008.

This amended Transaction Agreement contained a comprehensive action plan that included, among others, important elements such as: Remedial Measures (short, medium and long term operational and infrastructure projects), Preventive Measures, Interim Mitigation Measures, Preventive Maintenance Program, Standard Operational Procedures, Training and Certification of Operators Program, and Optimization Program.

This Agreement not only addressed the SNC PRASA systems but also covered all PRASA systems in order to prevent future violations and, therefore, prevented that systems become an SNC or now called priority systems under ETT/ERP or systems with the most serious or repeated violations (SMSRV).

With the new ETT/ERP, systems with score equal or above 11 are reported and are prioritized for enforcement actions and their return to compliance. It is important to note that this new enforcement tool covers all regulated contaminants and replaces the contaminant-by-contaminant compliance strategy. This new strategy brings the systems with the most significant violations to the top of the list for state enforcement actions. The following tables shows PRASA systems with total score equal or greater than 11 points. With the past and present information provided it is evident the progress of the systems and the effectiveness of the Strategy. It must not be disregarded that with the ETT all systems have been included in the strategy thus the number of systems is greater.

The number of systems in quarters ending October FY 2013 to October FY 14 increased by twenty-nine (29) systems. This increase may respond to the implementation of the new compliance determination under the Stage 2 - Disinfectant/Disinfection By-products Rule, where the compliance

determination changes from the Running Annual Average (RAA) by system to the Locational Running Annual Average (LRAA).

SYSTEMS WITH SCORES GREATER THAN 11 FROM FY 2013 to FY 2014		
Systems	**Quarters**	
	FY 2013	**FY 2014***

	Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct
PRASA Systems	8	9	2	19	21	14	37	48
* Final data for FY 2014 revised as of June 2017.								

From October FY 15 to October FY 16 there was only an increase by two (2) systems. All the systems out of compliance continue to be addressed under the Transaction Agreement (Consent Decree). Other significant number of violations are being registered under the Lead and Copper Rule for systems non-compliance to provide copy of the individual sampling results of lead to the person at each sample locations in a required deadline as required by the rule (Lead Consumer Notice).

SYSTEMS WITH SCORES GREATER THAN 11 FROM FY 2015 to FY 2016*								
Systems	Quarters							
	FY 2015				FY 2016			
	Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct
PRASA Systems	55	65	40	44	50	52	48	46
* Data as of June 2017								

ENFORCEMENT TARGETING TOOL (ETT) RULE DATA SYSTEMS WITH SCORES GREATER THAN 11 FROM FY 2014 to FY 2016												
Systems	Years/Quarters											
	FY 2014				FY 2015				FY 2016			
	Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct
PRASA Systems	21	14	37	48	55	65	40	44	50	52	48	46
* Final data for FY 2014 revised as of June 2017.												

The following table shows PRASA systems with total score equal or greater 11 points for the last two reporting periods.

ENFORCEMENT TARGETING TOOL (ETT) RULE DATASYSTEMS WITH SCORES GREATER THAN 11 FROM FY 2017 to FY 2019												
Systems	Years / Quarters											
	2017				2018				2019			
	Jan	Apr	Jul	Oct	Jan	Apr	Jul†	Oct	Jan	Apr	Jul	Oct*
PRASA	30	37	51	62	62	60	23	23	52	31	36	36

* Data available for the quarter of October 2019 was subject to EPA's revision of the data they submitted to DOH, as EPA indicated the data had an error. However, the data for this quarter was revised and included.

† Due to the extreme circumstances resulting from the hurricanes Irma and Maria violations corresponding to the next quarter after the hurricanes were not registered. Also, data entry was not possible due to problems with the software of SDWIS, which has delayed the register of violations corresponding to the following months.

We have to point out that extreme conditions resulting from the hurricanes Irma and María impaired the ability to continue the regular tracking needed to work the quarterly ETT list. During the months of September through December 2017 and as an exception, violation were not registered in the SDWIS. Moreover, DOH has encountered software difficulties when entering the data corresponding to the quarter of July and October 2018. This was known to EPA and EPA worked on the access to the SDWIS system to register this information.

We must emphasize, as indicated in the table above, that due to the extreme circumstances resulting from the hurricanes Irma and Maria violations corresponding to the next quarter after the hurricanes were not registered. Also, data entry was not possible due to problems with the software of SDWIS, which has delayed the register of violations corresponding to the following months.

We have to point out also that extreme conditions resulting from the hurricanes Irma and María impaired the ability to continue the regular tracking needed to work the quarterly ETT list. During the months of September through December 2017 and as an exception, violation were not registered in the SDWIS. Moreover, DOH continued encountering software difficulties when entering the data corresponding to the quarter of July and October 2018. This was known to EPA and fully discussed, and EPA worked on the access to the SDWIS system to register this information. Data available for the quarter of October 2019 was subject to EPA's revision of the data they submitted to DOH, as EPA indicated the data had an error. However, the data for this quarter was revised and included.

Notwithstanding the above-mentioned technological difficulties encountered, if we look into the data available the number of systems with scores greater than eleven continue diminishing particularly in this reporting period .

Thus, after six years of Hurricanes Irma and María, and after having hurricane Fiona and the resiliency efforts when we look to the results for this reporting period in next table we can appreciate that the numbers are diminishing.

ENFORCEMENT TARGETING TOOL (ETT) RULE DATA SYSTEMS WITH SCORES GREATER THAN 11 FROM FY 2020 to FY 2022												
	Years / Quarters											
	FY 2020				FY 2021				FY 2022			
	Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct
PRASA Systems	37	16	18	22	15	21	7	2	6	7	4	4

* Final data for FY 2014 revised as of September 2023.

B. Non-PRASA Systems

Following is the former **Historical Significant Non compliers or SNC** list for Non-PRASA systems.

Non-PRASA SNC Systems Bacteriology and Turbidity		
Fiscal Year	**Total SNC**	**Non-PRASA**
2000	310	223
2003	275	200
2006	273	210*
2007	189	171
2008	189	177
2009	188	185
2010	201	187
2011	159	158
* Figures used for the 2008 Report. For this Report, the PRASA systems are 29 and the Non-PRASA are 201 for year 2006		

The FY 2003 SNC shows a reduction of 10%; and FY 2006, a reduction of 6% in comparison to FY 2000 SNC; the FY 2009 SNC shows a reduction of 17%; and FY 2012, when the systems classified as **SNC list changed to be called as "Systems with the most serious or repeated violations" or SMSRV** a reduction of 33% in comparison to FY 2006 SNC.

There have been changes in the regulations that have made a difference and have provoked changes in the management and compliance of systems. If we look to FY 2006 Historical List we can appreciate the at that point in time there were 210 Non-PRASA systems. Out of these, 164 or 78% were included in the Non-PRASA Strategy and the remaining 46 systems were been managed or addressed with the technical and educational assistance initiatives and or pilot projects previously mentioned, as well as the State Enforcement existing procedures at the time.

For Non-PRASA systems, the majority of SNC identification was based on bacteriology compliance determination. We have to point out that now, currently, with the latest revision of the Strategy, all Non-PRASA systems are included in the Strategy as way to ensure follow-up to any particular situation that may emerge in regard to compliance issues. This approach is in an effort to address and outreach more systems and thus help them, guide them and give follow-up to their process of compliance.

Starting FY 2012 this list is referred to as systems with the most serious or repeated violations or number or the abbreviation of initials of SMSRV for Non-PRASA systems:

Systems with the Most Serious or Repeated Violations (SMSRV)		
Fiscal Year	**Total**	**Non-PRASA**
2012	149	149
2013	174	174
2014	154	153
2015	160	158
2016	141	141
2017	154	146
2018	261	247
2019	265	238
2020	218	205
2021	143	137
2022	188	149
Data revised as of September 2023		

The FY 2013 number of systems SMSRV shows a decrease 22%; and FY 2016, a reduction of 5% in comparison to FY 2012 .

In general, when we compare the number of SNC systems since fiscal year 2000 to FY 2016 we can appreciate there is a reduction of 37% in the SMSRV. The FY 2014 number of SMSRV shows a reduction of 17% in comparison with FY 2009, and FY 2016 in comparison to FY 2014 shows a reduction of 8% in the of SMSRV. For these years here once again the reduction tendency or pattern continues for the number of SNC systems and or of SMSRV. As it can be appreciated this Department efforts will continue been directed towards the increase of the compliance. The strategy demonstrates that the efforts undertaken continue proving an improvement in the compliance pattern and thus the reduction of SNC.

Although from FY 2000 to FY 2016 there is a marked reduction of 37% when we examine FY2000 to FY 2019 it can be appreciated an increase of 7%. As we have indicated previously in general this may respond to the fact that with changes in regulation and with the ETT more systems are covered under it. Added to this, in 2017 the severe conditions encountered with the hit of hurricanes Irma and Maria more systems were unable to enter in compliance. Also, a series of systems that were unknown and in operation but not registered under DOH became registered, thus the number of systems increase. By fiscal year the FY 2017 number of SMSRV shows an increase 3% in comparison with FY 2016. Nevertheless FY 2018 in comparison to FY 2017 shows a marked increase 69% in the number of SMSRV. The FY 2019 number of SMSRV begin to show a decrease of 4% in comparison with FY 2018. If we look into the change by year the FY 2020 number of SMSRV shows a decrease of 13.8% in comparison with FY 2019. Nevertheless FY 2021 in comparison to FY 2020 shows a decrease of 33.1 in the number of SMSRV. The FY 2022 number of SMSRV begin to show an increase of 8.75% in comparison with FY 2021. Again, although the numbers seem to be in contradiction due to the marked increase if we compare the numbers as of FY 2012 to FY 2019, but we cannot disregard that the number of systems registered after the hurricanes increased. Also, the island was under severe devastating conditions for several years. Additionally, now under ETT regulation in effect the number of systems covered based in the regulation has increased. As stated previously we need to emphasize that the extreme conditions under the hurricanes totally hindered the ability of compliance. Thus, we are starting to see a reduction in the number of systems during 2019, therefore, the increase has been slowed down and possibly halted.

Notwithstanding that is minimal the reduction in 2019 again the reduction tendency after the hit of the two hurricanes has taken three years but it has restarted. We must also note that in FY 2022 we had also the hit of hurricane Fiona. We expect that the pattern of reduction progresses or continues for the number of SMSRV. As it can be appreciated this Department will continue directing all its efforts towards the increase of the compliance. The strategy demonstrates that the efforts undertaken continue proving an improvement in the compliance pattern and thus the reduction of SNC.

As discussed earlier, no HSNCs list is required with the change in policy. DOH, in compliance with the new regulation has been reporting under the ETT/ERP. The following table shows Non-PRASA systems with total score equal or greater 11 points for the last two reporting periods. Data from FY 2014 thru FY 2016 can be examined in ***Appendix F.***

ENFORCEMENT TARGETING TOOL (ETT) RULE DATA SYSTEMS WITH SCORES GREATER THAN 11 FROM FY 2017 to FY 2019

NON-PRASA SYSTEMS	Years / Quarters											
	2017				2018				2019			
	Jan	Apr	Jul	Oct	Jan	Apr	Jul†	Oct	Jan	Apr	Jul	Oct*
Private	1	0	0	1	2	2	2	2	2	0	0	0
Communities	112	107	63	73	69	69	6	6	27	26	25	25
Total	**113**	**107**	**63**	**74**	**71**	**71**	**8**	**8**	**29**	**26**	**25**	**25**

* Data available for the quarter of October 2019 was subject to EPA's revision of the data they submitted to DOH, as EPA indicated the data had an error. However, the data for this quarter was revised and included.

† Due to the extreme circumstances resulting from the hurricanes Irma and Maria violations corresponding to the next quarter after the hurricanes were not registered. Also, data entry was not possible due to problems with the software of SDWIS, which has delayed the register of violations corresponding to the following months. We have to point out that extreme conditions resulting from the hurricanes Irma and María impaired the ability to continue the regular tracking needed to work the quarterly ETT list. During the months of September through December 2017 and as an exception, violation were not registered in the SDWIS. Moreover, DOH has encountered software difficulties when entering the data corresponding to the quarter of July and October 2018. This was known to EPA and EPA worked on the access to the SDWIS system to register this information.

ENFORCEMENT TARGETING TOOL (ETT) RULE DATA SYSTEMS WITH SCORES GREATER THAN 11 FROM FY 2020 to FY 2022

NON-PRASA SYSTEMS*	Dates											
	2020				2021				2022			
	Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct
Private	3	5	6	6	6	7	6	8	4	6	7	10
Communities	47	57	59	58	58	40	44	44	31	29	86	87
Total	**50**	**62**	**65**	**64**	**64**	**47**	**50**	**52**	**35**	**35**	**93**	**97**

* Data as of August 2023.

Based on PRDOH annual data, the following table shows the total of bacteriology SNC systems (October 1st to September 30th).

SNC SYSTEMS*		FY 05	FY 06	FY 07	FY 08	FY 09	FY 10
NON-PRASA	MCL BACT	14	16	9	13	13	14
	MR BACT	194	185	162	164	172	173
Total		**208**	**201**	**171**	**177**	**185**	**187**

SNC SYSTEMS*		FY 11	FY 12	FY 13	FY 14	FY 15	FY 16
NON-PRASA	MCL BACT	15	4	13	8	6	7
	MR BACT	143	145	161	145	152	134
Total		**158**	**149**	**174**	**153**	**158**	**141**

* Due to a change in policy since 2012 these systems are Systems with the most serious or repeated violations or SMSRV for its abbreviation by initials.
Data as of June 2017.

Overall, there is a reduction trend not only in the total SNC systems, but also in each individual main parameter for both system owners. The total SNC systems above contain systems repeated as SNC for different parameters. Please note that from FY 2012 the there is a change in policy and the SNC systems changed to be called systems with the most serious or repeated violations or SMSRV for its abbreviation by initials. This total will be discussed later in this section.

For Non-PRASA systems, there was a slight increase **in** MCL Bacti SNC from FY ’05 to FY ’06 (14 to 16). However, a significant reduction of 44% occurred from FY ’06 to FY ’07 (16 to 9). Regarding Bacti MR SNC, a reduction trend is observed through FY ’05 to FY ’07, 194 to 162 for a 16%.

From 2008 to 2010, the Non-PRASA systems behaved as follows. There was an increase of MCL Bacti SNC from FY ’07 to FY ’08 (9 to 13) and this percent represents an increase of 44% or. However, there was no change from FY ’08 to FY ’09 (13 to 13). Regarding Bacti MR SNC, an increase trend is observed through FY ’09 to FY ’10, 172 to 173 for a 0.6%.

From 2011 to 2014, the Non-PRASA systems behaved as follows. There was a small increase of MCL Bacti number of systems with the most serious or repeated violations (before known as SNC systems) FY ’10 to FY ’11 (14 to 15) which represents an increase of 7%. However, for FY 2012, when the change in policy became effective, there was a significant decrease of MCL Bacti number of systems with the most serious or repeated violations (before known as SNC systems) of 73% when compared with FY 2011. A decrease of 46% (13 to 7) is observed in FY 2016 when compared to FY 2013.

*Systems with the most serious repeated violations (SMSRV)		FY 14	FY 15	FY 16	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22
NON-PRASA	MCL BACT	8	6	7	8	0	5	0	0	0
	MR BACT	145	152	134	138	247	233	205	137	149
Total		**531**	**158**	**141**	**146**	**247**	**238**	**205**	**137**	**149**

* Due to a change in policy since 2012 these systems are Systems with the most serious or repeated violations or SMSRV for its abbreviation by initials.
Data revised as of September 2022.

From 2014 to 2016, the Non-PRASA systems behaved as follows. There was a slight decrease of MCL Bacti SNC from FY '13 to FY '14 (13 to 8) or 38% reduction. From FY 2015 to FY 2016 a slight increase from 6 to 7 or 17% increase is observed. From 2016 to 2019, the Non-PRASA systems behaved as follows. There was a reduction of 29% (7 to 5) of MCL Bacti but from FY '16 to FY '17 there was an increase of 14% (7 to 8). From FY 2017 to FY 2018 no increase although we cannot state either that all systems were in compliance. Currently the data related to FY 2018 may need further evaluation/verification because it may be affected by the impact of hurricanes Irma and Maria and there may not be data available *vs.* accounting zero systems which would mean all systems in compliance, and this is not the behavior experienced. From FY 2017 to FY 2019 there was a reduction (8 to 5) of 37% observed. Notwithstanding, from FY 2018 to FY 2019 again the data was uncertain, and we could not conclude at the moment. From FY 2020 to FY 2022 no MCL violations were observed. We cannot disregard that the Non-PRASA surface water systems are in treatment technique violation under EPA enforcement. To deal with Non-PRASA noncompliance situation, PRDOH and EPA continue joint efforts revising and updating the Non-PRASA Strategy.

As stated before, DOH and EPA discussed and agreed its revision as a result of the implementation of both Strategies (Capacity Development and Non-PRASA), because new initiatives were being implemented, and because it was necessary to promote the increase of the number of systems that attain compliance. DOH and EPA have undertaken that revision, which was approved in November 2015.

The revision, approved and signed on November 2015, addresses and/or incorporates new issues and challenges of the Non-PRASA systems. The PRDOH has been developing and implementing several initiatives such as:

- Capacity Development Project
- Operator Certification Project
- Circuit Riders Project
- New partnerships

Taking into consideration total SMSRV systems (PRASA and Non-PRASA) counted or considered once, the following tables show the relationship between systems owner and population distribution.

TOTAL SNC or SMSRV† NOT REPEATED	**FY 11**	**FY 12**	**FY 13**	**FY 14**	**FY 15**	**FY 16**	**FY 17**	**FY 18**	**FY 19**	**FY 20**	**FY 21**	**FY 22**
TOTAL	**159**	**149**	**174**	**154**	**160**	**141**	**154**	**261**	**265**	**218**	**143**	**188**
POP. >10,000 PERSON	1	0	0	1	2	0	8	14	27	13	6	39
POP. ≤10,000 PERSON	158	149	174	153	158	141	146	247	238	205	137	149
* Data revised as of September 2023. † Systems with the most serious or repeated violations after 2012 with the change in policy.												

*Systems with the most serious repeated violations (SMSRV)		FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22
NON-PRASA	MCL BACT	15	4	13	8	6	7	8	0	5	0	0	0
	MR BACT	143	145	161	145	152	134	138	247	233	205	137	149
Total		**158**	**149**	**174**	**153**	**158**	**141**	**146**	**247**	**238**	**205**	**137**	**149**

* Due to a change in policy since 2012 these systems are Systems with the most serious or repeated violations or SMSRV for its abbreviation by initials.
Data revised as of September 2023.

It can be appreciated, the total has been reduced significantly over the years up to the hit of the two hurricanes by the end of fiscal year 2017. Notwithstanding that there may be sudden increases that respond to particular situations again once the situation begins to change the numbers continue the reduction process and thus continue the reduction tendency . We must mention that factors such as the hurricanes are one that marked an increase in the number of SMSRV. Another factor was the registration of existing systems that were operating but not registered at the Department of Health. During the resiliency activities after the hurricanes assistance was provided to the system is when these additional systems were registered. It is important to note that , the majority of SNC systems are still those of $\leq$ 10,000 inhabitants. These systems are those serving the population inland in the Island where conventional systems cannot be constructed due to topography or due to their cost-effectiveness.

TOTAL SNC or SMSRV† NOT REPEATED	Fiscal Years	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22
	TOTAL	**159**	**149**	**174**	**154**	**160**	**141**	**154**	**261**	**265**	**218**	**143**	**188**
POP. >10,000 PERSON	**Non-PRASA**	0	0	0	0	0	0	0	0	0	0	0	0
	PRASA	0	0	0	1	2	0	5	10	18	8	4	21
POP. ≤10,000 PERSON	**Non-PRASA**	158	149	174	153	158	141	146	247	238	205	137	149
	PRASA	1	0	0	0	0	0	3	4	9	8	2	18

† Systems with the most serious or repeated violations after 2012 with the change in policy.
Data revised as of September 2023.

As stated previously, the majority of SMSRV are the Non-PRASA systems although there is a reduction tendency. It is important to notice that there are no Non-PRASA systems with a population equal or greater than 10,000.

The main enforcement tool to address these Non-PRASA systems is the Non-PRASA Strategy, as recently revised. The following table presents the SMSRV addressed under the Strategy up to fiscal year 2016.

In general, the systems' reduction, whether previously called SNC or now, of SMSRV, (all under Strategy since fiscal year 2012 when ETT came in force), is the result of several initiatives, such as:

- Connections to PRASA systems
- Systems consolidation or elimination
- Return to Compliance
- PRDOH Special Projects

The latest revision of the Non-PRASA Strategy now known as Non-PRASA Strategic Plan undertaken in coordination and consultation with EPA and using the ETT considers all community Non-PRASA systems. Thus, from now on all remaining systems, small community systems that were not under the strategy will now be included and, nonetheless, these will continue being addressed also with PRDOH efforts/initiatives, such as grants, and technical assistance and the state enforcement procedure as previously discussed. We cannot disregard that the disruption in the pattern of reduction is the result of the mayor impact of the hurricanes and the delay in the general help/assistances received as well as the lack of funds and the delayed in the total recovery and resiliency.

C. Revised Total Coliform Rule (RTCR)

As previously stated in the Introduction, EPA published the Revised Total Coliform Rule (RTCR) in the Federal Register (FR) on February 13, 2013 (78 FR 10269) and minor corrections on February 26, 2014 (79 FR 10665).

The RTCR is the revision to the 1989 Total Coliform Rule (TCR) and is intended to improve public health protection by protection by reducing fecal pathogen to minimal levels through control of total coliform bacteria, including fecal coliforms and *Escherichia coli* (*E. coli)*. The RTCR applies to all public water systems (PWS) and started on April 1, 2016.

Based on the above-mentioned changes, the systems violations are determined on the RTCR and the ETT. Therefore, graphics and tables presented on previous reports will vary.

Key provisions of the RTCR are:

- Setting a maximum contaminant level goal (MCLG) and maximum contaminant level (MCL) for E. coli for protection against potential fecal contamination.
- Requirements for monitoring total coliforms and E. coli according to a sample sitting plan and schedule specific to the PWS.
- Setting a total coliform treatment technique (TT) requirement. For total coliforms (TC), PWS must conduct a Level 1 or Level 2 assessment of their system when they exceed a specified frequency of total coliform occurrences. Any sanitary defect identified during a Level 1 or Level 2 assessment must be corrected by the PWS. These are the treatment technique requirements of the RTCR.
- Public notification (PN) requirements for violations.
- Specific language for CWSs to include in their Consumer Confidence Reports (CCRs) when they must conduct an assessment or if they incur an E. coli MCL violation.

VI. Compliance and Enforcement Procedure

The compliance and enforcement procedure used by PRDOH is based on EPA Guidelines and the PWSS Program Enforcement Protocol. PRDOH compliance and enforcement procedure continues covering all PRASA and Non-PRASA systems, except surface water systems without treatment which are under EPA's enforcement. These procedures avail the measurement of progress in the improvement of technical, financial and managerial capacity. Thus, as more systems are in compliance, the aspects of capacity attainment should also be moving towards improvement. It cannot be disregarded that new and more stringent standards in force may cause a back slide in compliance. For instance, the implementation of the new regulation: Stage 2-Disinfectant / Disinfection By-products Rule 2, where the compliance determination changes from the Running Annual Average (RAA) by system to the Locational Running Annual Average (LRAA) has caused an increase in number of systems out of compliance (systems with score equal or above 11). Also, the Revised Total Coliform Rule (RTCR), requires the states to perform a series of field assessments, depending on the type of violation. This increases the workload and efforts towards the system's compliance. See section C - Disinfection By-Products (DBP's).

The historical SNC identification and enforcement was done based on a rule compliance determination and summarized on an annual basis for comparison and trends purposes. That is, for each separate and/or individual year a list of SNC was examined to account changes annually by main group of parameters: Bacteriology, Turbidity and Disinfection Byproducts. As stated earlier, there has been a change and, since fiscal year 2012, compliance is evaluated and measured through the Enforcement Targeting Tool (ETT) approach. This replaces the existing contaminant by contaminant compliance strategy, with one that focuses on the drinking water systems with the most serious or repeated violations. It uses a targeting tool/formula as a model for escalating responses to violations in a timely and appropriate response. Now, all systems are covered under the Strategy and, thus, under the compliance determination process.

With the ETT the systems with the most significant violations come to the top of the list for enforcement actions in states. The PWS are prioritized by assigning each violation a "weight" or number of points based on the assigned threat to public health. Points for each violation of a water system are added to provide a total score for that public water system (PWS). A PWS with a score of 11 points or greater is considered as in significant Noncompliance with the National Primary Drinking Water Regulations (NPDWR). This system will require enforcement actions. This is a tool to determine steps to help the systems return to compliance. Priority is awarded to systems with higher population. Under this new approach, the states <u>will not</u> be required to submit a list of HSNCs every three years.

However, a narrative and graphs, by main contaminant group, is presented in this report for comparative purpose and in order to show trends and achievements.

A. Bacteriology

Regarding the bacteriologic parameter, the following table presents PRASA SNC systems or of SMSRV (since fiscal year 2012) in accordance to the type of violation-MCL (Maximum Contaminant Level) and**/**or M/R (Monitoring/Reporting) per federal fiscal year. Bacteriology SNC or of SMSRV (since fiscal year 2012) was defined as a system with four or more violations during a twelve-month period.

PRASA SMSRV† BACTI												
Type	**FY 11**	**FY 12**	**FY 13**	**FY 14**	**FY 15**	**FY 16**	**FY 17**	**FY 18**	**FY 19**	**FY 20**	**FY 21**	**FY 22**
SNC-MCL	1	0	0	0	2	0	5	8	12	11	4	8
SNC-MR	0	0	0	1	0	0	3	6	15	2	2	31
Total	**1**	**0**	**0**	**1**	**2**	**0**	**8**	**14**	**27**	**13**	**6**	**39**

† Systems with the most serious or repeated violations (since fiscal year 2012).
Data revised as of September 2023.

Since 1997, PRDOH had been increasing the bacteriology compliance monitoring in the unfiltered systems through a State Administrative Order[20]. There was a significant reduction (100%) due to the gradual elimination of unfiltered systems.

As it can be appreciated in the table above for FY 2012 and 2013 we achieved again a reduction of one hundred per cent (100%) for PRASA MCL and MR-SNC systems. A great achievement is that no SNC system has been identified as Bacti SNC or SMSRV for these two years and also these can be appreciated in FY 2016. For this reporting period we can appreciate that the MCL sand MR Bacti SNC or SMSRV for FY 2017 are increasing. We understand that this increase responds to the hit of the two hurricanes at the end of FY 2017. We must also emphasize that the island had serious delays in receiving assistance and in the complete recovery, particularly that related to energy power, which impaired the activities related to the sampling and evaluation of results. During this reporting period, although the MCL had a marked reduction, the MR showed a significant increase possibly due to the above-mentioned reasons.

Regarding Non-PRASA Bacteriology compliance, the following table and graph presents the MCL and MR SNC systems or of SMSRV (since fiscal year 2012) per federal fiscal year.

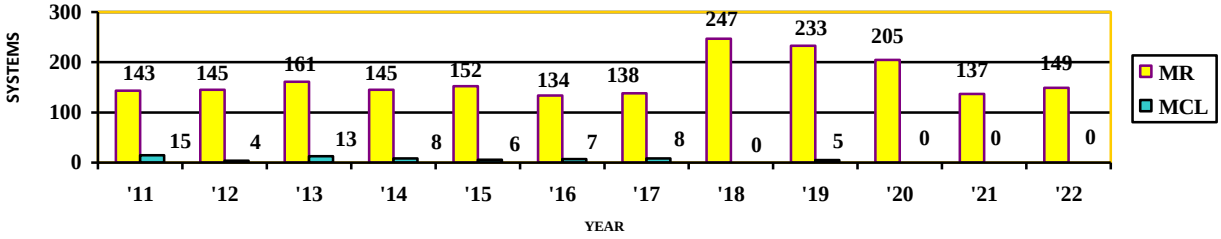
NON-PRASA SYSTEMS IN NON-COMPLIANCE ACCORDING TO THE RTCR*												
	FY 11	**FY 12**	**FY 13**	**FY 14**	**FY 15**	**FY 16**	**FY 17**	**FY 18**	**FY 19**	**FY 20**	**FY 21**	**FY 22**
MCL BACT	15	4	13	8	6	7	8	0	5	0	0	0
MR BACT	143	145	161	145	152	134	138	247	233	205	137	149
Total	**158**	**149**	**174**	**153**	**158**	**141**	**146**	**247**	**238**	**210**	**137**	**149**

* Due to a change in policy since 2012 these systems are Systems with the most serious or repeated violations or SMSRV for its abbreviation by initials. Data revised as of September 2023.

The following graph presents a significant reduction in both types of SNC systems or SMSRV (since fiscal year 2011):

[20] Prior reports include this information.

NON-PRASA BACTERIOLOGY SNC SYSTEMS OR SMSRV FROM FY 2011 TO FY 2022



During FY 11 there is only an increase of 1 for MCL, while for MR there was an increase of 2. As it can be appreciated for FY13 there is a significant reduction in violations for MR although MCL there is slight from FY 2005 (MR-194 to 164 and MCL-14 to 13). Although during FY12, compared to FY 2011, there was a significant drop to 4 in the MCL, for MR an increase of 2 was observed, notwithstanding the change in policy of ERP/ETT.

We have to point out that for FY13 both MCL and MR increased from 4 to 13 and from 145 to 161, respectively, probably due to the change in policy where more systems are covered. However, during FY14 a significant reduction is achieved compared to FY'13, and where the MCL was reduced to 8 and the MR was reduced to 145. We can appreciate from FY 15 to FY16 a small increase in MCL from 6 to 7 while the MR reduced significantly from 152 to 134. Once more, there is still a reduction tendency in some case more significant or marked.

We can also appreciate that from FY16 to FY17 there is an increase in the number of systems with MR violations of 4 (134 to 138) and there is an increase in the number of systems with MCL violation of 1 (7 to 8). From FY17 to FY18 there is a marked increase in the MR of 109 (138 to 247) but there is a reduction in MCL of 8 (8 to 0). From FY18 to FY19 a reduction is noted of 14 in the MR (247 to 233) and an increase of 5 in the MCL (0 to 5). Previously we indicated that this dramatic increase is caused primarily to the impact of the hurricanes at the end of FY 2017. But also, it is important to indicate that there was a previous delay in the recovery actions and assistance to the island. We cannot either disregard that there were certain differences with EPA regarding the data due to technical problems. In addition, the sampling process was also waived to certain extent.

From FY20 to FY21 a reduction is noted of 68 in the MR (205 to 137) and a decrease to 0 in the MCL when compared to the end of the previous reporting period. However, from FY21 to FY22 an increase of 12 in the MR (137 to 149) is noted. We must recall that we experienced hurricane Fiona in 2022

Regarding the compliance bacteriology sampling, the following table shows the number of monthly samples taken by Non–PRASA systems since FY 2011. Although for FY 2010 it shows a small reduction (52) when compared to FY 2009, an increase is achieved during FY 2011. Fiscal years 2012 and 2013 show a decrease when compared to FY 2011, but when compared to FY 2005 numbers the increased trend is maintained. During the FYs 2014 reporting period although we

observed a decrease in FY 14 and FY15 compared to FY13, at the end of the period there was an increase. This increase responds only to the change of policy of FY 2012, but also to the fact that with the revision of the Non-PRASA Strategy as approved by EPA, all systems are included in the Strategy, therefore, the number of systems increased. It must be noted that in the previous reporting period (FY2017 to FY2019) there is a decrease in the number of samples taken if FY 18 as a result of the strike of the hurricanes and the difficulties in accessing the systems. In FY 19 the condition was more stable, and the number of samples taken increased. During this reporting period the number of samples taken continued increasing.

NON-PRASA COMMUNITY BACTI COMPLIANCE SAMPLES												
Fiscal Year	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
Samples Taken	1,412	1,279	1,245	1,353	1,343	1,454	1,327	382	848	922	1355	1502

Notwithstanding the non-compliance situation through the past years, different initiatives and the Non–PRASA Strategy revision and continuous implementation are responsible for improvements in the monitoring and, therefore, the MCL/MR SNC/SMSRV reduction trend. The following are the main successful initiatives:

- Educational and technical assistance
- PRASA infrastructure projects that consolidate or connect non-PRASA systems
- Non-PRASA systems consolidation
- PRASA Supplemental Environmental Project (SEP) for monitoring at Non-PRASA systems

DOH continues undertaking the quarterly surveillance bacteriology monitoring in Non-PRASA and continues with the “boil water” orders in those systems that evidence presence of bacteriology positive samples, as a public health intervention tool. Also, a New Pilot project is being undertaken to increase the surveillance monitoring in the systems. Notwithstanding, the Non-PRASA systems are the ultimate responsible for the compliance bacteriology monitoring.

B. Turbidity

All systems using surface water or ground water under the direct influence of surface water have to comply with the filtration technique requirement achieving the turbidity standard established in the regulation. The following table and graph show the number and percent of surface water systems that meet this requirement, by federal fiscal year.

SURFACE SYSTEMS WITH FILTRATION								
	PRASA	**Non-PRASA**		**PRASA**	**Non-PRASA**		**PRASA**	**Non-PRASA**
	FY 2005			**FY 2006**			**FY 2007**	
Surface Systems	120	122		119	119		117	121
Systems with filtration	114	8		114	8		112	10
% Filtration	**94%**	**6%**		**96%**	**7%**		**96%**	**8%**
	2008			**2009**			**2010**	
Surface Systems	115	117		113	116		111	114
Systems with filtration	112	22		111	23		111	22

SURFACE SYSTEMS WITH FILTRATION						
	PRASA	Non-PRASA	PRASA	Non-PRASA	PRASA	Non-PRASA
% Filtration	**97%**	**18%**	**98%**	**20%**	**100%**	**19%**
	2011		**2012**		**2013**	
Surface Systems	109	115	108	114	107	113
Systems with filtration	109	21	108	21	107	21
% Filtration	**100%**	**18%**	**100%**	**18%**	**100%**	**19%**
	2014		**2015**		**2016**	
Surface Systems	106	114	106	116	104	114
Systems with filtration	106	29	106	28	104	27
% Filtration	**100%**	**25%**	**100%**	**24%**	**100%**	**24%**
	2017		**2018**		**2019**	
Surface Systems	102	113	102	123	104	112
Systems with filtration	102	15	102	15	104	15
% Filtration	**100%**	**13%**	**100%**	**12%**	**100%**	**13%**
	2020		**2021**		**2022**	
Surface Systems	105	108	101	107	111	105
Systems with filtration	105	29	101	28	111	27
% Filtration	**100%**	**27%**	**100%**	**26%**	**100%**	**26%**

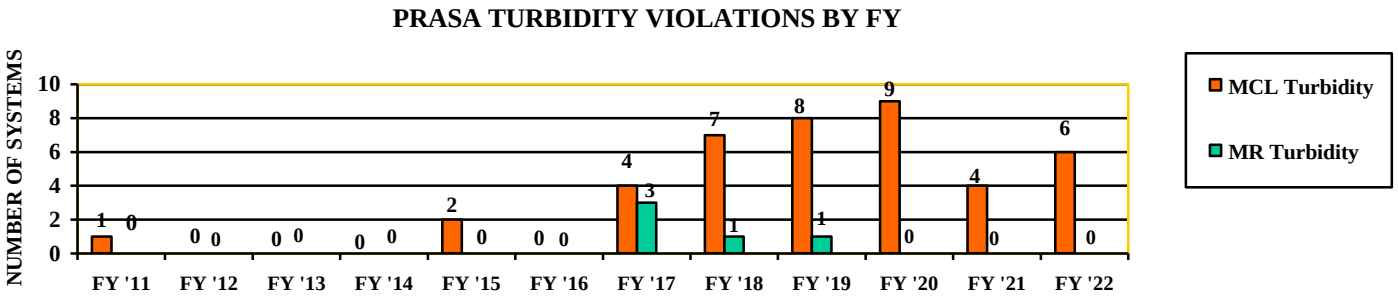
Please observe that by FY 2007, 96% of surface water PRASA systems are in compliance with the filtration technique installation. By 1993, when Surface Water Rule became effective, PRASA had 44 surface water systems that had not met this requirement. During FY 2008, only three (3) surface water systems remain out of compliance. These systems were under federal enforcement with stipulated penalties. For FY 2009 only two (2) surface water systems remain out of compliance. However, from FY 2010 to FY 2011, all PRASA systems were in compliance with the filtration technique installation. During the previous reporting period, PRASA systems maintained their 100% compliance with the filtration technique installation.

As for the Non-PRASA systems, during FY 2009 only 20% of the systems were in compliance with the filtration technique installation. From FY 2010 to FY 2012 we can observe in the Non-PRASA systems a slight decrease trend in that percent of compliance with the filtration technique installation. At the beginning of the FY13 reporting period, there was a slight increase (18 to 19 or 1%) of Non-PRASA systems having filtration when compared to FY 2012. For the reporting period ending FY 2016, the percent of Non-PRASA systems having filtration increased by 5%. For the previous reporting period (FY 2017 to FY 2019) it can be observed that approximately a 13% of the systems are in compliance with the filtration technique. This decrease may respond to damages caused in the small drinking water systems during the strike of the Hurricanes Irma and María that may still be under resiliency pending actions. From fiscal year 2020 to 2022 the Non-PRASA systems having filtration, this per cent increased to approximately 26%.

It is important to know that the Non-PRASA surface water systems without filtration are under federal enforcement. These Non-PRASA systems are addressed by Federal Administrative Order with or without penalties and/or by other EPA/DOH initiatives discussed previously in this report. The filtration acquisition, installation, operation, monitoring and report rule requirements, in addition to preventive and continuous maintenance, requires that the systems has the administrative,

technical and financial capacity to afford it. It is well known that Non-PRASA systems lack these three important capacity development elements.

Regarding PRASA systems at the beginning of this reporting period, to achieve compliance with turbidity requirements in 105 surface water systems, there are 113 filtration plants: 105 conventional; 6 conventional /membranes; 1 membrane and 1 direct. The following graph describes the number of PRASA turbidity SNC systems per federal fiscal year.



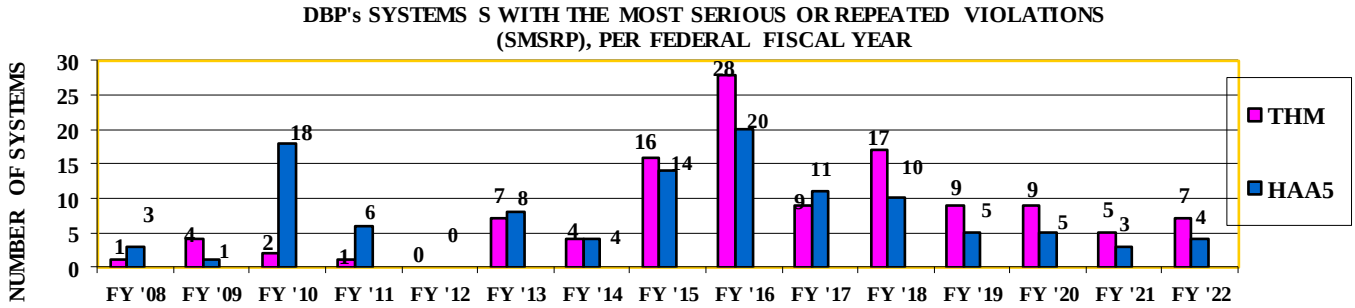
As the graph shows, 100% compliance was achieved and maintained during FY 12, 13, and 14. For the subsequent three years, the compliance was as follows: FY 14 100%, FY 15 96%, and FY 16 100%. During the last reporting period we can observe that in general compliance has been achieved and maintained.

During **the** reporting period ending in FY 2016 we can observe that in general the turbidity compliance was also maintained. Nevertheless, in FY 17 with the strike of the two hurricanes and the total disaster happening in the island we begin to appreciate that all the systems were affected by the two cyclones and the compliance was impaired. The percent of systems in compliance decreased as follows: In FY 2017 the MCL turbidity percent decreased to 96, thus 4% of the systems were out of compliance if compared to FY 2016; in FY 18, there was another decrease and only 93% of the systems were able to comply. In FY 2019 once more the compliance ability decreased and only 92% of the systems were able to comply. As we have stated, the devastation of the island was total and the recovery process extremely slow. In terms of electric power, it took up to a year to recover the electricity in some areas. As of today, the electric power infrastructure is too fragile, and it continues with severe interruptions causing serious disruption of the day-to-day activities. That is why the ability to return to compliance continues been impaired and its pace is slow. In the last reporting year, the MCL compliance percent changed from 100% to 92% but when we analyze the devastation that occurred with the hit of the hurricanes Irma and María this decrease in compliance cannot be considered a dramatic one moreover when even in FY19 there were ongoing resiliency activities. For the reporting period ending FY 2022 we can observe that only a few systems were in non-compliance, although we also had a hurricane, Fiona, in 2022 there was a slight increase possibly due to this.

C. Disinfection By-Products (DBP's)

In this section, PRASA's systems Total Trihalomethanes (TTHM) and Haloacetics Acids (HAA5) compliance is discussed. The following table and graph show the number of DBP's of SNCs or SMSRV by federal fiscal year.

SMSRV by Disinfection By-Products(DBP's)			
Fiscal Year	**THM**	**HAA5**	**Total**
2008	1	3	**4**
2009	4	1	**5**
2010	2	18	**20**
2011	1	6	**7**
2012	0	0	**0**
2013	7	8	**15**
2014	4	4	**8**
2015	16	14	**30**
2016	28	20	**48**
2017	9	11	**20**
2018	17	10	**37**
2019	9	5	**14**
2020	9	5	**14**
2021	5	3	**8**
2022	7	4	**11**



Historically, all systems violations have received an appropriate enforcement action in the time required by law. First, they were addressed by a State Administrative Order and then they were included in the Amended Transactional Agreement. To achieve and maintain compliance with TTHM and or HAA5 maximum contaminant level, the Amended Transactional Agreement included corrective or remedy actions that go through raw water characterization, evaluation and adjustment of coagulant/disinfectant, evaluation of point of disinfectant application, standard operational procedures for flushing, unit process and water storage tanks cleaning, among others. The above graph indicates that by June 2008, there are 4 DBP's SNC systems. This represents a reduction of 36% compared to September 2007 (FY '07). We expect that as a result of the implementation of the above measures, this reduction tendency will continue, and a significant reduction will be observed in a short time period.

By June 2009, there are 5 DBP's SNC systems. By June 2010, there are 20 DBP's SNC systems. It can be appreciated that from FY 2007 to 2008 there is a reduction in the DBP's SNC systems. Also, in FY 2009 there is still a reduction when compared to FY 2005, notwithstanding there is a slight increase from 2008 to 2009. Concerning FY 2010, there is a marked increase in the total DBP's SNC systems. Nonetheless, when the THM are compared to FY 2007, there is still a reduction although the HAA5 have increased noticeably. This increase will be addressed also in the Transactional Agreement.

Regarding the TTHM for the fiscal years 2011 through 2012, although there is a reduction from FY 2011 to FY 2012, a significant increase is observed for FY 2013. On the other hand, for the HAA5, for FY 2011 there is a significant reduction of 6 DBP'S SNC compared to SNC in FY 2012, now referred to as systems with the most serious or repeated violations or SMSRV for its abbreviation by initials, while for FY 2013 a significant increase to 8 DBP'S SMSRV is observed. This increase is due to the implementation of the new regulation: disinfectant / disinfection by-products Stage 2 and the compliance determination changes from the Running Annual Average by System to a Locational Running Annual Average.

To improve the control of microbial pathogens while minimizing public health risks of disinfectants and disinfection by-products, EPA finalized Stage 2 DBP Rule on January 2006. The rule required an initial distribution system evaluation from 2006 to 2010 in order to identify compliance monitoring evaluations that represent high DBP concentrations throughout the distribution system. By April 2012 and for > 100,000 population served, a locational running annual average (LRAA) is used to determine compliance with the Stage 2 DBPR maximum contaminant levels for THM and HAA5. Four (4) full quarters under this new rule is required for compliance determination.

By FY 2013, four (4) systems were registered with the most serious or repeated violations or SMSRV for THM/HAA5 under Stage 1 DBP Rule and eleven (11) systems were registered with the most serious or repeated violations or SMSRV under Stage 2 DBP. All systems are addressed under the Amended Transaction Agreement. DOH required a corrective action plan in attention to each monitoring locations that exceeded the MCL's. Also, an Amended Transaction Agreement requires interim mitigation measures for DBP's violations, by systems, until the violation persists, and the corrective plan is completed.

Starting fiscal year 2013, all systems with the most serious or repeated violations for THM/HAA5 under Stage 1 DBP Rule were registered under Stage 2 DBP. All systems continued being addressed under the Amended Transaction Agreement.

During FY 2014 for the HAA5, there is a reduction of 3 DBP'S in the number of SMSRV compared to FY 2013, while during FY 2015 there is a significant increase of 9 DBP'S. This increase trend continues at the end of the period (FY2016) where is a significant increase of 20 DBP's is appreciated.

On the other hand, for the HAA5, for the period corresponding to fiscal years 2014 through 2016, the following can be appreciated: there is a reduction of DBP'S in the number of SMSRV in FY 14 compared to FY 2013. However, this reduction trend changes in FY 2015 when a marked increase of 10 DBP'S in the number of SMSRV is observed, that is maintained during 2016, when a significant increase of 15 DBP'S SMSRV is observed when compared to FY 2014.

Regarding the HAA5, for the period corresponding to fiscal years 2016 through 2019, the following can be appreciated: there is a reduction of DBP'S in the number of SMSRV in FY 17 compared to FY 2016. However, this reduction trend changes in FY 2018 when a marked increase of 7 DBP'S (THM increased although the HAA5 decreased) in the number of SMSRV is observed and we dare to say as a result of the impact of the two hurricanes. Nevertheless, once again in 2019 we start to appreciate a reduction trend that when compared to FY 17, 16 and 15 is significant in comparison to the last reporting period. At the end of the HAA5, reporting period ending FY 2022 it can be appreciated that the reduction trend continued for not only the THM but also for the HAA5. Nevertheless, we recognize that in FY2022 there is an increase that may respond to the fact that the conditions in the island due to the hit of hurricane Fiona were difficult ones for the systems and their compliance.

VII. Public Participation

The availability of this document has been announced in a newspaper of major circulation. In addition, its availability has been published in DOH website: www.salud@gov.pr.

VIII. Conclusion

Twenty-three years ago, the Puerto Rico Department of Health prepared and submitted to the Environmental Protection Agency for approval the Capacity Development Strategy (CDS). This Strategy was established in Puerto Rico with the purpose of assisting public water systems whether PRASA or Non-PRASA in their process of attaining and maintaining capacity. It has been tested that systems lacking any of the capacities: technical, financial or managerial, sooner or later will become systems failing in their compliance process with the SDWA. To date, the efforts delineated by DOH through the CDS Strategy which embraces the *Enforcement and Compliance Strategy for Small Community Water Supply Systems (Non-PRASA Strategy) and the PRASA Strategy* has been an efficient tool for managing systems that have limitations in capacity. The approaches that foster and encourage compliance with the SDWA with the intention of minimizing and reducing the increases in systems out of compliance, whether these are or not SNC, now and since 2012 systems with the most serious repeated violations (SMSRV), have been modified and to certain extent adapted, tested, examined, reevaluated and restructured to attend systems on specific areas on a case-by-case need.

Through the Strategy the Department of Health outreaches all public water systems are outreached for assistance annually in their compliance process. Lack of funds continues limiting the number of systems become participant of an assistance project which are used this Department to continue looking forward for the implementation of initiatives that will cover and address more systems in a cost-effective way. Lack of funds and the general economic situation, especially Puerto Rico's financial constraints is among others the main or principal reason that hinders compliance with new regulations that become in force. Also, during the last six years the impact of the three hurricanes have impaired financially the availability of funds to further assistance because funds available are being redirected and used for resiliency activities and notwithstanding the assistance provided by the federal government, compliance with the requirements cannot be disregarded. Federal funds, although available, its use has moved in a very slow pace.

Notwithstanding the transition from the evaluation of systems through the traditional HSNC to the new EPA ETT enforcement approach as measurements of water quality and enforcement prioritization the Strategy as of today continues managing consistently the compliance of the systems having a reduction trend. Increases of systems in non-compliance can be appreciated when a new rule or regulation is in force. Also, we recognize that after the hit of the ~~two~~ three hurricanes there was an increase of the number of systems in non-compliance, but this is an out of hand situation due to a major devastating disaster where the recovery experience form these in other states has taken more than a decade. Notwithstanding there is a great possibility of recovery process, on an annual base we continue under serious environmental threats, such as the hurricanes and earthquakes and particularly the financial ones that delay the progress and the process towards compliance.

In the past, the Strategy was able to manage systems assistance provided taking into consideration not only each individual main parameter for both PRASA and Non-PRASA "historical significant noncompliance" and "significant noncompliance" systems, but also now with the new approach that focuses on drinking water systems with the most serious or repeated violations **or** SMSRV

where each violation is assigned a "weight" or number of points based on the assigned threat to public health with a model for escalating responses to violations in a timely and appropriate response.

Setbacks as previously stated due to major events continue been challenging. As we stated before, it cannot be disregarded the fact that there may be specific situations that may cause fluctuations where there may appear an increase in the number of systems presenting a non-compliance behavior. There is always an explanation to the non-compliance behavior. The explanations include more stringent regulations, new regulations in force, and major environmental devastating events or disasters. Being Puerto Rico a small tropical island with limited source water resources there are other factors that cannot be controlled, as we have detailed, such as environmental factor and changes in weather patterns that affect the operation of systems and thus the treatment and compliance process and the completed daily activities of the society. One example of this is the meteorological drought that Puerto Rico experienced in fiscal year 2014. This is one of the marked results of the global warming. Additional changes in weather have brought sudden rainfall experiencing many inches of rain in short periods of time. Also, the Hurricane season that lasts approximately six months where weather patterns are in constant change and extreme patterns alter the daily lives as well as the compliance of the systems. This also has affected seriously the electric power supply causing serious interruptions. In cases the lack of electricity lasts for days and weeks that again alter the daily living and the compliance of the systems.

Currently, the most recent climate change is the extreme heat wave that has altered the rainfall patterns causing also severe drought. The extreme heat wave has altered also the daily lives where the population has to take precautions for their daily activities/work particularly in schools where these have not recovered from the earthquakes nor the hurricanes. This also alters the use of water by the population and thus the production of water by the drinking water systems. Notwithstanding these specific situations the Strategy has provided for more than two decades the means to control, guide and assist the systems in their process of compliance with the SDWA and has also provided the means to attain or maintain Capacity.

The Strategy continues been a living document, that in order to be able to attend and cope with the upcoming changes has required minor adjustments/changes in order to evolve and attend the ongoing needs required for compliance. As stated previously, the CDS manages PRASA and Non-PRASA systems in what we call Non-PRASA Strategy and the PRASA Strategy.

Currently, the Non-PRASA Strategy, which is embraced in the CDS, was revised and became the new Non-PRASA Strategic Plan. What we used to call "the PRASA Strategy" changed several years ago and was consolidated into the "Transaction Agreement between the Department of Health and PRASA". The "Transaction Agreement" includes projects that had long term remedy/corrective actions, which currently their deadlines are being renegotiated due to the financial circumstances of the island and all of the government corporations, the hit of the hurricanes and PROMESA**.**

The Strategy is open to accept the challenge of considering any new approach, vision or initiative that can improve or accelerate the assistance process or methodology to be employed with the systems in an effort to further and maintain compliance with the SDWA. During FY 2022 the Capacity Development Strategy was revised to incorporate asset management plans by the systems. The promotion for the use of asset management plans is a tool now available for the systems to prepare and use them. This will avail their process of compliance and their improvement. The strategy is open to any revision that will promote systems assistance and compliance.

It is DOH's responsibility to continue providing assistance to systems in order to help them achieve and maintain technical, managerial, and financial capacity, notwithstanding its role as a Primacy Agency and an enforcement role but also as the lead agency and Administrators of the DWSRF Program. This Department will continue searching new approaches and testing initiatives economically feasible that in coordination with the compliance and enforcement mechanism can increase the number of systems outreached. Notwithstanding the financial constraints and general economic distress, we continue optimizing the available technical, financial, and managerial resources through organized systematic procedures of assistance to the systems and we continue receptive to test, coordinate, delineate and implement any other reasonable ways or alternatives. We have done so with the implementation of pilot projects that are reasonable, cost effective and replicable and these have been successful.

We have to reaffirm the fact that the most significant aspect that needs to be addressed is that more financial resources must or need to be identified in order to expand the scope or coverage of the Capacity Strategy and increase per year the number of systems that could be placed in compliance. In this way we can also continue reducing the number of systems in non-compliance or any system whose capacity for compliance is questionable.

Through the implementation of the Capacity Strategy, we have been able to design or adapt a methodology to measure the three aspects of capacity in the small systems and we have also been able to follow up how this Capacity has changed. This continues to help us in directing our efforts towards assessing and assisting the system in that particular aspect of capacity and thus achieve the desired level that will attain and maintain the required one. Because there are new regulations that enter in force there is always the possibility, that systems may encounter difficulties in the process of compliance but with the strategy being a living document is able to manage a series of considerations and procedures to deal with this situation. The Strategy encompasses initiatives where experiences and efforts are shared by the systems, such as the Circuit Riders, that continue proving to be a mechanism that consistently provides assistance and the sharing of experiences together with the design of new pilot projects.

IX. ATTACHMENTS

Attachment I

Compliance with the requirements of Section 1420 of the SDWA

Section 1420(a) of the SDWA, which request the states to "obtain the legal authority or other means to ensure that all new community water systems and new non-transient non-community water systems commencing operation after October 1, 1999 demonstrate technical, managerial and financial capacity with respect to each National Primary Drinking Water Regulation in effect, or likely to be in effect, on the date of commencement of operations".

1420(b)(1), which requires the periodic preparation of a list of systems with a history of significant noncompliance (historical SNC list).

1420(b)(2), where the states are requested to report to the Administrator on the success of enforcement mechanisms and initial capacity development efforts in assisting the public water systems listed to improve technical, managerial, and financial capacity

1420(c), which requires the state to "develop and implement a strategy to assist public water systems in acquiring and maintaining technical, managerial and financial capacity".

1420(c), which requires the submittal to the Administrator of a list and a report of Systems in Significant Non-Compliance (SNC) for community and non-transient non-community water systems with a history of significant non-compliance with this title of the law.

Commonwealth of Puerto Rico
Department of Health
Drinking Water Division

Technical Assistance Support (TAS)

February 2005

ESTABLISHMENT OF THE TECHNICAL ASSISTANCE SUPPORT (TAS)

We have to state that we have been implementing the TAS. During this year for approximately fifty (50) systems that were previously considered within a pilot project, oversight was undertaken as a follow-up of previous action plans and or capacity determinations in order to continue availing their process of compliance and capacity attainment. Concurrent assistance in the area of capacity, as well as operator certification was provided, notwithstanding the technical assistance provided in the area of compliance and the use of Circuit Riders as a tool for assistance. We are also working the area of small systems security. We were also able to award a contract based on a proposal previously evaluated by our staff. DOH expects to continue exertions to outreach the greatest number of systems possible with the limited funds available.

The TAS establishes the following priorities:

A. Capacity Development Program and Associated Activities:

The Capacity Development Program established as a priority enabling several projects directly associate to capacity development to be on-going, initiated or being in the development process:

1. ***Capacity Development Project.*** With this pilot project in place, the use of the capacity development manual developed by DOH for this purpose will be implemented and validated. This manual is a tool that will assist and guide the systems in understanding and attaining capacity. During this year, the Capacity Development Manual was up-dated. A Comprehensive Performance Evaluation (CPE) designed for small systems by profiling the system will be implemented. It will also use circuit rider**s'** approach to provide technical assistance for compliance with the SDWA. Also, systems will be profile**d** before and after the use of the manual to measure capacity progress. This project was completed. With new projects the use of the manual is implemented and updated/revised as necessary. A two years contract was executed effective January 2013 with RCAP Solutions for undertaking the development of a Circuit Riders project. Forty-eight (48) systems will be evaluated in terms of their capacities, where the technical, financial and administrative capacities will be measured. In addition, Sanitary Surveys will be undertaken to these systems as part of the process of attaining compliance with the SDWA. Up to date, all forty-eight Sanitary Surveys were undertaken.

2. ***Operator Certification Project.*** With this project the systems are being assisted in the process of complying with the federal and state laws concerning the certification of operators. Approximately 900 persons were trained in their own system thus technical assistance was undertaken simultaneously because operational adjustments happened as part of the training and approximately 300 operators were expected to be certified. In addition, train the trainer session were undertaken to assure continuity of the certification process. (Completed and licenses were issued). A new contract was executed to assist operators in achieving the experience necessary to receive the license. (Completed during last year and licenses are in the process of issuance). A grant extension was requested to EPA in order to complete the use of the funds. This was granted by EPA until December 2012. In order to continue the operators' training and thus comply with the Operator Certification Program an existing contract was amended with the due date of December 2012 for twenty-five (25) systems. As part of the technical assistance

provided to the small Non PRASA systems an assistance plan was developed in order to provide training to the operators of twenty-eight (28) systems for a period of twenty-four (24) months. To this effect, a contract was executed with RCAP Solutions.

3. ***Small Systems Security Project.*** The project is expected to incorporate into small systems, major security concepts considered in the security program in order to provide these systems with the necessary tools for the protection of their water system. In this project systems received the technical assistance to develop: Vulnerability Assessment targeted towards small systems and an Emergency Response Plan. (Completed) Contract time extension amendment to existing contract was granted. A new contract was executed to cover additional 25 systems. All activities were completed under grant and contract.

4. ***Small Systems Source Protection Initiative.*** The initiative will ensure that systems understand their role in the public health protection by protecting their source and making available funding programs to that effect based on the knowledge of the health risk associated to the contamination of their source. This initiative is in accordance to the Commonwealth's Source Water Assessment Program (SWAP) established as approved by EPA where the goal of the SWAP program is to provide meaningful information to direct ongoing source water protection efforts and the overall drinking water program in Puerto Rico. Efforts to identify potential sources of pollution will focus on assembling useful information that will address the greatest threats to drinking water, guide future source protection efforts, and direct the DOH public water system supervision program. The SWAP will provide the information needed to develop programs within the multiple barrier concepts. The major results of the program will direct where and how intensified, site-specific source water protection will be needed. (Completed) DOH continues to use the existing database to assist systems in the application of the adapted CPE to determine capacity. **(ongoing)**

B. ***Area – Wide Optimization Program Activities:*** - Develop an Area Wide Optimization Program (AWOP) to identify performance problems and prioritize SRF resources and activities to improve performance at defined small water systems. *(Initiated)*

1) ***Optimization Programs.*** They will provide for the effective and efficient use of the federal and state's limited resources while assistance is provided to the systems and operational adjustments are undertaken to improve performance and compliance*. (On going)*

2) ***Small Systems CPE.*** The Comprehensive Performance Evaluation (CPE) has been adapted to small systems as a procedure to evaluate their performance, unit treatment process and factors limiting performance. *(on-going implementation)* A new contract **is planned** to be executed with RCAP to undertake the small systems adapted CPE in combination with the sanitary survey evaluations for 48 systems.

3) ***Priority List.*** Systems will be prioritized by the use of a priority list in order to attend the systems based on the needs and health-based violations. (Is under development with the revision of the Non-PRASA Strategy using as target systems with the greatest population.)

C. ***Circuit Riders Program Activities:***

1. ***Technical Assistance.*** DOH has offered technical assistance to systems through the Public Water Supply Supervision Program (PWSS) of the Department of Health Drinking Water program. The DWSRF Program since its establishment has provided support to the PWSS. Several state environmental projects with EPA have been undertaken. Assistance is provided in the areas of operation, maintenance and compliance process. Also, advice is offered on the enhancement and need to rehabilitate infrastructure to attain compliance. (On-going)

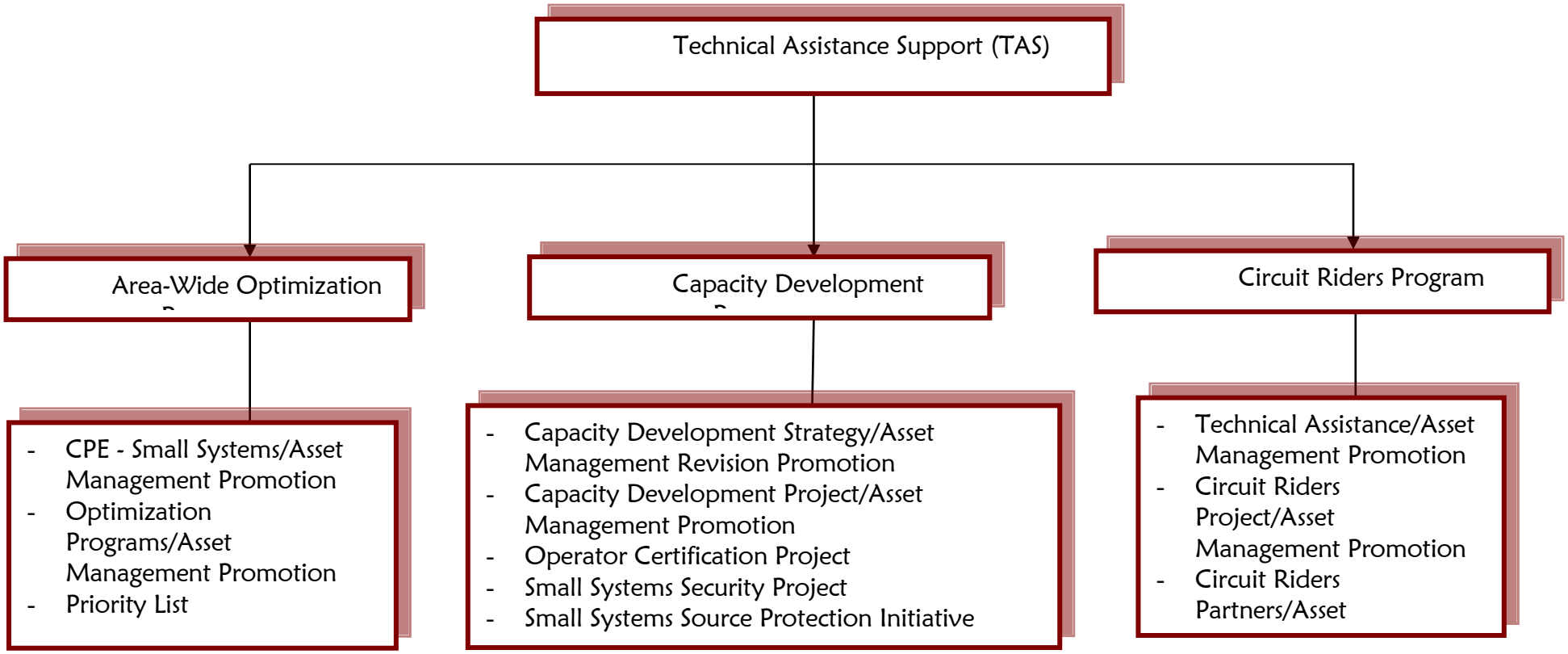
2. ***Circuit Riders Project.*** With the project assistance will be provided to more communities in order to develop the Capacity and AWOP programs. (Completed to 53 systems; on going for 48 new systems)

3. ***Circuit Riders Partners.*** This initiative intends to broaden and increase: the number of human resources that provide direct assistance to the small systems, the training skills in order to lead and target the efforts towards small systems to ensure that these systems have the tools needed to comply with the drinking water regulations. The drinking water program has coordinated government efforts to assist these systems and has participated with other agencies, including EPA, as well as private entities, which have participated in partnership to assist them technically and economically on this regard. (New partner identified)

Commonwealth of Puerto Rico
Department of Health
Drinking Water Division
Drinking Water State Revolving Fund

Commonwealth of Puerto Rico
Department of Health

Technical Assistance Support (TAS)



February
2005 / Rev. October

Attachment II-a

TECHNICAL ASSISTANCE SUPPORT (TAS) ACTIVITIES/PRIORITIES UNDERTAKEN

We must indicate that notwithstanding that the set-asides for Capacity Development was not established and as of today we have been now for three years under a federal cut-off electronic funds transfers we continue implementing the TAS. For several years we used to provide concurrent assistance in the area of capacity, as well as operator certification, under a contract with a private entity. At the beginning of the cut-off, because funds under the set-aside were also under the cut-off, this situation affected seriously the contracts that were in process. The contractor was not paid, and this brought an administrative limitation and non-compliance with the contract agreement, thus, the contractors did not want to continue providing the services. To this effect, this Department continued providing the assistance to the systems, but limited in its outreach. All activities were limited during fiscal years 2016 through 2019, impaired and even halted due to the financial situation of the government of Puerto Rico and the federal cut-off of funds transactions between the federal Treasury and Puerto Rico. Moreover, this situation persists and has been aggravated in FY 2020 due to the recurrent earthquakes that began in December 2019 and became more damaging throughout January 2020, May and in July is added the flooding caused by the potential cyclone Isaias. During fiscal year 2020 approximately fifty (50) systems that were previously considered within pilot projects, DOH continued its oversight as a follow-up of previous, sanitary surveys, and/or action plans and/or capacity determinations in order to continue availing their process of compliance and capacity attainment. Also, DOH continued the technical assistance provided in the area of compliance and the use of Circuit Riders as a tool for assistance during this year. In addition, DOH continued working the area of small systems security and emergency response due to the Hurricanes. Notwithstanding that a proposal for providing assistance to small systems was received and evaluated and all paperwork and documentation was prepared in order to enable the execution of a contract this was not possible until October 2020 due to several reasons:

- the federal cut-off of electronic funds transfer mechanism between the US Treasury and the Commonwealth;
- financial distress of the government of Puerto Rico/impairment for use of local funds to execute contract;
- enforcement of the PROMESA Act and limitations in the contracting of services;
- Hurricanes Irma and María impact in the economy due to resiliency activities;
- earthquakes have been affecting and continue affecting the island's activities since December 2019;
- lockdown of March 2020 by the Honorable Governor of Puerto Rico of all activities due to the worldwide spread coronavirus pandemic; and
- flooding resulting from the potential cyclone Isaias on July 30, 2020, that caused an electric power failure.

DOH expects to continue exertions to outreach the greatest number of systems possible with the limited funds available, but lack of funds hindered the ability to expand the outreach.

DOH started at the beginning of FY 2020 with the activities designed for the new pilot project in order to outreach the greatest number of systems possible.

During this fiscal year DOH continued its oversight as a follow-up of previous, sanitary surveys, and/or action plans and/or capacity determinations in order to continue availing their process of compliance and capacity attainment for approximately fifty (50) systems that were previously considered within pilot projects. Also, DOH continued the technical assistance provided in the area of compliance and the use of Circuit Riders as a tool for assistance during this year. In addition, DOH continued working the area of small systems security and emergency response due to the Hurricanes. The TAS establishes the following priorities:

B. Capacity Development Program and Associated Activities:

The Capacity Development Program established as a priority enabling several projects directly associate to capacity development to be on-going, initiated or being in the development process:

1. **Capacity Development Project.** With this pilot project in place, the use of the capacity development manual developed by DOH for this purpose will be implemented and validated. This manual is a tool that will assist and guide the systems in understanding and attaining capacity. During FY 2013, the Capacity Development Manual was updated. A Comprehensive Performance Evaluation (CPE) designed for small systems by profiling the system was implemented during FY 2014 using the updated Manual. This was carried over by RCAP Solutions under a two years' contract that initiated in January 2013. It was also used the circuit riders' approach to provide technical assistance for compliance with the SDWA. Systems were profiled before and after the use of the Manual to measure capacity progress. This project was completed. With new projects the use of the Manual is implemented and updated/revised, as necessary. A total of forty-eight (48) systems were evaluated in terms of their capacities, where the technical, financial, and administrative capacities will be measured. In addition, Sanitary Surveys were undertaken to these systems as part of the process of attaining compliance with the SDWA. All forty-eight Sanitary Surveys were undertaken with their corresponding compliance Action Plans. For FY 2015 a new contract was executed to provide assistance to 48 systems. This contract ended in September 2016. During FY 2016, PRDOH's personnel was involved in completion of the activities and evaluating and processing an extension to the actual contract for two additional years. Due to the federal cut-off of electronic funds transfer mechanism between the US Treasury and the Commonwealth and, thus, lack of federal and local funds due to the financial crisis, the Department of Health was not able to renew and/or extend the contract. Notwithstanding that a proposal for this purpose was received and evaluated and all paperwork and documentation was prepared in order to enable its execution, this was not possible. During FY 2018 through 2019, PRDOH's personnel was involved in resiliency actions for the recovery of the Island after

the impact of Hurricanes Irma and María. Serious impairment to the resiliency was lack of communications systems, priority actions were those towards the recovery of government activities and structure and infrastructure, emphasizing drinking water systems of the Island.

Nevertheless, coordination was established, and assistance provided with ten private entities in order to avail the delivery of workshops to small systems based on the training need of the systems as well as on the number of assistances/trainings provided to the systems. During fiscal year 2019 approximately six workshops were undertaken on this regard by ten sponsors. For fiscal year 2020, a total of five (5) workshops have been undertaken, one of them related to the training needed by the systems' operators. As of August 2021, a total of eleven (11) were undertaken and one is scheduled for September 2021. As of September 30, 2022, six (6) workshops have been undertaken.

2. **Operator Certification Project.** Under the Operator Certification projects DOH was able to assist systems in the process of complying with the federal and state laws concerning the certification of operators. In the past, approximately 900 persons were trained in their own system thus technical assistance was undertaken simultaneously because operational adjustments happened as part of the training and approximately 300 operators were expected to be certified. In addition, train the trainer session were also undertaken to assure continuity of the certification process. (Completed and licenses were issued). New contract was executed to assist operators in achieving experience necessary to receive the license. During fiscal years 2018 and 2019, notwithstanding all the resiliency actions undertaken after the impact of Hurricanes Irma and María and that currently continue being undertaken, DOH continued providing assistance to the systems in the process of obtaining licenses and/or undertaking the examinations. Coordination with a private entity (RCAP Solutions/AWWA) was established to avail the delivery of workshops to small systems related to training and procedures for the certification and licensing of operators. For instance, in coordination with RCAP/AWWA the workshop: "Achieve & Maintain Compliance with the SDWA" was provided to fifteen small systems' operators in January 18, 2018. The workshop explored alternatives to help the communities with their payments, as well as how to increase the earnings regarding connections and other. During this activity, AWWA provided first need articles to be donated to the communities and HACH, a private entity, provided all the communities with the kits to measure chlorine and turbidity. During last year 2020, the workshop "*Adiestramiento sobre Manual de Operación y Mantenimiento & Plan de Respuesta a Emergencia*" was offered online by RCAP Solutions on June 20, 2020. Also, the flyer "Consejos Operacionales para los Acueductos Comunales", prepared by RCAP, was distributed by DOH to the small systems operators.

As we have indicated, this Department has been able to obtain funds such as the Operator Certification Expense Reimbursement Grant (ERG), which ended in FY 2013 and established partnerships *i.e.* with RCAP. As a summary of the ERG, the Department of Health had a remaining amount of $82,642 and DOH requested to EPA its transfer to be used under the DWSRF. Notwithstanding EPA's approval of this transfer, which was considered as part of the Capitalization Grant Application of FY 2013, DOH was notified as of November 14, 2013 that this amount was rescinded by the Congress.

Through a period of twenty-four (24) months, and under a contract with RCAP Solutions technical assistance have been provided to the small Non-PRASA systems and an assistance plan was developed and was completed for providing training to the operators. Also, system's operators received assistance for the process of license application and the necessary required information for obtaining it including in force dates and renewal, assessment in the display of the license in the system's facilities and others.

Although DOH had the intention of executing a contract since the cut-off (fiscal years 2017-18, 2018-19 and 2019-20), it was not possible not only due to the cut-off but also due to the impact of Hurricanes Irma and María and the general economic situation and the resiliency activities necessary for the operation of the government. Notwithstanding the impact of the two hurricanes, DOH's gave continuity to the activities planned that were hindered and/or postponed, but in a slow pace. DOH made all possible exertions to execute said contract during fiscal year 2019-20. If such is the case, the time frame had to be modified. It was expected a four-phase contract of two years each, for a total of eight years in order to give continuity to the assistances given to the systems.

During 2018-2019 and 2019-20, in regard to the last contract executed, we must emphasize that we had the intention to request and/or revise existing proposals and proceed with a contract award. This did not happen, but our intention of giving continuity to the activities prevails and to this effect, several options/alternatives have been evaluated. During fiscal year 2020, DOH continued with the expectation of having a catchup alternative and executed contracts that used several tools simultaneously. DOH determined that the most feasible and expeditious way to continue providing technical assistance was contracting personnel to undertake these activities in order to continue the assistances given to the systems. Thus, DOH designed a contract for a pilot project that will use remaining balances of funds from previous years' awards under the line item of Contractual under Technical assistance and State Program Management. In this way we tried to catch up in time lost and money available during the cut-off and give continuity to the assistances provided to the systems.

As stated previously during fiscal year 2018 notwithstanding the impact of Hurricanes Irma and María, DOH continued having a representation in the

Examining Board and continued executing its roles and responsibility in that Board in regard to the exam applications revisions related to the next examination. During FY 2020 we continued providing assistance in the resiliency activities that have not been completed, we have to point out that and the Examining Board's activities were back to normal, and the annual exams and the issuance of licenses were in full operation. Also, a new contractor was hired by the Board to undertake these activities. During the last year**s** a change in the platforms used for the evaluation of the exams applications as well as licenses has delayed to certain extent the process. Nevertheless, due to the coronavirus the Board has not been able to keep in schedule the administration of the exams programmed for the past year. The Board submitted to the "*Comisión Estatal de Elecciones*" the prevention controls/plans undertaken and/or to be undertaken regarding the exposure to the coronavirus in the Didaxis facilities and their approval was tardy.

Regarding the administration of the exams for the four categories for the certification of operators since January 2019 the Examining Board established four periods per year to administer the exams.

The exams corresponding to the Spring and Summer of ~~this~~ fiscal year 2020 were postponed as follows:

Season	Scheduled for	Changed to
SPRING	Tuesday, March 10, 2020	Wednesday, April 29, 2020
SUMMER	Monday, June 8, 2020	Thursday, June 25, 2020

Regarding the administration of the exams for the four categories for the certification of operators since January 2019 the Examining Board established four periods per year to administer the exams. The following table shows the period/dates the exams were administered during fiscal year 2020 and how many candidates approved the exam.

Operator Certification Exams Administered during Fiscal Year 2020					
Dates	Total Approved by Categories				Total
	I	II	III	IV	
November 19 to 20, 2019	3	2	2	9	16
December 2019	4	3	0	12	19
April 2020	0	1	4	3	18

Two future exams were scheduled to be administered on September 8, 2020 and December 7, 2020. It is important to note that the exams scheduled for the summer had to be changed due to the pandemic.

The following table shows the period/dates the exams were administered during fiscal year 2021 and how many candidates approved the exam.

Operator Certification Exams Administered during Fiscal Year 2021					
Dates	Total Approved by Categories				Total
	I	II	III	IV	
December 7, 2020	13	6	6	16	41
April 13, 2021	8	5	7	20	40
June 28, 2021	14	2	5	15	36
September 23, 2021	4	2	1	7	14

As of August 2021, two dates were already scheduled to administer the drinking water treatment plant operator's exam: September 23 and December 23, 2021. The information was published in a local distribution newspaper on July 20, 2021

As of October 2021, the results of the exam administered in September 23, 2021 were available and are included in the above table.

The following table shows the period/dates the exams were administered during fiscal year 2022 and how many candidates approved the exam.

Operator Certification Exams Administered during Fiscal Year 2022					
Dates	Total Approved by Categories				Total
	I	II	III	IV	
December 2021	4	2	4	12	**22**
April 2022	24	3	2	16	**45**
June 2022	1	1	1	5	**8**
September 2022	5	2	9	9	**25**

3. **Small Systems Security.** Among the initiatives undertaken by DOH, several years ago, a pilot project for security in small systems was developed for providing assistance to systems where, within others, vulnerability assessments were developed, and systems were trained so they can respond to emergency situations. Emphasis was given to their technical ability in the response to these situations. As part of the activities undertaken systems were visited as an initial reconnaissance of the systems' condition. Their technical capacity was also measured. Currently, security grant projects have been completed. If additional funds are available, DOH will consider continuing with this project.

There are no funds available for this purpose, thus, this concept has not been extended to new systems. The financial crisis continues limiting the outreach towards new systems. Notwithstanding that almost two years has passed after the impact of Hurricanes Irma and María, still the priority in the use of funds continues being towards the resiliency actions for the recovery of not only government activities, structure and infrastructure, but also towards drinking

water systems of the Island emphasizing emergency response actions and the needed infrastructure in order to encounter new environmental disasters situations.

Now more than ever that Puerto Rico is undergoing several environmental challenges such as the hurricanes and the earthquakes were, added to this, is the coronavirus pandemic and a severe drought with water rationing there is a need to find financial alternatives to retake vulnerability assessments and the preparation of emergency response plans. Once the critical financial situation affecting not only the government but all its instrumentalities including this Department is resolved, DOH will be able to engage in the process of identifying additional funds to specifically develop a new project to consider security concepts. During this year we have been able to identify and establish a new set aside, that its establishment is not limited to the requirement of a state match, to undertake some of these assessments. DOH expects to continue exertions to outreach the greatest number of systems possible with the limited funds available where using the opportunity within other to discuss all these concepts and, thus, continue to present it to the systems. Thus, DOH continues maintaining coordination with other government entities in order to guarantee and maintain general security concepts for all drinking water systems in the Island. Although DOH provides orientation and guidance related to security this has been limited in its outreach when compared to the establishment of a formal project covering more systems. We must emphasize that although no additional funds have been identified for a new project to give continuity in this aspect. We have to mention that during the earthquakes and the pandemic, which currently prevails, security concepts were always considered and maintained, thus this was never disregarded.

4. **Small Systems Source Protection Initiative.** The initiative will ensure that systems understand their role in the public health protection by protecting their source and making available funding programs to that effect based on the knowledge of the health risk associated to the contamination of their source. This initiative is in accordance with the Commonwealth's Source Water Assessment Program (SWAP) established as approved by EPA where the goal of the SWAP program is to provide meaningful information to direct ongoing source water protection efforts and the overall drinking water program in Puerto Rico. Efforts to identify potential sources of pollution will focus on assembling useful information that will address the greatest threats to drinking water, guide future source protection efforts, and direct the DOH public water system supervision program. The SWAP will provide the information needed to develop programs within the multiple barrier concepts. The major results of the program will direct where and how intensified, site-specific source water protection will be needed. (Completed)

The information obtained with the SWAP continues being used for helping the small systems and particularly the Non-PRASA systems towards achieving

progress in the protection of their source and thus prevent their contamination, the operation of the systems which in turn helps them attain capacity. This is a guidance tool that continues been used as part of the assistance to the small system.

The SWAP report provided the tools and information necessary to make the decisions regarding the use of the sources of water and the development of protection and contingency plans. Also, it informs the communities and systems' owners on the activities that may affect the quality of the drinking water. The evaluations undertaken will help to generate significant local efforts to prevent contamination and develop strategies for the protection of drinking water sources. The SWAP is a tool that will further capacity attainment, mainly on the technical area of capacity.

For this reporting period DOH has continued providing technical assistance to systems, particularly small systems that are concerned in knowing their surroundings, in specific potential sources of contamination, which is provided by the SWAP final results. This information is provided to interested parties such as private and public entities, government agencies, university students and teachers for its use for watershed studies.

PRDOH understands that the assessments performed provide or help in the generation of significant local efforts that, in turn, will help to prevent pollution and develop protection strategies for drinking water. This is supported by the evaluation of the final Inter-System Susceptibility since the results obtained reflect the desirable results expected.

Notwithstanding that now there are funds available that do not require state match, this Department has not established said set-aside because there are still limitations in the ability to contract new personnel that would be necessary to undertake these activities. Limitations continue to be financial and are tied up to PROMESA. Thus, these limits the contracting process. Nevertheless, DOH has been able to continue using the existing database to assist systems in the application of the adapted CPE to determine capacity. (On going)

5. **State Program Management Set-aside.** Notwithstanding that since fiscal year 2016-17 there are funds available that do not require state match, up to FY 2019 this Department did not establish said set-aside because there were still limitations in the ability to contract new personnel that would be necessary to undertake these activities. Limitations continue to be financial and are tied up to PROMESA. Thus, these limits e the10% contracting process. During fiscal year 2020 DOH established a 2% out of the 10% available for the State Program Management set aside in order to use those monies for the Circuit Riders pilot project recently designed and included in the FY 2020 IUP and Work Plan. During fiscal year 2021 DOH started the activities under the new pilot project designed. We have to point out that the project began in October 2020 when personnel under professional

service contract were hired. Due to the pandemic, there was turnover of personnel in 2021 and the full startup of the project was also delayed due to the above-mentioned reasons. New personnel were hired in FY 2022 in order to give continuity to the project. As of today, only four (4) positions remain occupied. Nevertheless, it is the intention of DOH to hire additional personnel and increase this number to an optimum number of positions in order to be able to complete the activities. We must mention that the coronavirus pandemic has seriously affected the development of activities and the hiring of additional personnel.

B. **Area – Wide Optimization Program Activities:** - Develop an Area Wide Optimization Program (AWOP) to identify performance problems and prioritize SRF resources and activities to improve performance at defined small water systems. (Initiated)

1) **Optimization Programs.** They will provide for the effective and efficient use of the federal and state's limited resources while assistance is provided to the systems and operational adjustments are undertaken to improve performance and compliance. (On going)

2) **Small Systems CPE.** The Comprehensive Performance Evaluation (CPE) has been adapted to small systems as a procedure to evaluate their performance, unit treatment process and factors limiting performance. (on-going implementation) new contract was executed with RCAP to undertake the small systems adapted CPE in combination with the sanitary survey evaluations for 48 systems. Out of these, during FY 2015 twenty-three systems will be subject to the adapted CPE. As of July 2015, a total of 25 sanitary surveys were undertaken with three action plans completed and fourteen adapted CPE with their corresponding CPE completed. During FY 2016 ten sanitary surveys were undertaken; and twenty action plans corresponding to sanitary survey were undertaken**.**

During fiscal year 2016, the project was completed, and the following was attained: Forty-eight (48) systems were subject to Sanitary Surveys and only 23 were evaluated in terms of their capacities, where the technical, financial and administrative capacities will be measured. In addition, Sanitary Surveys were undertaken to these systems as part of the process of attaining compliance with the SDWA. Notwithstanding the cut-off, information received, including reports, during the first quarter of FY 2017 was revised to ensure compliance with the contract termination and payment of invoices received. As of December 2017, the project was completed and DOH was able to undertake 37 sanitary survey with the corresponding action plans during FYs 2018. We have to point out that no new contracts were executed during FYs 2018 and 2019. As stated previously, the financial distress together with the cut-off continued hindering the ability to enter into new contract and expanding the outreach. No one wanted to enter into contract with an entity in financial distress that was aggravated with the cut-off. DOH was not able to enter into a new contract, thus, no CPEs were performed.

It is well known that at that point we were already under two years of federal cutoff that marked severely the condition of lack of funds moreover when the Island was hit by the end of fiscal year 2017 by two hurricanes: Irma and María. DOH had to direct all its exertions towards resiliency activities related to the assistance to the systems in order to be able to assure safe water. As of today, due to lack of on-time assistance and cash flow we have to say that there are houses that lack adequate or no roofing. Nevertheless, due to the poor electric power infrastructure many small systems have moved to have spare generators or solar panels to ensure the systems' constant or continuous service.

Full recovery is yet to come because to add on to the precarious situation we had a series of destructive earthquakes at the end of FY 2019 and the beginning of 2020 that devastated the island. The precarious conditions increased due to the worldwide coronavirus pandemic. Due to Puerto Rico's location, we are subject annually to a hurricane season which is preceded by the rainy season of the Island. Our environmental conditions may deteriorate due patterns of flooding and drought that affects not only the economy but all our drinking waters systems. At this point in FY 2020 we continued having limited and aggravated general conditions in the Island which hinders the possibility of furthering assistance to the small systems and expanding the outreach. During FY 2021, the same conditions as in in 2020 prevailed; therefore, assistance was directed towards the prevailing challenges. During 2021 DOH has been able to undertake the regular day to day activities. A pilot project designed for undertaking sole CPEs was not possible. Nevertheless, a related pilot project was executed under which sixty (60) CPEs for small systems were undertaken during FY 2021 and 2022.

3) **<u>Priority List.</u>** Systems will be prioritized by the use of a priority list in order to attend the systems based on the needs and health-based violations. (Is under development with the revision of the Non-PRASA Strategy using as target systems with the greatest population.) During fiscal year 2018, as a result of the impact of Hurricanes Irma and María new initiatives have emerged that changed the strategy and the priorities established in an effort to expedite the recovery process and the assistance that is provided to the systems to that effect. New efforts in coordination with new non-government organizations have been undertaken during fiscal years 2018 through 2022 including direct assistance to systems through visits and field inspections, to the extent possible, and particularly regarding the earthquakes, where aspects such as the use of solar energy with photovoltaic solar panels has been incorporated in the operation of systems in order to provide the necessary power needed for the process. Nevertheless, due to the lockdown related to the current pandemic and recent environmental disasters no further action has been undertaken. During fiscal year 2022 due to the prevailing pandemic, flooding events and power outages, and the recent hit of Hurricane Fiona, priorities are towards completing

assistances provided by private entities including FEMA also addressing the earthquakes and the hurricane, but not disregarding compliance of the systems.

C. Circuit Riders Program Activities:

1) **Technical Assistance.** DOH has offered technical assistance to systems through the Public Water Supply Supervision Program (PWSS) of the Department of Health Drinking Water program. The DWSRF Program since its establishment has provided support to the PWSS. Several state environmental projects with EPA have been undertaken. Assistance is provided in the areas of operation, maintenance, and compliance process. Also, advice is offered on the enhancement and need to rehabilitate infrastructure to attain compliance. (On-going). Assistance to systems continued as part of the prevailing resiliency actions with the development of new interagency assistance groups. During FY 2022 a new pilot project, which started in October 2020, continued providing assistance to the systems using funds under this set aside, and funds under the State Program Management set aside were also used.

2) **Circuit Riders Project.** With the project, assistance will be provided to more communities in order to develop the Capacity and AWOP programs.) During FY 2016, DOH provided assistance to forty-eight (48) systems under the Circuit Riders project. Since FY 2017 through FY 2019 the federal cut-off as well as all the above-mentioned reasons have limited DOH's performance and assistance. Notwithstanding the latter, and on the other hand, due to the impact of two hurricanes, and the new environmental and health emergencies past 2019 of the earthquakes and the coronavirus pandemic new cooperative efforts were structured to assist systems, particularly with FEMA and other non-government organizations, that continue ongoing as previously described in the report. Now, with a contract entered into for the new pilot project that began in the first quarter of FY 2021 (October 2020), DOH has been able undertake certain activities but limited due to personnel turnover resulting from the prevailing conditions previously detailed**.** Up to July 2021, only two (2) CPEs were undertaken.

During FY 2020 and 2021 a total of ten professional were hired, nevertheless, due to the financial situation and the pandemic seven (7) persons resigned as of today. A total of sixty-six (66) CPEs have been undertaken during this current 2022 fiscal year.

3. **Circuit Riders Partners.** This initiative intends to broaden and increase: the number of human resources that provide direct assistance to the small systems, and the training skills in order to lead and target the efforts towards small systems to ensure that these systems have the tools needed to comply with the drinking water regulations.

The Drinking Water Program has coordinated government efforts to assist these systems and has participated with other agencies, including EPA, as well as private entities, which have participated in partnership to assist them technically and economically on this regard. The new partner identified and current lead agency for a new initiative is the Puerto Rico Department of State under the Sustainable Community Aqueducts Program. Under the initiative and up to date almost all small Non-PRASA systems have been assisted. We have to point out that by September 2016, with the cut-off, the pace of activities, contracts, and assistances almost ended or diminished. As of today, DOH expects to execute a new contract or hire personnel in order to catch-up with those activities. Although the cut-off has been totally ridde**n**, we cannot forget that we continued under serious environmental and health challenges. Coordination with circuit rider's partners was mainly addressing on going assistance related to the resiliency after the hurricanes that still as of today have not been completed as well as the recovery and resiliency actions after the earthquakes, the pandemic and the flooding related to the rainy season and new hurricane season.

DOH continues with the Circuit Riders program by providing assistance to regular partners in this process. Although this program continues being limited in funds and it has not been possible to expand it, the interagency coordination provided has continued but it has been discussed and determined that a multi-sectorial effort, where not only the government but also civil society and private sectors need to joint to achieve the assistance and sustainability of systems. This has become one of the positive outcomes resulting from the hurricanes hit, when various non-government entities collaborated and became part of the "Interagency Committee which was reactivated during fiscal year 2017 and was renamed as the "Multi-sectorial Committee for the Organization and Compliance of the Community Aqueducts" during fiscal year 2018. As we explained previously, due to the prevailing pandemic and earthquakes since FY 2020 certain activities undertaken by this committee are ongoing under Water Coalition. As we have mentioned, there are still some assistances that continue being provided.

Attachment II-b: **SUSTAINABLE COMMUNITY AQUEDUCTS PROGRAM AND LIST OF PUBLIC WATER SYSTEMS PARTICIPATING FY 2016**

Since September 15, 2014, the Honorable Governor of Puerto Rico signed Executive Order No. EO-201-.041 "to create a Sustainable Community Aqueducts Program (SCAP), with the mission of implementing a support program for the drinking water community systems, thus fostering a sustainable development of the communities through self-management and capacitation". It envisions providing the capacitation to the drinking water community systems that will enable them to maximize drinking water quality and guarantee an adequate organization, administration and compliance through this model of sustainability.

The Program is under the responsibility of the Department of State which will administer it, together and in coordination with DOH. In addition, an "Interagency Committee for the Organization and Compliance of the Community Aqueducts" was created in fiscal year 2017, whose President is the Secretary of State. The objective of the Committee is to facilitate the planning and execution of the necessary works of the Program. The Committee is composed, among others, of the following government officers:

a) The Department of Health Secretary or its designee as representative,
b) The President of the Environmental Quality Board or its designee as representative,
c) The President of the Planning Board or its designee as representative,
d) The Secretary of the Department of Environmental and Natural Resources or its designee as representative,
e) The Executive President of the Aqueduct and Sewer Authority or its designee as representative,
f) The General Coordinator of the Socioeconomic Financing and Auto-management Office or its designee as representative.

The members of the "Interagency Committee for the Organization and Compliance of the Community Aqueducts" will assign the human, technical and economic resources needed and available for the proper execution of their duties and responsibilities, in accordance with Executive Order OE-2014-041 and with the ministerial duties established in their respective organic laws.

As part of the Public Water Systems Participating in the Sustainable Community Aqueducts Program, the Drinking Water Division of the Department of Health participated in four (4) interagency meetings during FY 2015, where all the implementation of the Program was discussed. In addition, the DWD of DOH offered consulting and assistance to the Department of State personnel regarding situations identified during visits undertaken by that personnel to the water systems participating; programmed monitoring for the following chemical parameters: Volatile Organic Chemicals, Synthetic Organic Chemicals, TTHM's and HAA-5, Inorganics, Lead and Copper, Nitrate and Nitrites, Radiologic, etc. for the participant systems; agreed to use the escrow funds to cover the cost of the monitoring to the thirty-four (34) public water systems participating in the Sustainable Community Aqueducts Program. During June 2015 the monitoring to these systems started monitoring for chemical parameters and with the first semester for lead and copper. As of

December 2015, thirty-four (34) systems were monitored for lead and copper for its second semester, and for chemical parameters. Related to this initiative, the Department of Health participated in a webinar for Revised Total Coliform Rule (RTCR). This webinar was coordinated with the CIS. This information is available not only for the systems participating in the SCAP, but all systems that want to access the information which is free in the website. In addition, two (2) presentations were offered: "Agua Potable, Leyes y Reglamentos" and "Cumplimiento y Laboratorios para Agua Potable para Acueductos Comunitarios". These presentations are also available under the CIS website in the following links:

http://www.innovacionpr.com/catalogo/detalle/31/
http://www.innovacionpr.com/catalogo/detalle/47/
http://www.innovacionpr.com/catalogo/detalle/57/

With the limitation in funds, the change in the government administration, and as a result of the election of November 2016, this Program ended in December 2016. Nevertheless, two meeting were undertaken. For the list of public water systems that participated in the Sustainable Community Aqueducts Program.

Following is the list of public water systems participating in the Sustainable Community Aqueducts Program:

Public Water Systems participating in the Sustainable Community Aqueducts Program			
PWS-ID	**NAME**	**MUNICIPALITY**	**REGION**
PR0238082	Veguitas Gripinas	Jayuya	Norte
PR0367013	Acued. Rural Guacio	San Sebastian	Oeste
PR0401024	Guilarte Helechales	Adjuntas	Sur
PR0401034	Pellejas	Adjuntas	Sur
PR0455334	Comunidad Limones	Orocovis	Sur
PR0505055	Cuyón	Aibonito	Este
PR0505075	Algarrobo Nuevo	Aibonito	Este
PR0510095	Acued. Com. Bo. Quebradillas	Barranquitas	Este
PR0510145	Acued. Rural Palmarito Cintron	Barranquitas	Este
PR0510215	Com. Barrancas Centro	Barranquitas	Este
PR0521075	Com. Aislada Almirante	Cidra	Este
PR0556035	Bo.Quebrada Arriba	Patillas	Sur
PR0604066	Juan Asencio	Aguas Buenas	Este
PR0604176	Acued. Comunal El Llano	Aguas Buenas	Este
PR0613016	Com. Casa De Piedra	Caguas	Este
PR0613036	Parc. Nuevas Cañaboncito Acued	Caguas	Este
PR0613046	Acued. Rural Turabo Arriba	Caguas	Este
PR0613056	Los Velazquez	Caguas	Este
PR0613106	Sector Lozada Y Pozo Dulce	Caguas	Este

Public Water Systems participating in the Sustainable Community Aqueducts Program			
PWS-ID	**NAME**	**MUNICIPALITY**	**REGION**
PR0613246	Usuarios Pozo Profundo	Caguas	Este
PR0613256	Pinas-Beatriz Ii	Caguas	Este
PR0613266	Borinquen-Praderas	Caguas	Este
PR0613296	La Unión	Caguas	Este
PR0613366	Acued. Com. Sector La Sierra	Caguas	Este
PR0613426	El Manantial	Caguas	Este
PR0613446	Pozo De Agua	Caguas	Este
PR0613486	Hacienda Del Rey	Caguas	Este
PR0613506	Acued. Villas De Oro	Caguas	Este
PR0666076	Quemados Ii Sec. Vicente	San Lorenzo	Este
PR0666126	Acued. Com. Edem	San Lorenzo	Este
PR0677016	Acued. Rural De Tejas	Yabucoa	Este
PR0677076	Acued. Bo. Guayabota	Yabucoa	Este
PR0677196	Acued. Rural Sect. El Veinte	Yabucoa	Este
PR0724087	Copar	Corozal	Norte

For FY 2021, as well as for fiscal year 2020 reports, due to the earthquakes followed by the pandemic DOH has been unable to include in the report additional information related to efforts under the Sustainable Community Aqueducts Program beyond those dealing with the emergencies. As mentioned earlier, all systems have been assisted and attended and the exertions have been directed towards their empowerment, which has increased based on the need to deal with the prevailing emergencies.

In 2022 we still continue in similar circumstance such as the resiliency after the incidents of hurricanes Irma and Maria together with the constant and prevailing earthquakes and fragile electric power infrastructure and constant outages, the prevailing pandemic with all its variants and the recent hit of the new hurricane Fiona all systems have received assistance from the different entities in order to empower them and help them in not only in the resiliency activities that they were forced to undertake due to the circumstances but to move them to new proactive approaches and actions conducting towards sustainability. Many have been able to attend to workshops for this purpose as well as new workshops sponsored also during 2022. We have to mention that notwithstanding the difficulties encountered by the systems, these in turn and to certain extent have moved them towards sustainability. Example of this is the use of generators, solar panels, water tanks and even alternative housing their empowerment has increased towards becoming self-sufficient. This is because they are well aware of the precarious situation related to the outdated and fragile electric power infrastructure. Systems have empowered themselves and have made partnerships in order to be independent particularly “off the grid” and thus self-sufficient. Systems are making more use of technology and on the other hand technology has reach some places that before was not possible. This has opened new horizons of knowledge.

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Attachment III: ***ENVIRONMENTAL SUPPLEMENTARY PROJECT (ESP) INITIATIVE -OR "PROYECTO AMBIENTAL SUPLEMENTARIO" (PAS)***

The original PAS initiative or First PAS was divided in three phases, which were completed on December 2013.

- Phase 1 named Regulated Chemical Contaminants Monitoring in drinking water;
  a) 63 systems
  b) 58 systems
  c) 91 systems
  d) 34 systems
- Phase 2 - Installation of Disinfection Equipment;
- Phase 3 - Non-PRASA's systems Connection to PRASA's service. All these, as stated before, were completed.

In turn, Phase I had four steps. DOH participated directly in this project. To the extent possible, the system were assisted in three different areas: chemical monitoring, equipment installation, connection to PRASA. In the PAS Phase III, DOH assisted in the authorization of the disbursement of funds to contractors and suppliers. Also, DOH evaluated all the results of the monitoring undertaken under the PAS for compliance determination and no system was found in violation. Once more, the lack of funds prevent reaching more outcomes in terms of the assistance and the number of systems touched.

In the different areas of this project, systems were assisted as follows:

PAS 1. Chemical monitoring: PRASA will undertake the monitoring/sampling for Regulated Chemical contaminants for approximately sixty-four (64) systems during one year. A second phase was undertaken for approximately fifty-eight (58) new systems. A total of 122 systems were assisted.

PAS 2. Equipment installation for the improvement of the operation of fifteen systems (15) including training for the operation of the system: A total of seven (7) systems disinfection equipment was installed including disinfectant in order to reduce the risk of microbiological contamination. Assistance was available for only 15 systems that qualify.

Up to December 2013, DOH participated directly in the "PAS" or "ESP" providing assistance. A list of the systems assisted was included as an attachment in the report previous reporting period. The systems continued to be assisted to the extent possible in three different areas:

PAS 1. Chemical monitoring: The total number of systems that PRASA monitored/sampled for Regulated Chemical contaminants was sixty-three (63). A second phase was undertaken for approximately fifty-eight (58) new systems. In the third phase, 91 new systems were selected. A total of 212 systems were selected to be assisted but finally 212 received the assistance. During the third phase, also the systems of the first and second phase were monitored (58 + 63)

and sampled for the following parameters: Halo acetic acids (HAA's), Total Trihalomethanes (TTHM's), nitrates, nitrites, metals and radiological. This third phase was initiated during the second quarter (January through March) of fiscal year 2013 and ends during the first quarter of fiscal year 2014 (October-December 2013). We have to point out that the systems participating in Phase I and II and that sampled during 2013, were sampled for the following parameters: (TTHM's), nitrates HAA's, and some of them based on population, were sampled for metals and others were sampled if they had detections during the initial sample undertaken during FYs 2011 and 2012.

PAS 2. Fifteen systems (15) were evaluated for equipment installation for the improvement of the operation of including training for the operation of the system, of these, a total of six (6) systems received disinfection equipment which was installed including disinfectant in order to reduce the risk of microbiological contamination and one system received the disinfectant and equipment to measure residual chlorine.

PAS 3**.** Assistance to schools that receive water from a NON-PRASA system in order to connect them to the PRASA systems: Up to now, only one school (Head start) was connected to PRASA.

During August 2019, a Second Environmental Supplemental Project (Segundo PAS) has been established. During the period through December 2018 to March 2019 DOH oriented the small drinking water systems selected for their participation in the Second PAS. DOH also participated in the selection of the small systems, where initially one hundred thirty systems were included. Later, thirteen Non-PRASA systems were added, thus, this Second PAS will address a total of one hundred forty-six (146) small systems. In addition, this Department participated in the selection of the chemicals and parameters that were to be sampled and these samples were taken in the small drinking water systems participating. The parameters were: volatile organic chemical (VOC's); synthetic organic chemical (SOC's); secondary maximum contaminants; radionuclides; and inorganic chemicals (IOC's). Also, systems that had no record of lead and copper monitoring were oriented of the requirements that they needed to comply with for said monitoring; and that their systems would be referenced as a sample point in this project. The procedure to take samples for lead and copper monitoring was provided by e-mail to various systems.

During fiscal year 2018, and 2019 one hundred forty-six (146) systems were evaluated through the Second PAS. This Second PAS was extended throughout 2019 and included 2020 due to the earthquakes and the pandemic.

In October 2020 and in collaboration with PRASA, DOH presented another conjunctive motion in order to include two additional Non-PRASA systems in the Second PAS, thus increasing the number of systems benefited to one hundred-forty-eight (148). Also, this conjunctive motion presented the need:

- to continue the monitoring that was halted due to the coronavirus pandemic;
- to undertake a second monitoring on some systems that presented some detection

levels of lead and cooper in the first monitoring;
- to undertake a second monitoring on four (4) systems that presented some detection levels of nitrate in the first monitoring.

Due to the pandemic everything in the project was delayed. As of 2021 only one meeting was undertaken in the third quarter of FY 2021 (November 2020).

Since the beginning of this project, up to August 2021 a 94% of the project sampling was completed.

Regarding the sampling programmed for this fiscal year, as of July 2021 it was completed in 100% for DBP's, VOC, SOC, Inorganic Radionuclides and Secondaries. For Pb & Cu, the sampling programmed was completed in 61%. As for the nitrates sampling programed, this was completed in 92%.

In general, the following was undertaken during fiscal year 2021:

- the total number of systems outreached with these monitoring increase to one hundred forty-eight (148);
- only one meeting was held during November 2020;
- a total of three (3) invoices were evaluated by DOH and approved for PRASA's payment to the Environmental Quality Laboratories, Inc (EQLABS) through letters dated September 3, 2020, November 6, 2020, and June 15, 2021.

Following is the list of the systems participating in the Second PAS.

LIST OF SMALL DRINKING WATER SYSTEMS PARTICIPATING IN THE "SECOND ENVIRONMENTAL SUPPLEMENTARY PROJECT"							
PWSID	**REGION**	**SYSTEMS**	**MUNICIPALITY**	**POB.**	**SAMPLING FREQUENCY FOR Pb & Cu**	**SAMPLING FREQUENCY FOR DBP'S**	**SAMPLING FREQUENCY FOR OTHER PARAMMETERS**
PR0207042	North	ARROZAL - LOS MUERTOS	ARECIBO	350	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0220042	North	POZO AZUL, CORP.	CIALES	305	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0238012	North	ZAMAS	JAYUYA	1400	Biannual, Jan-Jun & Jul-Dec	Quarterly	One time
PR0238022	North	SANTA ROSA	JAYUYA	460	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0238082	North	VEGUITAS GRIPINAS	JAYUYA	130	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0242052	North	ASOC. PRO BIENESTAR MAGUEYES	LARES	140	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0242122	North	COM. LAS CUARENTA	LARES	212	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0247092	North	MONASTERIO MADRE DE DIOS	MANATI	32	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0272012	North	VIVI ABAJO	UTUADO	57	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0272162	North	LA CASCADA MILAGROSA	UTUADO	168	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0272252	North	SIST. RURAL GRAULAO	UTUADO	64	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0272272	North	SALTOS CAGUANA	UTUADO	280	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0302013	West	COMUNIDAD GABINO NEGRON	AGUADA	740	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0302023	West	JAGUEY CHIQUITO	AGUADA	856	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0302033	West	QUEBRADA LARGA	AGUADA	488	One Time, Jul - Sep	One time	One time
PR0302083	West	PROYECTO AGUAS	AGUADA	412	One Time, Jul - Sep	One time	One time
PR0306023	West	CORCOBADA	ANASCO	360	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0306053	West	ACUED. RURAL BO HATILLO AÑASCO	ANASCO	300	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0306093	West	ACUD-RURAL DAGUEY AJIES ARRIBA	ANASCO	430	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0351023	West	SONADOR II	SAN SEBASTIAN	800	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0364013	West	PERICHE	SAN GERMAN	1100	Biannual, Jan-Jun & Jul-Dec	Quarterly	One time
PR0367013	West	ACUD. RURAL GUACIO	SAN SEBASTIAN	189	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0367053	West	ACUEDUCTO RURAL GUADALUPE MARTI	SAN SEBASTIAN	81	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0377023	West	SECTOR LAGUNA	LAS MARIAS	100	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0401024	South	GUILARTE HELECHALES	ADJUNTAS	219	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0401034	South	PELLEJAS	ADJUNTAS	260	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0401064	South	COMUNIDAD PALOMO	ADJUNTAS	120	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0401074	South	SECTOR LOS HERNANDEZ	ADJUNTAS	240	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0401144	South	LIMANI	ADJUNTAS	150	Biannual, Jan-Jun & Jul-Dec	One time	One time

LIST OF SMALL DRINKING WATER SYSTEMS PARTICIPATING IN THE "SECOND ENVIRONMENTAL SUPPLEMENTARY PROJECT"							
PWSID	**REGION**	**SYSTEMS**	**MUNICIPALITY**	**POB.**	**SAMPLING FREQUENCY FOR Pb & Cu**	**SAMPLING FREQUENCY FOR DBP'S**	**SAMPLING FREQUENCY FOR OTHER PARAMMETERS**
PR0401234	South	GARZAS JUNCOS	ADJUNTAS	460	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0401284	South	JUAN GONZALEZ	ADJUNTAS	500	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0401294	South	ASOCIACION ACUEDUCTO REVENTON	ADJUNTAS	212	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0401364	South	CRUCERO	ADJUNTAS	29	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0422014	South	ASOCIACION RESIDENTE SAN DIEGO	COAMO	300	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0422094	South	COMUNIDAD MONTERIA	COAMO	360	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0431014	South	PELCHAS	GUAYANILLA	120	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0455054	South	FCA. GERALDO PAGAN	OROCOVIS	680	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0455114	South	COM. SABANA	OROCOVIS	560	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0455134	South	PELLEJAS-GALLERA I	OROCOVIS	34	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0455164	South	PELLEJAS II	OROCOVIS	500	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0455274	South	ACUEDUCTO TAITA	OROCOVIS	80	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0455314	South	CORPORACION SALTOS PELLEJA	OROCOVIS	248	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0455324	South	SANTO TOMAS DE AQUINO	OROCOVIS	131	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0455334	South	COMUNIDAD LIMONES	OROCOVIS	450	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0457064	South	ACD. COMUNAL BO. RUCIO (ACBRI)	PENUELAS	600	Biannual, Jan-Jun & Jul-Dec	Quarterly	One time
PR0458004	South	LAS MESAS	PONCE	120	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0458044	South	BO. MONTE LLANOS	PONCE	316	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0458194	South	ANON CARMELITA	PONCE	800	Biannual, Jan-Jun & Jul-Dec	Quarterly	One time
PR0458264	South	ACD. COMUNAL RIO CHIQUITO	PONCE	320	One Time, Jul - Sep	One time	One time
PR0458304	South	LA CARMELITA	PONCE	38	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0476134	South	VACAS III	VILLALBA	500	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0476154	South	VISTA ALEGRE	VILLALBA	340	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0476314	South	SIERRITA-CAONILLA	VILLALBA	100	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0478014	South	BO. RUBIAS	YAUCO	312	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0478034	South	LA MONTANA	YAUCO	80	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0478044	South	CERROTE	YAUCO	58	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0478064	South	GUARAGUAO	YAUCO	420	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0478094	South	MOGOTE	YAUCO	100	Biannual, Jan-Jun & Jul-Dec	One time	One time

LIST OF SMALL DRINKING WATER SYSTEMS PARTICIPATING IN THE "SECOND ENVIRONMENTAL SUPPLEMENTARY PROJECT"							
PWSID	**REGION**	**SYSTEMS**	**MUNICIPALITY**	**POB.**	**SAMPLING FREQUENCY FOR Pb & Cu**	**SAMPLING FREQUENCY FOR DBP'S**	**SAMPLING FREQUENCY FOR OTHER PARAMMETERS**
PR0505055	East	CUYON	AIBONITO	461	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0505075	East	ALGARROBO NUEVO	AIBONITO	156	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0510055	East	CANABON ABAJO	BARRANQUITAS	299	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0510065	East	TABOR	BARRANQUITAS	432	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0510095	East	ACUED. COM. BO. QUEBRADILLAS	BARRANQUITAS	1862	Biannual, Jan-Jun & Jul-Dec	Quarterly	One time
PR0510115	East	LOS MUCHOS	BARRANQUITAS	280	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0510125	East	LA TIZA II	BARRANQUITAS	240	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0510145	East	ACUED. RURAL PALMARITO CINTRON	BARRANQUITAS	720	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0510165	East	COM. DOÑA MAYO (EL LLANO II)	BARRANQUITAS	253	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0510195	East	HELECHAL-GUAYABO	BARRANQUITAS	720	One Time, Jul - Sep	One time	One time
PR0510215	East	COM. BARRANCAS CENTRO	BARRANQUITAS	620	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0510225	East	ACUED. CANABON SECT. EL PARQUE	BARRANQUITAS	113	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0518075	East	VECINOS COMUNIDAD LUIS LEBRON	CAYEY	193	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0518105	East	ASOC. VILLAS GUAVATE	CAYEY	63	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0518135	East	ACUED. BO. CEDRO	CAYEY	168	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0521025	East	CARRASQUILLO	CIDRA	581	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0521035	East	PELEGRIN SANTO	CIDRA	298	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0521075	East	COM. AISLADA ALMIRANTE	CIDRA	286	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0523055	East	COMUNIDAD MAISONET	COMERIO	745	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0523095	East	CEDRITO	COMERIO	360	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0549085	South	TALANTE	MAUNABO	60	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0549095	South	SISTEMA DE AGUA MATUYAS BAJO	MAUNABO	88	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0549115	South	Sistema Cruz Leon	Maunabo	30	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0556015	South	MULAS	PATILLAS	652	Biannual, Jan-Jun & Jul-Dec	Quarterly	One time
PR0556025	South	BO.REAL	PATILLAS	522	Biannual, Jan-Jun & Jul-Dec	Quarterly	One time
PR0556035	South	BO.QUEBRADA ARRIBA	PATILLAS	840	Biannual, Jan-Jun & Jul-Dec	Quarterly	One time
PR0556055	South	MAMEY	PATILLAS	424	One Time, Jul - Sep	One time	One time
PR0556075	South	BO. JACABOA- HIGUERO	PATILLAS	70	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0556125	South	ACUEDUCTO MACHUCHAL	PATILLAS	55	Biannual, Jan-Jun & Jul-Dec	One time	One time

LIST OF SMALL DRINKING WATER SYSTEMS PARTICIPATING IN THE "SECOND ENVIRONMENTAL SUPPLEMENTARY PROJECT"							
PWSID	**REGION**	**SYSTEMS**	**MUNICIPALITY**	**POB.**	**SAMPLING FREQUENCY FOR Pb & Cu**	**SAMPLING FREQUENCY FOR DBP'S**	**SAMPLING FREQUENCY FOR OTHER PARAMMETERS**
PR0556135	South	MULAS SECTOR SOFIA	PATILLAS	53	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0556145	South	MARIN, SECTOR BETANCOURT	PATILLAS	53	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0604016	East	LAS CORUJAS	AGUAS BUENAS	800	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0604036	East	COMUNIDAD RIVERA	AGUAS BUENAS	500	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0604046	East	MULITAS CENTRO	AGUAS BUENAS	670	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0604056	East	SECTOR TIZA	AGUAS BUENAS	327	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0604066	East	JUAN ASENCIO	AGUAS BUENAS	745	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0604076	East	COMUNIDAD-MADRIGUERA	AGUAS BUENAS	476	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0604086	East	BAYAMONCITO	AGUAS BUENAS	536	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0604176	East	ACUED. COMUNAL EL LLANO	AGUAS BUENAS	342	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0613016	East	COM. CASA DE PIEDRA	CAGUAS	372	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0613036	East	PARC. NUEVAS CAÑABONCITO ACUED	CAGUAS	312	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0613046	East	ACUED. RURAL TURABO ARRIBA	CAGUAS	745	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0613246	East	USUARIOS POZO PROFUNDO	CAGUAS	193	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0613296	East	LA UNION	CAGUAS	321	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0613366	East	ACUED. COM. SECTOR LA SIERRA	CAGUAS	1430	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0613376	East	BUENOS AIRES	CAGUAS	154	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0613426	East	EL MANANTIAL	CAGUAS	128	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0613446	East	POZO DE AGUA	CAGUAS	530	One Time, Jul - Sep	One time	One time
PR0613466	East	COMUNIDAD VILLA VIGIA	CAGUAS	30	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0613486	East	HACIENDA DEL REY	CAGUAS	143	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0613506	East	ACUED. VILLAS DE ORO	CAGUAS	119	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0627016	East	JUAN DIEGO	FAJARDO	103	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0644076	East	LIJAS	LAS PIEDRAS	596	Biannual, Jan-Jun & Jul-Dec	Quarterly	One time
PR0644086	East	COM. ASOMANTE	LAS PIEDRAS	697	One Time, Jul - Sep	One time	One time
PR0644106	East	ACUEDUCTO RURAL ASOMANTE 2	LAS PIEDRAS	1060	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0644136	East	ACUED. RURAL MONTONES 4	LAS PIEDRAS	223	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0653056	East	ACUED. DE LA COM. EL DUQUE	NAGUABO	172	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0661046	East	BARCELONA	RIO GRANDE	260	Biannual, Jan-Jun & Jul-Dec	One time	One time

LIST OF SMALL DRINKING WATER SYSTEMS PARTICIPATING IN THE "SECOND ENVIRONMENTAL SUPPLEMENTARY PROJECT"							
PWSID	**REGION**	**SYSTEMS**	**MUNICIPALITY**	**POB.**	**SAMPLING FREQUENCY FOR Pb & Cu**	**SAMPLING FREQUENCY FOR DBP'S**	**SAMPLING FREQUENCY FOR OTHER PARAMMETERS**
PR0666016	East	ASOC. VECINO SECTOR OQUENDO	SAN LORENZO	253	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0666036	East	LOS DIAZ	SAN LORENZO	241	One Time, Jul - Sep	One time	One time
PR0666046	East	QUEMADO I SEC. LOS ORTIZ	SAN LORENZO	286	One Time, Jul - Sep	One time	One time
PR0666056	East	LA CUCHILLA	SAN LORENZO	400	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0666066	East	ACUED.COMUNAL SEC. MANUEL DIAZ	SAN LORENZO	357	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0666076	East	QUEMADOS II SEC. VICENTE	SAN LORENZO	283	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0666086	East	CORPORACION SEC. CANTERA	SAN LORENZO	53	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0666096	East	COMUNIDAD SECTOR LOS GOMEZ	SAN LORENZO	149	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0666106	East	EL CERRO	SAN LORENZO	149	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0666126	East	ACUED. COM. EDEM	SAN LORENZO	30	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0666136	East	COMUNIDAD EMMANUELLI	SAN LORENZO	74	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0677016	East	ACUED. RURAL DE TEJAS	YABUCOA	1892	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0677066	East	SODOMA	YABUCOA	566	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0677076	East	ACUED. BO. GUAYABOTA	YABUCOA	2268	Biannual, Jan-Jun & Jul-Dec	Quarterly	One time
PR0677146	East	CALABAZAS ARRIBA	YABUCOA	1341	One Time, Jul - Sep	One time	One time
PR0677186	East	ASOCIACION VECINOS	YABUCOA	125	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0677196	East	ACUED. RURAL SECT. EL VEINTE	YABUCOA	387	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0677206	East	ACUE. JACANAS PIEDRAS BLANCA 2	YABUCOA	512	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0677216	East	JACANAS SUR	YABUCOA	1080	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0724027	North	MANA I	COROZAL	500	One Time, Jul - Sep	One time	One time
PR0724087	North	COPAR	COROZAL	1000	One Time, Jul - Sep	Quarterly	One time
PR0724117	North	COM. ELADIO ANDREU	COROZAL	500	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0724127	North	COMUNIDAD DIVISORIA	COROZAL	43	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0724137	North	COMUNIDAD SECTOR LA RIVIERA	COROZAL	260	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0724147	North	COMUNIDAD SANTANA	COROZAL	200	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0724157	North	COM. MANA SECTOR FRANK LOZADA	COROZAL	200	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0754067	North	ANONES CENTRO I	NARANJITO	1800	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0754077	North	FEIJO	NARANJITO	460	One Time, Jul - Sep	One time	One time

LIST OF SMALL DRINKING WATER SYSTEMS PARTICIPATING IN THE "SECOND ENVIRONMENTAL SUPPLEMENTARY PROJECT"							
PWSID	**REGION**	**SYSTEMS**	**MUNICIPALITY**	**POB.**	**SAMPLING FREQUENCY FOR Pb & Cu**	**SAMPLING FREQUENCY FOR DBP'S**	**SAMPLING FREQUENCY FOR OTHER PARAMMETERS**
PR0754097	North	LAS CRUCES	NARANJITO	1200	Biannual, Jan-Jun & Jul-Dec	One time	One time
PR0754127	North	ACUEDUCTO COMUNIDAD SAN JOSE	NARANJITO	56	Biannual, Jan-Jun & Jul-Dec	One time	One time

In the following list, an X marks or indicates that the corresponding parameter that has been undertaken or is on-going for the systems.

	PWSID	SYSTEM NAME	POP.	LEAD & COPPER	DISINFECTION BY PRODUCTS (DBP'S)	VOC's & SOC's	SECUNDARIES	RADIOLOGICS	INORGANICS
1	PR0207042	ARROZAL – LOS MUERTOS	350	X	N/A	X	X	X	X
2	PR0220042	POZO AZUL, CORP.	305	X	X	X	X	X	X
3	PR0238012	ZAMAS	1400	X	X	X	X	X	X
4	PR0238022	SANTA ROSA	460	N/A	X	X	X	X	X
5	PR0238082	VEGUITAS GRIPINAS	130	X	N/A	X	X	X	X
6	PR0242052	ASOC. PRO BIENESTAR MAGUEYES	140	X	X	X	X	X	X
7	PR0242122	COM. LAS CUARENTA	212	X	X	X	X	X	X
8	PR0247092	MONASTERIO MADRE DE DIOS	32	X	X	X	X	X	X
9	PR0272012	VIVI ABAJO	57	X	N/A	X	X	X	X
10	PR0272162	LA CASCADA MILAGROSA	168	X	X	X	X	X	X
11	PR0272252	SIST. RURAL GRAULAO	64	X	N/A	X	X	X	X
12	PR0272272	SALTOS CAGUANA	280	X	X	X	X	X	X
13	PR0302013	COMUNIDAD GABINO NEGRON	740	X	X	X	X	X	X
14	PR0302023	JAGUEY CHIQUITO	856	X	X	X	X	X	X
15	PR0302033	QUEBRADA LARGA	488	X	X	X	X	X	X
16	PR0302083	PROYECTO AGUAS	412	X	X	X	X	X	X
17	PR0306023	CORCOBADA	360	X	X	X	X	X	X
18	PR0306053	ACUED. RURAL BO HATILLO AÑASCO	300	X	X	X	X	X	X
19	PR0306093	ACUD-RURAL DAGUEY AJIES ARRIBA	430	X	X	X	X	X	X
20	PR0351023	SONADOR II	800	X	X	X	X	X	X
21	PR0364013	PERICHE	1100	X	X	X	X	X	X
22	PR0367013	ACUD. RURAL GUACIO	189	X	X	X	X	X	X
23	PR0367053	ACUEDUCTO RURAL GUADALUPE MARTI	81	X	N/A	X	X	X	X
24	PR0377023	SECTOR LAGUNA	100	X	N/A	X	X	X	X
25	PR0401024	GUILARTE HELECHALES	219	X	X	X	X	X	X
26	PR0401034	PELLEJAS	260	X	X	X	X	X	X
27	PR0401064	COMUNIDAD PALOMO	120	X	X	X	X	X	X
28	PR0401074	SECTOR LOS HERNANDEZ	240	X	X	X	X	X	X
29	PR0401144	LIMANI	150	X	X	X	X	X	X
30	PR0401234	GARZAS JUNCOS	460	X	X	X	X	X	X
31	PR0401284	JUAN GONZALEZ	500	X	X	X	X	X	X
32	PR0401294	ASOCIACION ACUEDUCTO REVENTON	212	X	X	X	X	X	X
33	PR0401364	CRUCERO	29	X	N/A	X	X	X	X
34	PR0422014	ASOCIACION RESIDENTE SAN DIEGO	300	X	X	X	X	X	X
35	PR0422094	COMUNIDAD MONTERIA	360	X	X	X	X	X	X
36	PR0431014	PELCHAS	120	X	N/A	X	X	X	X
37	PR0455054	FCA. GERALDO PAGAN	680	X	X	X	X	X	X
38	PR0455114	COM. SABANA	560	X	X	X	X	X	X
39	PR0455134	PELLEJAS-GALLERA I	34	X	X	X	X	X	X
40	PR0455164	PELLEJAS II	500	X	X	X	X	X	X
41	PR0455274	ACUEDUCTO TAITA	80	X	X	X	X	X	X
42	PR0455314	CORPORACION SALTOS PELLEJA	248	X	X	X	X	X	X
43	PR0455324	SANTO TOMAS DE AQUINO	131	X	X	X	X	X	X
44	PR0455334	COMUNIDAD LIMONES	450	N/A	X	X	X	X	X
45	PR0457064	ACUED. COMUNAL BO. RUCIO (ACBRI)	600	X	X	X	X	X	X
46	PR0458004	LAS MESAS	120	X	N/A	X	X	X	X
47	PR0458044	BO. MONTE LLANOS	316	X	X	X	X	X	X
48	PR0458194	ANON CARMELITA	800	X	N/A	X	X	X	X
49	PR0458264	ACD. COMUNAL RIO CHIQUITO	320	X	X	X	X	X	X
50	PR0458304	LA CARMELITA	38	X	N/A	X	X	X	X
51	PR0476134	VACAS III	500	X	X	X	X	X	X
52	PR0476154	VISTA ALEGRE	340	X	X	X	X	X	X
53	PR0476314	SIERRITA-CAONILLA	100	X	X	X	X	X	X

	PWSID	SYSTEM NAME	POP.	LEAD & COPPER	DISINFECTION BY PRODUCTS (DBP'S)	VOC's & SOC's	SECUNDARIES	RADIOLOGICS	INORGANICS
54	PR0478014	BO. RUBIAS	312	X	X	X	X	X	X
55	PR0478034	LA MONTANA	80	X	N/A	X	X	X	X
56	PR0478044	CERROTE	58	X	X	X	X	X	X
57	PR0478064	GUARAGUAO	420	X	X	X	X	X	X
58	PR0478094	MOGOTE	100	X	X	X	X	X	X
59	PR0505055	CUYON	461	X	X	X	X	X	X
60	PR0505075	ALGARROBO NUEVO	156	X	X	X	X	X	X
61	PR0510055	CANABON ABAJO	299	X	X	X	X	X	X
62	PR0510065	TABOR	432	X	X	X	X	X	X
63	PR0510095	ACUED. COM. BO. QUEBRADILLAS	1862	X	X	X	X	X	X
64	PR0510115	LOS MUCHOS	280	X	X	X	X	X	X
65	PR0510125	LA TIZA II	240	X	X	X	X	X	X
66	PR0510145	ACUED. RURAL PALMARITO CINTRON	720	X	X	X	X	X	X
67	PR0510165	COM. DOÑA MAYO (EL LLANO II)	253	X	X	X	X	X	X
68	PR0510195	HELECHAL-GUAYABO	720	X	X	X	X	X	X
69	PR0510215	COM. BARRANCAS CENTRO	620	X	X	X	X	X	X
70	PR0510225	ACUED. CANABON SECT. EL PARQUE	113	X	X	X	X	X	X
71	PR0518075	VECINOS COMUNIDAD LUIS LEBRON	193	X	X	X	X	X	X
72	PR0518105	ASOC. VILLAS GUAVATE	63	X	X	X	X	X	X
73	PR0518135	ACUED. BO. CEDRO	168	X	N/A	X	X	X	X
74	PR0521025	CARRASQUILLO	581	X	X	X	X	X	X
75	PR0521035	PELEGRIN SANTO	298	X	X	X	X	X	X
76	PR0521075	COM. AISLADA ALMIRANTE	286	X	X	X	X	X	X
77	PR0523055	COMUNIDAD MAISONET	745	X	X	X	X	X	X
78	PR0523095	CEDRITO	360	X	X	X	X	X	X
79	PR0549085	TALANTE	60	X	N/A	X	X	X	X
80	PR0549095	SISTEMA DE AGUA MATUYAS BAJO	88	X	N/A	X	X	X	X
81	PR0549115	Sistema Cruz Leon	30	X	N/A	X	X	X	X
82	PR0556015	MULAS	652	X	X	X	X	X	X
83	PR0556025	BO. REAL	522	X	X	X	X	X	X
84	PR0556035	BO. QUEBRADA ARRIBA	840	X	X	X	X	X	X
85	PR0556055	MAMEY	424	X	X	X	X	X	X
86	PR0556075	BO. JACABOA- HIGUERO	70	X	X	X	X	X	X
87	PR0556125	ACUEDUCTO MACHUCHAL	55	X	X	X	X	X	X
88	PR0556135	MULAS SECTOR SOFIA	53	X	X	X	X	X	X
89	PR0556145	MARIN, SECTOR BETANCOURT	53	X	X	X	X	X	X
90	PR0604016	LAS CORUJAS	800	X	X	X	X	X	X
91	PR0604036	COMUNIDAD RIVERA	500	X	X	X	X	X	X
92	PR0604046	MULITAS CENTRO	670	X	X	X	X	X	X
93	PR0604056	SECTOR TIZA	327	X	X	X	X	X	X
94	PR0604066	JUAN ASENCIO	745	X	X	X	X	X	X
95	PR0604076	COMUNIDAD-MADRIGUERA	476	X	X	X	X	X	X
96	PR0604086	BAYAMONCITO	536	X	X	X	X	X	X
97	PR0604176	ACUED. COMUNAL EL LLANO	342	X	X	X	X	X	X
98	PR0613016	COM. CASA DE PIEDRA	372	X	X	X	X	X	X
99	PR0613036	PARC. NUEVAS CAÑABONCITO ACUED	312	X	X	X	X	X	X
100	PR0613046	ACUED. RURAL TURABO ARRIBA	745	X	X	X	X	X	X
101	PR0613246	USUARIOS POZO PROFUNDO	193	X	X	X	X	X	X
102	PR0613296	LA UNION	321	X	X	X	X	X	X
103	PR0613366	ACUED. COM. SECTOR LA SIERRA	1430	X	X	X	X	X	X
104	PR0613376	BUENOS AIRES	154	X	X	X	X	X	X
105	PR0613426	EL MANANTIAL	128	X	X	X	X	X	X
106	PR0613446	POZO DE AGUA	530	X	X	X	X	X	X
107	PR0613466	COMUNIDAD VILLA VIGIA	30	N/A	N/A	X	X	X	X
108	PR0613486	HACIENDA DEL REY	143	X	X	X	X	X	X
109	PR0613506	ACUED. VILLAS DE ORO	119	X	X	X	X	X	X
110	PR0627016	JUAN DIEGO	103	X	N/A	X	X	X	X
111	PR0644076	LIJAS	596	X	X	X	X	X	X
112	PR0644086	COM. ASOMANTE	697	X	X	X	X	X	X
113	PR0644106	ACUEDUCTO RURAL ASOMANTE 2	1060	X	X	X	X	X	X
114	PR0644136	ACUED. RURAL MONTONES 4	223	X	X	X	X	X	X

	PWSID	SYSTEM NAME	POP.	LEAD & COPPER	DISINFECTION BY PRODUCTS (DBP'S)	VOC's & SOC's	SECUNDARIES	RADIOLOGICS	INORGANICS
115	PR0653056	ACUED. DE LA COM. EL DUQUE	172	X	N/A	X	X	X	X
116	PR0661046	BARCELONA	260	X	N/A	X	X	X	X
117	PR0666016	ASOC. VECINO SECTOR OQUENDO	253	X	X	X	X	X	X
118	PR0666036	LOS DIAZ	241	X	X	X	X	X	X
119	PR0666046	QUEMADO I SEC. LOS ORTIZ	286	X	X	X	X	X	X
120	PR0666056	LA CUCHILLA	400	X	X	X	X	X	X
121	PR0666066	ACUED.COMUNAL SEC. MANUEL DIAZ	357	X	X	X	X	X	X
122	PR0666076	QUEMADOS II SEC. VICENTE	283	X	X	X	X	X	X
123	PR0666086	CORPORACION SEC. CANTERA	53	X	X	X	X	X	X
124	PR0666096	COMUNIDAD SECTOR LOS GOMEZ	149	X	X	X	X	X	X
125	PR0666106	EL CERRO	149	X	X	X	X	X	X
126	PR0666126	ACUED. COM. EDEM	30	N/A	X	X	X	X	X
127	PR0666136	COMUNIDAD EMMANUELLI	74	X	X	X	X	X	X
128	PR0677016	ACUED. RURAL DE TEJAS	1892	X	X	X	X	X	X
129	PR0677066	SODOMA	566	X	X	X	X	X	X
130	PR0677076	ACUED. BO. GUAYABOTA	2268	X	X	X	X	X	X
131	PR0677146	CALABAZAS ARRIBA	1341	X	X	X	X	X	X
132	PR0677186	ASOCIACION VECINOS	125	X	X	X	X	X	X
133	PR0677196	ACUED. RURAL SECT. EL VEINTE	387	X	X	X	X	X	X
134	PR0677206	ACUE. JACANAS PIEDRAS BLANCA 2	512	X	X	X	X	X	X
135	PR0677216	JACANAS SUR	1080	X	X	X	X	X	X
136	PR0724027	MANA I	500	X	X	X	X	X	X
137	PR0724087	COPAR	1000	X	X	X	X	X	X
138	PR0724117	COM. ELADIO ANDREU	500	X	X	X	X	X	X
139	PR0724127	COMUNIDAD DIVISORIA	43	X	**X**	**X**	**X**	**X**	**X**
140	PR0724137	COMUNIDAD SECTOR LA RIVIERA	260	X	X	X	X	X	X
141	PR0724147	COMUNIDAD SANTANA	200	N/A	X	X	X	X	X
142	PR0724157	COM. MANA SECTOR FRANK LOZADA	200	N/A	X	X	X	X	X
143	PR0754067	ANONES CENTRO I	1800	N/A	X	X	X	X	X
144	PR0754077	FEIJO	460	N/A	X	X	X	X	X
145	PR0754097	LAS CRUCES	1200	N/A	X	X	X	X	X
146	PR0754127	ACUEDUCTO COMUNIDAD SAN JOSE	56	N/A	X	X	X	X	X
147	PR0604096	LAS TORRES ANDINO	144	X	X	X	X	X	X
148	PR0518145	ACUED. COM. BRISAS DEL TORITO	163	X	X	X	X	X	X

Attachment III-a: **EPA'S SPECIAL MONITORING**

Similar initiatives include the EPA's Special Monitoring. Throughout the years there has been certain EPA's special monitoring being undertaken for specific timeframe. The last one undertaken ended. Nevertheless, we have to point out that during this year EPA's monitoring was addressing the emergency resulting from the hurricanes Irma and María. Prior year's activities were referenced in the Performance Status Report FY 2018 submitted.

On a regular basis EPA undertakes a series of monitoring and assessments. During last year the monitoring undertaken was particularly of the "Unregulated Contaminants" to determine whether the unregulated parameters will become regulated parameter. Currently the Unregulated Contaminants Monitoring Rule 4 (UCMR4) is being undertaken. The purpose of the UCMR is to provide information or data on the occurrence of contaminants in the drinking water. This data is used to develop or make regulatory decisions for contaminants in the drinking water. For the undertaking of the UCMR4 the drinking water systems of Community "El sistema de agua": Com. Eladio Andreu (724117) in the municipality of Corozal was selected by USEPA to participate in the UCMR4. In this process DOH provides assistance to the systems and EPA by taking the samples. During the months of May thru August 2018 a total of eight (8) visits were undertaken to collect the samples. These were analyzed in laboratories selected by EPA which are in compliance with EPAS's regulation on this regard. The samples were analyzed for the following parameters cyanotoxins: Cylindrospermopsin, Anatoxin-a and total microcystins.

Throughout the years there has been certain EPA's special monitoring being undertaken for specific timeframe. We have to point out that after the hurricanes Irma and María EPA's monitoring was undertaken addressing the emergency.

During fiscal year 2019, personnel from the Center of Decease Control in Atlanta, Dr. Motria Caudill, provided DOH a summary and conclusions on the project on monitoring undertaken by EPA's personnel that she had the opportunity to evaluate. There were several key-findings as stated in the report, being the last one presented as follows: "Drinking water safety 6 months after Hurricane María was comparable to conditions reported during the year before the Hurricane." Following is the list of systems submitted to EPA as part of the special monitoring undertaken up to FY 2016.

EPA's SPECIAL MONITORING	
PWS ID	**New Systems Name**
556125	Acued. Machuchal
422104	Jaguey
666156	Santuario Nuestra Señora del Carmen

Systems with Detections during the PAS Initiative	
PWS ID	**Name**
306093	Acueducto Rural Daguey Ajíes Arriba
724027	Mana I
724147	Comunidad Santana
613506	Acued. Villas de Oro
613016	Casa de Piedra
422094	Comunidad Montería
458344	Estancia del Madrigal
604176	Acued. Comunal El Llano
644136	Acued. Rural Montones 4
247092	Monasterio Madre de Dios

We have to mention that during FY 2021 under the circuit riders' concept and partners, in coordination with EPA, EPA has been developing a project under contract with ERG and RCAP to provide assistance to approximately forty-five (45) systems, but initial help will be provided to twelve (12) systems.

During fiscal year 2021 and part of 2022 assistance was provided to the first and second group. The assistance to the systems on the third group is ongoing. DOH collaborated with EPA providing the information regarding compliance of the systems selected. During fiscal year 2022 these forty-five (45) systems were divided in four groups. However, it was determined that a total of nine systems in the fourth group needed to be replaced. As of June 30, 2022, a total of twenty-four systems have received assistance and for the third group of twelve systems, the assistance is ongoing. During this fiscal year 2022 DOH has kept EPA updated on the compliance status of those systems. Following is the list of the Non-PRASA systems participating in this project, presented by group.

No.	PWS ID	System Name	Municipality	Type	Population Served	TAP
1	PR0351023	Sonador II	San Sebastian	G	800	Juan Campos
2	PR0401234	Garzas Juncos	Adjuntas	G	460	Juan Campos
3	PR0455114	Sabana	Orocovis	G	560	Luis Melendez
4	PR0510125	La Tiza 2	Barranquitas	G	240	Ariel Rosa
5	PR0556125	Machuchal	Patillas	G	55	Juan Campos
6	PR0556145	Marin Betancourt	Patillas	G	53	Ariel Rosa
7	PR0604176	El Llano	Aguas Buenas	G	342	Ariel Rosa
8	PR0613106	Lozada Pozo Dulce	Caguas	G	506	Josefa Torres
9	PR0613256	Pinas II	Caguas	G	292	Josefa Torres
10	PR0613256	Pedro Calixto	Caguas	S	461	Carlos Velazquez
11	PR0724087	COPAR	Corozal	S	1,000	Carlos Velazquez
12	PR0754057	Anones Maya	Naranjito	G	1,750	Luis Melendez

No.	PWS ID	System Name	Municipality	Type	Population Served	TAP
1	PR0302053	Aislada Desarrollo	Aguada	G	440	Ariel Rosa
2	PR0458174	Servicio de Agua	Ponce	G/S	310	Ariel Rosa
3	PR0556035	Quebrada Arriba	Patillas	G/S	500	Ariel Rosa
4	PR0401374	Garzas Centro	Adjuntas	G	90	Carlos Velazquez
5	PR0422104	Jaguey	Coamo	G	171	Carlos Velazquez
6	PR0439054	Testimonio Mundial	Juana Diaz	G	220	Josefa Torres
7	PR0666086	Cantera	San Lorenzo	G	53	Josefa Torres
8	PR0302023	Jaguey Chiquito	Aguada	G	856	Juan Campos
9	PR0401384	Vegas Portuguez	Adjuntas	G	275	Juan Campos
10	PR0455324	Santo Tomas Aquino	Orocovis	G	131	Juan Campos
11	PR0306093	Ajies OCCA	Anasco	G	430	Luis Melendez
12	PR0455294	Saltos Cabra	Orocovis	G	500	Luis Melendez

No.	PWS ID	System Name	Municipality	Type	Population Served	TAP
1	PR0422084	Coamo Arriba	Coamo	G/spring	340	Josefa Torres
2	PR0455214	El Perico II	Orocovis	G	88	Ariel Rosa
3	PR0455234	Damian Arriba	Orocovis	G	320	Ariel Rosa
4	PR0458284	Pastillo Tibes	Ponce	G	420	Ariel Rosa
5	PR0476314	Sierrita Caonillas	Villalba	G	100	Juan Campos
6	PR0478064	Guaraguao	Yauco	S	326	Juan Campos
7	PR0510095	Quebradillas	Barranquitas	G	1,862	Juan Campos
8	PR0510145	Palmarito Cintron	Barranquitas	G	720	Josefa Torres
9	PR0556085	Apeadero	Patillas	S	320	Juan Campos
10	PR0556135	Mulas Sofia	Patillas	G	53	Ariel Rosa
11	PR0604086	Bayamoncito	Aguas Buenas	G	536	Josefa Torres
12	PR0644136	Montones 4	Las Piedras	G	223	Josefa Torres

X. APPENDICES

Appendix A: ACTIVITIES UNDERTAKEN BY YEAR FROM FY 2020 TO FY 2022 THAT DIRECTLY OR INDIRECTLY ARE RELATED TO THE CAPACITY DEVELOPMENT PROGRAM (CDP)

In accordance with the FY 2020 Work Plan, the following activities were undertaken and as it can be appreciated activities were completed and the corresponding outputs and outcomes were achieved and are detailed:

CAPACITY DEVELOPMENT PROGRAM			
Activity & *Timetable* FY 2019-20	**Deliverables**	**Measure of Success**	**Achievement**
Provide assistance to approximately 48 public water systems through the use of the circuit riders concept and expand the circuit riders project directed towards but not limited to: systems' compliance evaluation with the SDWA and regulations, technical, administrative and financial status evaluation for the identification of limiting factors, guidance and assistance in community organization, technical assistance and education for eliminating limiting factors, guidance and assistance in the search of external additional resources, provide training and assessment on public environmental health issues, undertake sanitary surveys. In order to undertake this activity, DOH will contract personnel or may execute a new contract/partnership (with prior entities providing the service) that will be using the Circuit Rider concept to cover new systems that were pending to be assisted with the last contract executed. Due to the cut-off this procedure was impaired and not	Inspections, technical, administrative, and financial status evaluation for the identification of problems / limiting factors, guidance and assistance in community organization, technical assistance and education for eliminating limiting factors, guidance and assistance in the search of external additional resources, provide training and assessment on public environmental health issues, provide training to the operators, using the Operators Check List and undertake sanitary surveys.	Number of visits/ inspections/ assistances. Number of trainings. Number of systems / assistances provided with the use of the Capacity Development Manual / CPE. Identification of external resources providers. Evaluation of compliance with technical, financial, and administrative Safe Drinking Water Act (SDWA) 1996 amendments requirements. Number of operators evaluated through the Operators Check List and operator's status. Number of adapted CPE's undertaken (systems compliance status and profile/assessment) Number action plans developed and	This activity was programed to be undertaken through the execution of a new contract/partnership (with prior entities providing the service) or by hiring/contracting personnel that were going to use the Circuit Rider concept to cover new systems that were pending to be assisted with the last contract executed, but this was not possible. Several factors impaired/limited this process and the contract execution: the fiscal situation / federal cut-off, the earthquakes and the prevailing pandemic, and the latest flooding of July 2020.

CAPACITY DEVELOPMENT PROGRAM			
Activity & *Timetable* FY 2019-20	**Deliverables**	**Measure of Success**	**Achievement**
completed. It is the expectation of DOH to complete this process during this year. *Until contract ends*		submitted. Number sanitary surveys undertaken.	
Provide assistance to authorized entities conducting comprehensive performance evaluations (CPE's), including revisions of CPE's. *Upon request*	CPE	Number of systems assisted.	Assistance was provided to other entities that had the possibility of undertaking them although CEPs were not performed by this Department. DOH continues in a coordinated effort with other government and NGO's including several new emerging entities related to the new challenges and undertook assessment of systems' infrastructure and compliance conditions as part of the remaining resiliency activities and the recovery activities for managing the new threats of the pandemic the earthquakes and the flooding. Due to the above-mentioned prevailing emergencies (health and environmental) during FY 2020, DOH was not able to enter into a new contract, thus, no CPEs were performed**.**
Evaluate and assess proposed DWSRF funding eligibility for proposed improvement / rehabilitation projects *Upon request/ on going*	A review of planning and design documents/studies, completed loan request application	Number of projects funded	No small systems proposal for project was evaluated.
Evaluate proposed Commonwealth legislation associated to small systems. *Upon request*	Issue comments	Amendments to Legislation where applicable	Although one legislative project was evaluated by DOH, it was not directly related to small drinking water systems.
Assist the PWSS program in conducting small systems sanitary surveys. *Ongoing*	On site assistance	Number of sanitary surveys	A total of seventeen (17) sanitary surveys were undertaken up to March 2020 when the lock-down came into effect due to the pandemic

CAPACITY DEVELOPMENT PROGRAM			
Activity & *Timetable* FY 2019-20	**Deliverables**	**Measure of Success**	**Achievement**
Coordinate with and among non-profit private entities providing services to small systems in order to increase benefits and maximize efforts. *Ongoing*	Meetings and activities	Number of systems benefited	Coordination was undertaken. Direct assistance was provided to approximately one hundred seventy-four (174) systems. Direct assistance was provided to approximately one hundred and seven (107) systems.
Continue the implementation of the PR Technical Assistance Support (TAS) program in order to carry out assistance initiatives in concert with other Commonwealth agencies. *Ongoing*	Review of studies, planning documents, site inspections / meetings	Reduction in violations, awareness of funding programs	One hundred forty-six (146) systems in Circuit Riders projects were advised on funding availability and compliance activities as of March 2020.
Assist the PWSS program in performing field inspections of small systems. *Ongoing*	Inspections, systems' assessments, technical education, and training	Number of visits / inspections	Thirty-one (31) inspections reported as of as of August 2020.
Collaborate with the PWSS program in enforcement and compliance activities, including, assisting, and guiding small systems in their operation and management. *Ongoing*	On-site visits and assistance, monthly reports. Revise monitoring report on bacteriology, residual chlorine, and turbidity.	Number of visits / assistances / evaluations	Twenty (20) reported as of September 30, 2020
Assess existing systems and possibly additional new systems in the organization process, among other assistances, in order to conduct them towards compliance with Commonwealth, federal laws and regulations. *Ongoing - Monthly / bimonthly*	On-site assistance	Number of site visits	One hundred forty-six (146) systems were assisted.
Continue providing technical assistance to communities under circuit riders previously established by DOH and/or public, private and non-profit entities to avail small systems' compliance. *Ongoing - Monthly /*	On-site technical education, training, and assistance to systems	Number of site visits (including phone calls /orientations)	Approximately one hundred sixteen (116) systems were assisted as of September 2020**.**

CAPACITY DEVELOPMENT PROGRAM			
Activity & *Timetable* FY 2019-20	**Deliverables**	**Measure of Success**	**Achievement**
bimonthly			
Evaluate all systems that have received technical assistance through different approaches in order to determine the need for additional assistance and the type of assistance that they may need, including the indirect assistances by other entities that have been channeled through DOH. DOH has provided and will continue providing support in the selection of systems that will be receiving or participating in trainings, as well as the areas which the trainings should emphasize or cover. *Ongoing*	Identification and tabulation of assistances by provider and type of assistance	Categorization and number of assistances provided. Identification of systems that could receive assistance by other providers.	Three (3) entities requested assistance. During the last two years One hundred forty-six (146) systems were evaluated for additional assistance and it will be provided through the Second PAS. This Second PAS was extended throughout 2019 and including 2020 due to the earthquakes and the pandemic.
Continued providing assistance to government instrumentalities in the sustainability initiative for community water systems emphasizing water, energy and natural resources. *Ongoing*	Enforcement of federal drinking water regulations, monitoring plan, operational guidelines, training, workshops, inspections, and laboratory sampling to systems	Number of systems attaining sustainability Number of training, workshops, inspections to systems	This initiative ended in 2016. Notwithstanding, under new initiatives with a series of government and non-government organizations (NGOs), DOH continues having an active role in providing assistance. Currently, assistance and coordination is undertaken with the "Multisectoral Committee for the Organization and Compliance of the Community Aqueducts", to complete certain resiliency activities that were pending. In February 2020 DOH participated in a meeting undertaken with EPA and other local and federal entities in order to discuss possible and pending project related to installing drinking water equipment in schools serving as shelters during emergencies as well as to

CAPACITY DEVELOPMENT PROGRAM			
Activity & *Timetable* FY 2019-20	**Deliverables**	**Measure of Success**	**Achievement**
			identify other shelter alternatives due to the recent earthquakes. The Fire Department, PRASA and other entities attending the earthquake emergency will participate in this project assembling the equipment and filing the water tanks, respectively.
Assist the PWSS program in the coordination/ reactivation and/or establishment of a recommended Interagency/Multisec-toral Coordinating Committee to address EPA's OIG audit report recommendation. *Ongoing*	Meetings of the Committee Identification of efforts for compliance improvements of small systems	Improve/increase number of systems in compliance	During FY 2020, at least one meeting was undertaken during the past fiscal year as a follow-up of the assistances provided by the Committee to the communities.
Assist the PWSS program in the development of a compliance assistance resource list.	Identification of compliance assistance resources	Development of a list that includes a number of resources where certified drinking water laboratories are considered	*Ongoing*

Output, Outcomes and Achievements

In general, in terms of the goals established, the anticipated Outputs and Outcomes were achieved during FY 2019-20:

OUTPUTS - FISCAL YEAR 2019-20	OUTCOMES/ACHIEVEMENT
Validate Comprehensive Performance Evaluations (CPE's) methodology for approximately 31 small systems	The evaluation of interim and final compliance profiles of 31 new systems in order to provide assistance for promoting and attaining compliance was not possible using the CPE because the contract for undertaking these activities was not executed due to the federal cut-off and lack of local funds. During FY 2020 DOH was not able to enter into a new contract, thus, no CPEs were performed as indicated due to the limitations imposed by the financial conditions, the cut off, the environmental and

OUTPUTS - FISCAL YEAR 2019-20	OUTCOMES/ACHIEVEMENT
	health threats of the earthquakes, flooding and the coronavirus.
Continue providing orientation on funds availability to approximately 50 small systems through site visits, meetings, written communications or telephone calls.	Increase knowledge of and compliance with the requirements of the SDWA. As of August 2020, at least one hundred and seven (107) systems were visited, and general assistance was provided.
Attend seminars and workshops (1) as part of the training to DWSRF personnel	Stay current with information related to new requirements of the SDWA. All personnel attended to at least 3 trainings and another workshop offered by EPA during the first quarter of FY 2020. During FY 2020 there were others online. Number of training vary by person.
Support PWSS program in the inspection of approximately 50 small systems	Assist systems and communities in determining and assessing compliance limiting factors in order to promote compliance. Eighty-three (83) inspections were undertaken as of August 2020.
Guide approximately 300 small systems in the preparation of their Consumer Confident Reports (CCR's)	Increase the knowledge of systems in an effort to reduce violations. As of August 2020, two hundred forty-eight (248) were assisted.
Undertake approximately 31 small systems sanitary surveys	Educate operators in an effort to promote public health, outline necessary improvements and reduce non-compliance. General assistance was provided to systems' operators. The activities planned under contract for training and licensing in fiscal years 2018 through 2020 - three years now -were not possible because the contract for undertaking them was not executed due to the cut off, the environmental and health threats of the earthquakes, and the coronavirus pandemic been now or currently prevailing as the general situation of the Island. As of August 2020, thirty-nine (39) sanitary surveys were undertaken for Non-PRASA.
Identify services necessary for compliance, based on the revised CPE	Improve compliance of systems that have CPE's. General assistance was provided although the full activity planned under contract was not possible due to the reason previously stated.
Educate small systems on DWSRF program requirements, compliance actions, fund requests and systems evaluations	Increase systems knowledge regarding compliance requirements. Approximately one hundred seven (107) systems were assisted in general in regard to compliance and DWSRF program requirements.

OUTPUTS - FISCAL YEAR 2019-20	OUTCOMES/ACHIEVEMENT
Assess approximately 31 new systems in the organization process	Conduct approximately 31 systems towards compliance with Commonwealth and federal laws and regulations. The assistance intended was not possible because the contract for undertaking these activities was not executed due to the federal cut-off, lack of local funds and the prevailing conditions associated to the earthquakes and the current coronavirus pandemic. See Introduction for more details. Nevertheless, during FY 2019, one hundred forty-six (146) systems were assisted in general in regard to compliance and their assistance through the PAS was extended through 2020.

In accordance with the FY 2021 Work Plan, the following activities were undertaken and as it can be appreciated, as of September 30, 2021, activities were completed and the corresponding outputs and outcomes were achieved and are detailed:

CAPACITY DEVELOPMENT PROGRAM			
Activity & Timetable FY 2020-21	**Deliverables**	**Measure of Success**	**Achievement**
Provide assistance to approximately 50 public water systems. Although the assistance was provided to the systems it was not through the use of the circuit riders concept and expand the circuit riders project directed towards but not limited to systems' compliance evaluation with the SDWA and regulations, technical, administrative and financial status evaluation for the identification of limiting factors, guidance and assistance in community organization, technical assistance and education for eliminating limiting factors, guidance and assistance in the search of external additional resources, provide training and assessment on public environmental health issues, provide training to the operators, using the Operators Check List and undertake	Systems' inspections, technical, administrative, and financial status evaluation for the identification of problems / limiting factors, guidance and assistance in community organization, technical assistance, and education for eliminating limiting factors, guidance and assistance in the search of external additional resources, provide training and assessment on public environmental health issues, provide training to the operators, using the Operators Check List and undertake	Number of visits/ inspections/ assistances. Number of trainings. Number of systems / assistances provided with the use of the Capacity Development Manual / CPE. Identification of external resources providers. Evaluation of compliance with technical, financial, and administrative Safe Drinking Water Act (SDWA) 1996 amendments requirements. Number of operators	This activity was programed to be undertaken through the execution of a new contract/partnership (with prior entities providing the service) or by hiring/contracting personnel that were going to use the Circuit Rider concept to cover new systems that were pending to be assisted with the last contract executed, but this was not possible. During FY 2020, several factors impaired/limited this process and the contract execution: the fiscal situation / federal cut-off, the earthquakes the coronavirus pandemic, and the flooding 2020. During 2021 we continue having impairing factors such as precarious financial situation, the pandemic and the earthquakes that impair the execution of the contract.

CAPACITY DEVELOPMENT PROGRAM			
Activity & Timetable FY 2020-21	**Deliverables**	**Measure of Success**	**Achievement**
issues, undertake sanitary surveys. Until contract ends.	sanitary surveys.	evaluated through the Operators Check List and operator's status. Number of adapted CPE's undertaken (systems compliance status and profile/assessment) Number action plans developed and submitted Number sanitary surveys undertaken	
Provided assistance to authorized entities conducting comprehensive performance evaluations (CPE's), including revisions of CPE's. *Upon request*	CPE	Number of systems assisted.	Assistance was provided to other entities that had the possibility of undertaking them although CPE's were not performed by this Department. DOH continues in a coordinated effort with other government and NGO's including several new emerging entities related to the new challenges and undertook assessment of systems' infrastructure and compliance conditions as part of the remaining resiliency activities and the recovery activities for managing the new threats of the pandemic the earthquakes and the flooding. Due to the above-mentioned prevailing emergencies (health and environmental) during FY 2021 DOH was not able to enter into a new contract, and no CPEs were performed. Only two (2) small systems adapted CPE were undertaken under the new pilot project.
Evaluate and assess proposed DWSRF funding	A review of planning and design	Number of projects funded	No small systems proposal for project was *received*

CAPACITY DEVELOPMENT PROGRAM			
Activity & Timetable FY 2020-21	**Deliverables**	**Measure of Success**	**Achievement**
eligibility for new proposed improvement / rehabilitation projects *Upon request/ on going*	documents/studies, completed loan request application		*/evaluated.*
Evaluate proposed Common-wealth legislation associated to small systems. *Upon request*	Issue comments	Amendments to Legislation where applicable	One legislative project was evaluated by DOH.
Assist the PWSS program in conducting small systems sanitary surveys. *Ongoing*	On site assistance	Number of sanitary surveys	A total of thirty-eight (38) sanitary surveys were undertaken.
Coordinate with and among non-profit private entities providing services to small systems in order to increase benefits and maximize efforts. *Ongoing*	Meetings and activities	Number of systems benefited	Coordination was undertaken. Direct assistance was provided to approximately one hundred and five (105) systems.
Continue the implementation of the PR Technical Assistance Support (TAS) program in order to carry out assistance initiatives in concert with other Commonwealth agencies. *Ongoing*	Review of studies, planning documents, site inspections / meetings	Reduction in violations, awareness of funding programs	One hundred forty-eight (148) systems in Circuit Riders projects were advised on funding availability and compliance activities.
Assist the PWSS program in performing field inspections of small systems. *Ongoing*	Inspections, systems' assessments, tech-nical education, and training	Number of visits / inspections	Fifty-one (51) inspections reported.
Collaborate with the PWSS program in enforcement and compliance activities, including, assisting, and guiding small systems in their operation and management. *Ongoing*	On-site visits and assistance, monthly reports. Revise monitoring report on bacteriology, residual chlorine, and turbidity.	Number of visits / assistances / evaluations	One hundred eighty-one (181) enforcement / compliance actions and 1,676 follow-up activities, including, assisting, and guiding small systems.
Assess existing systems and possibly additional new systems in the organization process, among other assistances, in order to conduct them towards compliance with Commonwealth, federal laws and regulations.	On-site assistance	Number of site visits	One hundred forty-eight (148) systems were assisted.

CAPACITY DEVELOPMENT PROGRAM			
Activity & Timetable FY 2020-21	**Deliverables**	**Measure of Success**	**Achievement**
Ongoing - Monthly / bimonthly			
Continue providing technical assistance to communities under circuit riders previously established by DOH and/or public, private and non-profit entities to avail small systems' compliance *Ongoing - Monthly / bimonthly*	On-site technical education, training, and assistance to systems	Number of site visits (including phone calls /orientations)	Approximately one hundred fifty (150 systems were assisted as of September 2021.
Evaluate all systems that have received technical assistance through different approaches in order to determine the need for additional assistance and the type of assistance that they may need, including the indirect assistances by other entities that have been channeled through DOH. DOH has provided and will continue providing support in the selection of systems that will be receiving or participating in trainings, as well as the areas which the trainings should emphasize or cover. *Ongoing*	Identification and tabulation of assistances by provider and type of assistance	Categorization and number of assistances provided. Identification of systems that could receive assistance by other providers.	Also, assistance was provided through the Second PAS. This Second PAS was extended throughout 2019 and 2020 including 2021 due to the earthquakes and the pandemic. Three (3) entities requested assistance during fiscal year 2021 two more systems received additional assistance provided through the Second PAS for a total of one hundred forty-eight (148) assisted. This Second PAS was extended throughout 2019 and including 2020-2021 due to the earthquakes and the pandemic.
Continued providing assistance to government instrumentalities in the sustainability initiative. *Ongoing*	Enforcement of federal drinking water regulations, monitoring plan, operational guidelines, training, workshops, inspections, and laboratory sampling to systems	Number of systems attaining sustainability Number of trainings, workshops, inspections to systems	This initiative ended in 2016. Notwithstanding, under new initiatives with a series of government and non-government organizations (NGOs), DOH continues having an active role in providing assistance. Currently, assistance and coordination is undertaken with the Water Coalition,

CAPACITY DEVELOPMENT PROGRAM			
Activity & Timetable FY 2020-21	**Deliverables**	**Measure of Success**	**Achievement**
			previously known as the "Multisectoral Committee for the Organization and Compliance of the Community Aqueducts", to complete certain resiliency activities that were pending. In February 2020 DOH participated in a meeting undertaken with EPA and other local and federal entities in order to discuss possible and pending project related to installing drinking water equipment in schools serving as shelters during emergencies as well as to identify other shelter alternatives due to the recent earthquakes. The Fire Department, PRASA and other entities attending the earthquake emergency will participate in this project assembling the equipment and filing the water tanks, respectively. In 2021 assistance was also provided through and in coordination with Water coalition to give continuity on previous actions and regarding to the corona virus pandemic and the prevailing earthquakes.
Assist the PWSS program in the coordination/ reactivation and / or establishment of a recommended Inter-agency/Multisectoral Coordinating Committee to address EPA's OIG audit report recommendation *Ongoing*	Meetings of the Committee Identification of efforts for compliance improvements of small systems	Improve/increase **of** number of systems in compliance	It is important to emphasize that, in order to avoid duplicity, certain activities of this Committee have been undertaken since FY 2020 by the Water Coalition. At least one meeting was undertaken during the past fiscal year as a follow-up of the assistances provided by the Water Coalition to the communities. Most of these organizations continued under the leadership of the Water

CAPACITY DEVELOPMENT PROGRAM			
Activity & Timetable FY 2020-21	**Deliverables**	**Measure of Success**	**Achievement**
			Coalition.
Assist the PWSS program in the development of a compliance assistance resource list. On*going*	Identification of compliance assistance resources	Development of a list that includes a number of resources where certified drinking water laboratories are considered	During FY 2021 continued collaborating with the PWSS in the development of the list.

In general, in terms of the goals established, the anticipated Outputs and Outcomes were achieved during fiscal year 2020-21:

OUTPUTS - FISCAL YEAR 2020-21	OUTCOMES/ACHIEVEMENT
Validate Comprehensive Performance Evaluations (CPE's) methodology for approximately 50 small systems	The evaluation of interim and final compliance profiles of 31 new systems in order to provide assistance for promoting and attaining compliance was not possible using the CPE because the contract for undertaking these activities was not executed due to the federal cut-off and lack of local funds. During FYS 2020 and 2021 DOH was not able to enter into a new contract, thus, no CPEs were performed as indicated due to the limitations imposed by the financial conditions, the cut off, the environmental and health threats of the earthquakes, and the coronavirus pandemic.
Continue providing orientation on funds availability to approximately 50 small systems through site visits, meetings, written communications, or telephone calls.	Increase knowledge of and compliance with the requirements of the SDWA. During FY 2021, at least one hundred and five (105) were visited and general assistance was provided.
Attend seminars and workshops (1) as part of the training to DWSRF personnel	Stay current with information related to new requirements of the SDWA. All personnel attended to at least 3 trainings and another workshop offered by EPA during FY 2021. During FY 2021 there were others online.

OUTPUTS - FISCAL YEAR 2020-21	OUTCOMES/ACHIEVEMENT
	Number of trainings vary by person.
Support PWSS program in the inspection of approximately 50 small systems	Assist systems and communities in determining and assessing compliance limiting factors in order to promote compliance. Fifty-one (51) inspections were undertaken.
Guide approximately 300 small systems in the preparation of their Consumer Confident Reports (CCR's)	Increase the knowledge of systems in an effort to reduce violations. Two hundred thirty-nine (239) were assisted in 2021.
Undertake approximately 31 small systems sanitary surveys	Thirty-eight (38) sanitary surveys were undertaken for Non-PRASA systems.
Identify services necessary for compliance, based on the revised CPE	Improve compliance of systems that have CPE's. General assistance was provided although the full activity planned under contract was not possible due to the reason previously stated.
Educate small systems on DWSRF program requirements, compliance actions, fund requests and systems evaluations	Increase systems knowledge regarding compliance requirements. Approximately one hundred and five (105) systems were assisted in general in regard to compliance and DWSRF program requirements.
Assess approximately fifty (50) new systems in the organization process	During FY 2020 the assistance intended was not possible because the contract for undertaking these activities was not executed due to the federal cut-off, lack of local funds and the prevailing conditions associated to the earthquakes and the current coronavirus pandemic. See Introduction for more details. Nevertheless, during FY 2021, one hundred forty-eight (148) systems were assisted in general in regard to compliance thus including organization.

In accordance with the FY 2021-22 Work Plan, the following activities continued in progress thus, information concerning their status and achievements is provided as of September 2022:

CAPACITY DEVELOPMENT PROGRAM				
FY 2021-22 Activity & *Timetable*	**Resp Party**	**Deliverables**	**Measure of Success**	**ACHIEVEMENT**
Provide assistance to approximately 50 public water systems through the use of the circuit riders concept and expand the circuit riders project directed towards but not limited to: systems' compliance evaluation with the SDWA and regulations, guidance and assistance in community organization, technical assistance and education for eliminating limiting factors, guidance and assistance in the search of external additional resources, provide training and assessment on public environmental health issues, undertake sanitary surveys where applicable. *Until contract expiration*	DOH/ RCAP	Systems inspections, technical, administrative and financial status evaluation for the identification of problems/limiting factors, guidance and assistance in community organization, technical assistance and education for eliminating limiting factors, guidance and assistance in the search of external additional resources, provide training and assessment on public environmental health issues, provide training to the operators, using the Operators Check List and undertake sanitary surveys.	Number of visits/ inspections/ assistances. Number of trainings. Number of systems / assistances provided with the use of the Capacity Development Manual / CPE. Identification of external resources providers. Evaluation of compliance with technical, financial, and administrative Safe Drinking Water Act (SDWA) 1996 amendments requirements. Number of operators evaluated through the Operators Check List and operator's status. Number of adapted CPE's undertaken (systems compliance status and profile/assessment) Number action plans developed and submitted. Number sanitary surveys undertaken.	During 2022 as well as during the previous two years we continue having impairing factors such as precarious financial situation, the pandemic and the earthquakes that impair the execution of a dedicated contract with a public private partnership for this exclusive purpose. As of August 2021, the execution of the new contract with a public private partnership has not been possible due to the fiscal situation. Nevertheless, assistance was provided to the systems under individual professional services contract using of the circuit rider's concept. Although almost five years have passed after the hurricanes that hit the Island and all systems have been assisted, still there are resiliency activities, where not only funding but infrastructure, treatment aspects

CAPACITY DEVELOPMENT PROGRAM				
FY 2021-22 Activity & *Timetable*	**Resp Party**	**Deliverables**	**Measure of Success**	**ACHIEVEMENT**
				and compliance issues were addressed. There are still minor activities that were undertaken during this fiscal year. Only a pilot project contract related to monitoring surveillance was executed and certain limited related activities were undertaken.
Provide assistance to authorized entities conducting comprehensive performance evaluations (CPE's), including revisions of CPE's. *Upon request*	DOH	CPE	Number of systems assisted.	Due to the prevailing emergencies (health and environmental) during FY 2022 DOH was not able to enter into a new public private contract dedicated exclusively for undertaking CPEs. Nevertheless, DOH in a coordinated effort with other Non-Government Organizations (NGO's) undertook assessment of systems' infrastructure and compliance conditions as part of the remaining resiliency activities and the

CAPACITY DEVELOPMENT PROGRAM				
FY 2021-22 Activity & *Timetable*	**Resp Party**	**Deliverables**	**Measure of Success**	**ACHIEVEMENT**
				recovery activities for managing the new threats of the pandemic the earthquakes and the flooding. Due to the above-mentioned prevailing emergencies (health and environmental) during FY 2021, DOH was not able to enter into a new contract with a private entity dedicated exclusively to undertaking CPEs. Thus, under individual contract only two CPEs were performed.
Evaluate and assess proposed DWSRF funding eligibility for new proposed improvement/rehabilitation projects. *Upon request / on going*	DOH	A review of planning and design documents/studies, completed loan request application	Number of projects funded	No small systems proposal for projects was received or evaluated although general information was provided. Nevertheless, DOH continued providing orientation on funds availability to systems through site visits, meetings, written communications, or telephone calls. Increase knowledge of and compliance with the

CAPACITY DEVELOPMENT PROGRAM				
FY 2021-22 Activity & *Timetable*	**Resp Party**	**Deliverables**	**Measure of Success**	**ACHIEVEMENT**
				requirements of the SDWA. As of August 2022, at least one hundred and five (105) systems were visited, and general assistance was provided.
Evaluate proposed Common-wealth legislation associated to small systems. *Upon request*	DOH	Issue comments	Amendments to Legislation where applicable	Two (2) legislative projects were evaluated by DOH directly related to small drinking water systems.
Assist the PWSS program in conducting small systems sanitary surveys. *On going*	DOH	On site assistance	Number of sanitary surveys	Assisted the PWSS program in conducting Non-PRASA systems sanitary surveys. A total of thirty-nine (39) sanitary surveys were undertaken as of September 2022.
Coordinate with and among non-profit private entities providing services to small systems in order to increase benefits and maximize efforts. *On going*	DOH/ non-profit private entities	Meetings and activities	Number of systems benefited	Coordination was undertaken. Direct assistance was provided to approximately one hundred and five (105) systems.
Continue the implementation of the PR Technical Assistance Support (TAS) program in order to carry out assistance initiatives in concert with other Commonwealth agencies. *On going*	DOH	Review of studies, planning documents, site inspections / meetings	Reduction in violations, awareness of funding programs	Systems in Circuit Riders projects were advised on funding availability and compliance activities. Two hundred thirty-nine (239) systems in Circuit Riders projects were advised on funding

CAPACITY DEVELOPMENT PROGRAM				
FY 2021-22 Activity & *Timetable*	**Resp Party**	**Deliverables**	**Measure of Success**	**ACHIEVEMENT**
				availability and compliance activities as of September 2022.
Assist the PWSS program in performing field inspections of small systems. *On going*	DOH	Inspections, systems' assessments, technical education and training	Number of visits / inspections	Twenty (20) inspections reported as of September 2022.
Collaborate with the PWSS program in enforcement and compliance activities, including, assisting and guiding small systems in their operation and management. *On going*	DOH	On-site visits and assistance, monthly reports. Revise monitoring report on bacteriology, residual chlorine, and turbidity.	Number of visits / assistances / evaluations	Collaborated with the PWSS program in 271 enforcement/compliance actions and 995 follow-up activities, including, assisting, and guiding small systems as of September 2022.
Assess new systems in the organization process in order to conduct them towards compliance with Commonwealth, federal laws and regulations and possibly additional new systems. *On going Monthly / bi-monthly*	DOH/ Circuit Riders	On-site assistance	Number of site visits	Two hundred thirty-nine (239) systems were assisted.
Continue providing technical assistance to communities under circuit riders previously established by DOH and/or public, private and non-profit entities to avail small systems' compliance. *On going Monthly / bi-monthly*	DOH/ Circuit Riders	On-site technical education, training and assistance to systems	Number of site visits (including phone calls /orientations)	Two hundred thirty-nine (239) systems were assisted.
Evaluate all systems that have received technical assistance through different approaches in order to determine the need for additional assistance and the type of assistance that they may need, including the indirect assistances by other entities that have been channeled through DOH. DOH has provided and will	DOH/ Finance Center	Identification and tabulation of assistances by provider and type of assistance	Categorization and number of assistances provided. Identification of systems that could receive assistance by other providers.	Several entities requested assistance. One hundred forty-eight (148) systems were evaluated for additional assistance which will be provided through the

CAPACITY DEVELOPMENT PROGRAM				
FY 2021-22 Activity & *Timetable*	**Resp Party**	**Deliverables**	**Measure of Success**	**ACHIEVEMENT**
continue providing support in the selection of systems that will be receiving or participating in trainings, as well as the areas which the trainings should emphasize or cover. *On going*				Second PAS. This Second PAS was extended throughout 2019 and including 2020-2021 due to the earthquakes and the pandemic. During fiscal year 2022 DOH provided administrative assistance for the revision, evaluation and approval of PRASA's payment to the Environmental Quality Laboratories, Inc (EQLABS) of one (1) invoice in the total amount of $7,474.00 through letter dated December 22, 2021. This project ended in FY 2021.
Continue providing assistance to government instrumentalities in the small systems sustainability initiative. *On going*	DOH/ Gov. agencies	Enforcement of federal drinking water regulations, monitoring plan, operational guidelines, training, workshops, inspections, and laboratory sampling to systems	Number of systems attaining sustainability Number of trainings, workshops, inspections to systems	This initiative ended in 2016. Nevertheless, under new initiatives with a series of govern-ment and non-government organizations (NGOs), DOH continues having an active role in providing assistance throughout 2022 notwithstanding the present and on-going

CAPACITY DEVELOPMENT PROGRAM				
FY 2021-22 Activity & *Timetable*	**Resp Party**	**Deliverables**	**Measure of Success**	**ACHIEVEMENT**
				challenges.
Assist the PWSS program in the coordination/reactivation and / or establishment of a recommended Interagency Coordinating Committee to address EPA's OIG audit report recommendation. *On going*	DOH/ EPA	Meetings of the Committee Identification of efforts for compliance improvements of small systems	Improve/increase number of systems in compliance	Three meetings were attended during this fiscal year as a follow-up of the assistances provided by the Water Coalition to the communities. It is important to emphasize that, in order to avoid duplicity, certain activities of this Committee have been undertaken since FY 2020 by the Water Coalition.
Assist the PWSS program in the development of a compliance assistance resource list. *On going*	DOH/ EPA	Identification of compliance assistance resources	Development of a list that includes a number of resources where certified drinking water laboratories are considered	During FY 2022 continued collaborating with the PWSS in the development and update of the list. This list is a dynamic one that is subject to changes every moment these are provided.

In general, in terms of the goals established, the anticipated Outputs and Outcomes were achieved during FY 2021-22:

OUTPUT - FISCAL YEAR 2021-22	OUTCOME – ACHIEVEMENT
Validate Comprehensive Performance Evaluations (CPE's) methodology for approximately 50 small systems	Evaluate interim and final compliance profiles of approximately 50 systems in order to provide assistance for promoting and attaining compliance was not possible using the CPE because the contract for undertaking these activities was not executed due to the federal cut-off and lack of local funds. During FY 2020 DOH

OUTPUT - FISCAL YEAR 2021-22	OUTCOME – ACHIEVEMENT
	was not able to enter into a new contract, thus, no CPEs were performed as indicated due to the limitations imposed by the financial conditions, the cut off, the environmental and health threats of the earthquakes, and the coronavirus pandemic. During 2021 and 2022 only adapted CPEs were undertaken as part of the pilot project, for a total of sixty (68) during both years.
Continue providing orientation on funds availability to approximately 50 small systems through site visits, meetings, written communications, or telephone calls.	Increase knowledge of and compliance with the requirements of the SDWA. As of September 2022, at least one hundred and five (105) were visited and general assistance was provided.
Attend seminars and workshops (1) as part of the training to DWSRF personnel	Stay current with information related to new requirements of the SDWA. All personnel attended to approximately thirty (30) trainings / workshop. Number of trainings vary by person.
Support PWSS program in the inspection of approximately 50 small systems	Assist systems and communities in determining and assessing compliance limiting factors in order to promote compliance. Fifty-seven (57) inspections were undertaken as of September 2022.
Guide approximately 300 small systems in the preparation of their Consumer Confident Reports (CCR's)	Increase the knowledge of systems in an effort to reduce violations. Increase the knowledge of systems in an effort to reduce violations. Two hundred thirty-nine (239) were assisted in 2022.
Undertake approximately 50 small systems sanitary surveys	Educate operators in an effort to promote public health, outline necessary improvements and reduce non-compliance. As of September 2022, thirty-six (36) sanitary surveys were undertaken for Non-PRASA systems. Serious delays in the development of the pilot project were experimented due to personnel turnover, the Covid pandemic and the recent hit of hurricane Fiona. We cannot disregard the collateral results of all this such as the severe power outages that are constant prolonged and recurrent.
Identify services necessary for compliance, based on the revised CPE	Improve compliance of systems that have CPE's. General assistance was provided although the full activity planned under contract was not possible due to the reason previously stated.
Educate small systems on DWSRF program requirements, compliance actions, fund requests and systems evaluations	Increase systems knowledge regarding compliance requirements. Approximately one hundred and five (105) systems were assisted in general in regard to compliance and DWSRF program requirements.

OUTPUT - FISCAL YEAR 2021-22	OUTCOME – ACHIEVEMENT
Assess approximately 50 systems in the organization process	Conduct approximately 50 systems towards compliance with Commonwealth and federal laws and regulations. During FY 2021, and 2022 two hundred thirty-nine (239) systems were assisted in general in regard to compliance thus including organization.

Appendix B: ACTIVITIES UNDERTAKEN UNDER THE OPERATOR CERTIFICATION PROGRAM (OCP) BY YEAR FROM FY 2020 TO FY 2022 THAT DIRECTLY OR INDIRECTLY ARE RELATED TO THE CAPACITY DEVELOPMENT PROGRAM.

In summary, during FFY 2020 DOH was able to undertake all the following activities under the Operator Certification Program to ensure that Drinking Water Treatment Systems and/or Plants have a certified operator or have an operator under the direct supervision of a certified operator:

OPERATOR CERTIFICATION PROGRAM ACTIVITIES – FY 2020				
Activity	**Deliverables**	**Measure of Success**	**Timetable**	**Achievement**
Provide assistance to approximately 50 public water systems through the use of the circuit riders concept and expand the circuit riders project directed towards but not limited to: systems' compliance evaluation with the SDWA and regulations, technical, administrative and financial status evaluation for the identification of limiting factors, guidance and assistance in community organization, technical assistance and education for eliminating limiting factors, guidance and assistance in the search of external additional resources, provide training and assessment on public environmental health issues, undertake sanitary surveys. In order to undertake this activity, DOH will contract personnel or may execute a new contract/partnership (with prior entities providing the service) that will be using the Circuit Rider concept to cover new systems that were pending to be assisted with the last contract executed. Due to the cut-off this procedure was impaired and not completed. It is the expectation of DOH to complete this process during this year.	Inspections, technical, administrative and financial status evaluation for the identification of problems / limiting factors, guidance and assistance in community organization, technical assistance and education for eliminating limiting factors, guidance and assistance in the search of external additional resources, provide training and assessment on public environmental health issues, provide training to the operators, using the Operators Check List and undertake sanitary surveys.	Number of visits/ inspections/ assistances. Number of trainings. Number of systems / assistances provided with the use of the Capacity Development Manual / CPE. Identification of external resources providers. Evaluation of compliance with technical, financial and administrative Safe Drinking Water Act (SDWA) 1996 amendments requirements. Number of operators evaluated through the Operators Check List and operator's status. Number of adapted CPE's undertaken (systems compliance status and profile/assessment) Number action plans developed and submitted. Number sanitary surveys undertaken.	Until contract ends	Up to September 2020, the execution of the new contract has not been possible due to the fiscal situation. Nevertheless, assistance was provided to the systems but not through the use of the circuit riders' concept. Although two years has passed after the hurricanes that hit the Island and all systems have been assisted by coordinating resiliency activities. where not only funding but infrastructure, treatment aspects and compliance issues were addressed, there are still minor activities that were undertaken during this fiscal year. Several factors impaired/limited this process and the contract execution: the fiscal situation / federal cut-off, the earthquakes and the prevailing pandemic, and the latest flooding of July 2020.

OPERATOR CERTIFICATION PROGRAM ACTIVITIES – FY 2020				
Activity	**Deliverables**	**Measure of Success**	**Timetable**	**Achievement**
Provide assistance to authorized entities conducting comprehensive performance evaluations (CPE's), including revisions of CPE's.	CPE	Number of systems assisted.	Upon request	CPE's were not undertaken because no contract was executed. Nevertheless, DOH in a coordinated effort with other Non-Government Organizations (NGO's) undertook assessment of systems' infrastructure and compliance conditions as part of the remaining resiliency activities and the recovery activities for managing the new threats of the pandemic the earthquakes and the flooding. Due to the above-mentioned prevailing emergencies (health and environmental) during FY 2020, DOH was not able to enter into a new contract, thus, no CPEs were performed.
Evaluate and assess proposed DWSRF funding eligibility for proposed improvement / rehabilitation projects	A review of planning and design documents/studies, completed loan request application	Number of projects funded	Upon request / on going	No small systems proposal for projects was received or evaluated. Nevertheless, DOH Continued providing orientation on funds availability to systems through site visits, meetings, written communications, or telephone calls. Increase knowledge of and compliance with the requirements of the SDWA. As of August 2020, at least one hundred and seven (107) systems were visited, and general assistance was provided.
Evaluate proposed Commonwealth legislation associated to small systems.	Issue comments	Amendments to Legislation where applicable	Upon request	Although one (1) legislative project was evaluated by DOH, it was not directly related to small drinking water systems.

OPERATOR CERTIFICATION PROGRAM ACTIVITIES – FY 2020				
Activity	**Deliverables**	**Measure of Success**	**Timetable**	**Achievement**
Assist the PWSS program in conducting small systems sanitary surveys.	On site assistance	Number of sanitary surveys	On going	Assisted the PWSS program in conducting Non-PRASA systems sanitary surveys. A total of seventeen (17) sanitary surveys were undertaken up to March 2020 when the lock-down came into effect. As of September 2020, a total of 39 were undertaken
Coordinate with and among non-profit private entities providing services to small systems in order to increase benefits and maximize efforts.	Meetings and activities	Number of systems benefited	On going	Coordination was undertaken. Direct assistance was provided to approximately one hundred and seven (107) systems.
Continue the implementation of the PR Technical Assistance Support (TAS) program in order to carry out assistance initiatives in concert with other Commonwealth agencies.	Review of studies, planning documents, site inspections / meetings	Reduction in violations, awareness of funding programs	On going	Systems in Circuit Riders projects were advised on funding availability and compliance activities as of September 2020. One hundred forty-six (146) systems in Circuit Riders projects were advised on funding availability and compliance activities as of March 2020.
Assist the PWSS program in performing field inspections of small systems.	Inspections, systems' assessments, technical education and training	Number of visits / inspections	On going	Thirty-one (31) inspections reported as of as of September 2020.
Collaborate with the PWSS program in enforcement and compliance activities, including assisting and guiding small systems in their operation and management.	On-site visits and assistance, monthly reports. Revise monitoring report on bacteriology, residual chlorine, and turbidity.	Number of visits / assistances / evaluations	On going	Five (5) reported as of September 2020.
Assess existing systems and possibly additional new systems in the organization process, among other assistances, in order to conduct them towards compliance with Commonwealth, federal laws and regulations.	On-site assistance	Number of site visits	On going Monthly / bi-monthly	One hundred forty-six (146) systems were assisted as of September 2020.
Continue providing technical assistance to communities under circuit riders previously established by DOH and/or public, private and non-profit entities to avail small systems' compliance.	On-site technical education, training and assistance to systems	Number of site visits (including phone calls /orientations)	On going Monthly / bi-monthly	Educate operators in an effort to promote public health, outline necessary improvements and reduce non-compliance. General assistance was provided to systems' operators. The activity planned under contract

OPERATOR CERTIFICATION PROGRAM ACTIVITIES – FY 2020				
Activity	**Deliverables**	**Measure of Success**	**Timetable**	**Achievement**
				for training and licensing in fiscal years 2018 and 2019 was not possible because the contract for undertaking these activities were not executed due to the federal cut-off, lack of local funds and the general situation of the Island. Nevertheless, between the different assistance provided by DOH approximately 253 systems have been attended.
Evaluate all systems that have received technical assistance through different approaches in order to determine the need for additional assistance and the type of assistance that they may need, including the indirect assistances by other entities that have been channeled through DOH. DOH has provided and will continue providing support in the selection of systems that will be receiving or participating in trainings, as well as the areas which the trainings should emphasize or cover.	Identification and tabulation of assistances by provider and type of assistance	Categorization and number of assistances provided. Identification of systems that could receive assistance by other providers.	On going	Three (3) entities requested assistance. One hundred forty-six (146) systems were evaluated for additional assistance which will be provided through the Second PAS. This Second PAS was extended throughout 2019 and including 2020 due to the earthquakes and the pandemic.
Continued providing assistance to government instrumentalities in the sustainability initiative for community water systems emphasizing water, energy and natural resources.	Enforcement of federal drinking water regulations, monitoring plan, operational guidelines, training, workshops, inspections and laboratory sampling to systems	Number of systems attaining sustainability Number of trainings, workshops, inspections to systems	On going	This initiative ended in 2016. Nevertheless, under new initiatives with a series of government and non-government organizations (NGOs), DOH continues having an active role in providing assistance throughout 2020 notwithstanding the present and on-going challenges. Currently, assistance and coordination is under-taken with the "Multisectoral Committee for the Organization and Compliance of the Community Aqueducts", to complete certain resiliency activities that

OPERATOR CERTIFICATION PROGRAM ACTIVITIES – FY 2020				
Activity	**Deliverables**	**Measure of Success**	**Timetable**	**Achievement**
				were pending.
Assist the PWSS program in the coordination/reactivation and / or establishment of a recommended Interagency/Multisectoral Coordinating Committee to address EPA's OIG audit report recommendation	Meetings of the Committee Identification of efforts for compliance improvements of small systems	Improve/increase number of systems in compliance	On going	During FY 2020 at least 0ne meeting was undertaken as a follow-up of the assistances provided by the Committee to the communities.

The PRDOH entered into a contract agreement to initiate a Circuit Rider Program Project with activities related to the Operator Certification Program. The following activities were performed during FY 2020 for Contractual Agreement 2013-DS0558.

RELEVANT ACTIVITIES OCTOBER 2019-SEPTEMBER 2020

Following are the most relevant activities undertaken during fiscal year 2020.

1. The Board, in coordination with PRDOH, receives and evaluates the exam applications in order to verify compliance with the requirements of the exam.
2. PRDOH personnel visits to the public water systems to assess compliance.
3. Monthly/quarterly meetings with the Board to evaluate the continuing education requirements developed by DOH.
4. Provide to Stakeholders with the inventory of systems that need to reinforce their capacity to manage their drinking water system.

During FY 2021, DOH was able to undertake all the following activities under the Operator Certification Program to ensure that Drinking Water Treatment Systems and/or Plants have a certified operator or have an operator under the direct supervision of a certified operator:

OPERATOR CERTIFICATION PROGRAM ACTIVITIES – FY 2020-21				
Activity	**Deliverables**	**Measure of Success**	**Time Table**	**Achievement**
Provide assistance to approximately 50 public water systems through the use of the circuit riders concept and expand the circuit riders project directed towards but not limited to: systems' compliance evaluation with the SDWA and regulations, technical, administrative and financial status evaluation for the identification of limiting factors, guidance and assistance in community organization, technical assistance and education for eliminating limiting factors, guidance and assistance in the search of external additional resources, provide training and assessment on public environmental health issues, undertake sanitary surveys where applicable.	Systems Inspections, technical, administrative and financial status evaluation for the identification of problems / limiting factors, guidance and assistance in community organization, technical assistance and education for eliminating limiting factors, guidance and assistance in the search of external additional resources, provide training and assessment on public environmental health issues, provide training to the operators, using the Operators Check List and undertake sanitary surveys.	Number of visits/ inspections/ assistances. Number of trainings. Number of systems / assistances provided with the use of the Capacity Development Manual / CPE. Identification of external resources providers. Evaluation of compliance with technical, financial and administrative Safe Drinking Water Act (SDWA) 1996 amendments requirements. Number of operators evaluated through the Operators Check List and operators' status. Number of adapted CPE's undertaken (systems compliance status and profile/assessment) Number action plans developed and submitted. Number sanitary surveys undertaken.	Until contract ends	As of September 2021, the execution of the new contract has not been possible due to the fiscal situation. Nevertheless, assistance was provided to the systems but not through the use of the circuit rider's concept. Although almost four years have passed after the hurricanes that hit the Island and all systems have been assisted, still there are resiliency activities, where not only funding but infrastructure, treatment aspects and compliance issues were addressed. There are still minor activities that were undertaken during this fiscal year. Several factors impaired/limited this process and the contract execution: the fiscal situation / federal cut-off, the earthquakes and the prevailing pandemic, and the latest flooding of not only last year but also this year. Only a pilot project contract related to monitoring surveillance was executed and certain limited related activities were undertaken.
Provide assistance to authorized entities conducting comprehensive performance	CPE	Number of systems assisted.	Upon request	CPEs were not undertaken because no contract was executed.

OPERATOR CERTIFICATION PROGRAM ACTIVITIES – FY 2020-21				
Activity	**Deliverables**	**Measure of Success**	**Time Table**	**Achievement**
evaluations (CPE's), including revisions of CPE's.				Nevertheless, DOH in a coordinated effort with other Non-Government Organizations (NGO's) undertook assessment of systems' infrastructure and compliance conditions as part of the remaining resiliency activities and the recovery activities for managing the new threats of the pandemic the earthquakes and the flooding. Due to the above-mentioned prevailing emergencies (health and environmental) during FY 2021, DOH was not able to enter into a new contract, thus, no CPEs were performed. Only two (2) CPEs were performed under the pilot project finance under the State Program Management set aside and technical assistance set-aside.

OPERATOR CERTIFICATION PROGRAM ACTIVITIES – FY 2020-21				
Activity	**Deliverables**	**Measure of Success**	**Time Table**	**Achievement**
Evaluate and assess proposed DWSRF funding eligibility for new proposed improvement / rehabilitation projects	A review of planning and design documents/studies, completed loan request application	Number of projects funded	Upon request / on going	No small systems proposal for projects was received or evaluated. Nevertheless, DOH continued providing orientation on funds availability to systems through site visits, meetings, written communications, or telephone calls. Increase knowledge of and compliance with the requirements of the SDWA. As of September 2021, at least one hundred and five (105) systems were visited, and general assistance was provided.
Evaluate proposed Commonwealth legislation associated to small systems.	Issue comments	Amendments to Legislation where applicable	Upon request	Although one (1) legislative project was evaluated by DOH, it was not directly related to small drinking water systems.
Assist the PWSS program in conducting small systems sanitary surveys.	On site assistance	Number of sanitary surveys	On going	Assisted the PWSS program in conducting Non-PRASA systems sanitary surveys. A total of thirty-eight (38) sanitary surveys were undertaken as of September 2021
Coordinate with and among non-profit private entities providing services to small systems in order to increase benefits and maximize efforts.	Meetings and activities	Number of systems benefited	On going	Coordination was undertaken. Direct assistance was provided to approximately one hundred and five (105) systems.
Continue the implementation of the PR Technical Assistance Support (TAS) program in order to carry out assistance initiatives in	Review of studies, planning documents, site inspections / meetings	Reduction in violations, awareness of funding programs	On going	Systems in Circuit Riders projects were advised on funding availability and

OPERATOR CERTIFICATION PROGRAM ACTIVITIES – FY 2020-21				
Activity	**Deliverables**	**Measure of Success**	**Time Table**	**Achievement**
concert with other Commonwealth agencies.				compliance activities as of September 2021. One hundred forty-eight (148) systems in Circuit Riders projects were advised on funding availability and compliance activities as of September-2021.
Assist the PWSS program in performing field inspections of small systems.	Inspections, systems' assessments, technical education and training	Number of visits / inspections	On going	Fifty-one (51) inspections reported as of September 2021
Collaborate with the PWSS program in enforcement and compliance activities, including assisting and guiding small systems in their operation and management.	On-site visits and assistance, monthly reports. Revise monitoring report on bacteriology, residual chlorine, and turbidity.	Number of visits / assistances / evaluations	On going	One hundred-eighty-one (181) enforcement / compliance actions and 1,676 follow-up activities, including, assisting, and guiding small systems as of September 2021.
Assess existing systems and possibly additional new systems in the organization process, among other assistances, in order to conduct them towards compliance with Commonwealth, federal laws and regulations.	On-site assistance	Number of site visits	On going Monthly / bi-monthly	One hundred forty-eight (148) systems participating in the PAS 2 initiative were assisted.
Continue providing technical assistance to communities under circuit riders previously established by DOH and/or public, private and non-profit entities to avail small systems' compliance.	On-site technical education, training and assistance to systems	Number of site visits (including phone calls /orientations)	On going Monthly / bi-monthly	Educate operators in an effort to promote public health, outline necessary improvements and reduce non-compliance. General assistance was provided to systems' operators. The activity planned under contract for training and licensing in fiscal years 2018 through 2021 was not possible because the contract for undertaking these activities were not executed due to the federal cut-off, lack of

OPERATOR CERTIFICATION PROGRAM ACTIVITIES – FY 2020-21				
Activity	**Deliverables**	**Measure of Success**	**Time Table**	**Achievement**
				local funds and the general situation of the Island. Nevertheless, between the different assistance provided by DOH approximately 150 systems have been attended.
Evaluate all systems that have received technical assistance through different approaches in order to determine the need for additional assistance and the type of assistance that they may need, including the indirect assistances by other entities that have been channeled through DOH. DOH has provided and will continue providing support in the selection of systems that will be receiving or participating in trainings, as well as the areas which the trainings should emphasize or cover.	Identification and tabulation of assistances by provider and type of assistance	Categorization and number of assistances provided. Identification of systems that could receive assistance by other providers.	On going	Also, assistance was provided through the Second PAS. This Second PAS was extended throughout 2019 and 2020 including 2021 due to the earthquakes and the pandemic. Three (3) entities requested assistance during fiscal year 2021 two more systems received additional assistance provided through the Second PAS for a total of one hundred forty-eight (148) assisted. This Second PAS was extended throughout 2019 and including 2020-2021 due to the earthquakes and the pandemic.
Continued providing assistance to government instrumentalities in the sustainability initiative for community water systems emphasizing water, energy and natural resources.	Enforcement of federal drinking water regulations, monitoring plan, operational guidelines, training, workshops, inspections and laboratory sampling to systems	Number of systems attaining sustainability Number of trainings, workshops, inspections to systems	On going	This initiative ended in 2016. Nevertheless, under new initiatives with a series of government and non-government organizations (NGOs), DOH continues having an active role in providing assistance throughout 2021 notwithstanding the present and on-going challenges. Currently, assistance and coordination is under-

OPERATOR CERTIFICATION PROGRAM ACTIVITIES – FY 2020-21				
Activity	**Deliverables**	**Measure of Success**	**Time Table**	**Achievement**
				taken with the Water Coalition, previously known as the "Multisectoral Committee for the Organization and Compliance of the Community Aqueducts", to complete certain resiliency activities that were pending.
Assist the PWSS program in the development of a compliance assistance resource list.	Identification of compliance assistance resources	Development of a list that includes a number of resources where certified drinking water laboratories are considered	On going	During FY 2021 continued collaborating with the PWSS in the development of the list.
Assist the PWSS program in the coordination/reactivation and / or establishment of a recommended Interagency/Multisectoral Coordinating Committee to address EPA's OIG audit report recommendation	Meetings of the Committee Identification of efforts for compliance improvements of small systems	Improve/increase number of systems in compliance	On going	During FY 2021 at least one meeting was undertaken as a follow-up of the assistances provided by the Water Coalition Committee to the communities. It is important to emphasize that, in order to avoid duplicity, certain activities of this Committee have been undertaken since FY 2020 by the Water Coalition**.**

The PRDOH extended a contract agreement to continue a Circuit Rider Program Project with activities related to the Operator Certification Program. The following sections describe the activities performed during FY 2021 for Contractual Agreement 2015-DS0971.

RELEVANT ACTIVITIES OCTOBER 2020-SEPTEMBER 2021

1. The Board, in coordination with PRDOH, receives and evaluates the exam applications in order to verify compliance with the requirements of the exam.
2. PRDOH personnel visits to the public water systems to assess compliance.
3. Monthly/quarterly meetings with the Board to evaluate the continuing education requirements developed by DOH.

4. Provide to Stakeholders with the inventory of systems that need to reinforce their capacity to manage their drinking water system.

In summary, during FY 2022 the Department of Health undertook the following activities to ensure that Drinking Water Treatment Systems and/or Plants have a certified operator or have an operator under the direct supervision of a certified operator:

Activity & *Timetable* FY 2021-22	**Resp Party**	**Deliverables**	**Measure of Success**	**Achievement**
Provide assistance to approximately 50 public water systems through the use of the circuit riders concept and expand the circuit riders project directed towards but not limited to: systems' compliance evaluation with the SDWA and regulations, guidance and assistance in community organization, technical assistance and education for eliminating limiting factors, guidance and assistance in the search of external additional resources, provide training and assessment on public environmental health issues, undertake sanitary surveys where applicable. *Until contract expiration*	DOH/ private entity partner-ship RCAP	Systems inspections, technical, administrative and financial status evaluation for the identification of problems/limiting factors, guidance and assistance in community organization, technical assistance and education for eliminating limiting factors, guidance and assistance in the search of external additional resources, provide training and assessment on public environmental health issues, provide training to the operators, using the Operators Check List and undertake sanitary surveys.	Number of visits/ inspections/ assistances. Number of trainings. Number of systems / assistances provided with the use of the Capacity Development Manual / CPE. Identification of external resources providers. Evaluation of compliance with technical, financial, and administrative Safe Drinking Water Act (SDWA) 1996 amendments requirements. Number of operator evaluated through the Operators Check List and operator's status. Number of adapted CPE's undertaken (systems compliance status and profile/assessment) Number action plans developed and submitted. Number sanitary surveys undertaken.	During 2022 as well as during the previous two years we continue having impairing factors such as the recent hit of the Hurricane Fiona together with the precarious financial situation, the pandemic and the earthquakes that limit and affect the execution of a dedicated contract with a public private partnership for this exclusive purpose. Although as of August 2021, the execution of the new contract with a public private partnership was not feasible nor viable due to the fiscal situation, but assistance was provided to the systems. This was possible under individual professional services contract using of the circuit rider's concept. Although almost five years have passed after the hurricanes that hit the Island and all systems have been assisted, still there are resiliency activities, where not only funding but infrastructure, treat-ment aspects and compliance issues

Activity & *Timetable* FY 2021-22	Resp Party	Deliverables	Measure of Success	Achievement
				were addressed. Nevertheless, with the hit of hurricane Fiona a setback of activities happened but still certain activities were undertaken during this fiscal year. Only a pilot project contract related to monitoring surveillance was executed and certain limited related activities were undertaken.
Provide assistance to authorized entities conducting comprehensive performance evaluations (CPE's), including revisions of CPE's. *Upon request*	DOH	CPE	Number of systems assisted.	Due to the prevailing emergencies (health and environmental) and the hit of hurricane Fiona during FY 2022 DOH was not able to enter into a new public private contract dedicated exclusively for undertaking CPEs. Nevertheless, DOH in a coordinated effort with other Non-Government Organizations (NGO's) undertook assessment of systems' infrastructure and compliance conditions as part of the remaining resiliency activities and the recovery activities for managing the new impact of the hurricane Fiona the prevailing pandemic and the earthquakes. Due to the above-mentioned prevailing emergencies (environmental and health) during FY 2022, DOH was not able to enter into a new contract, with a

Activity & *Timetable* FY 2021-22	Resp Party	Deliverables	Measure of Success	Achievement
				private entity dedicated exclusively undertaking CPEs. Thus, under individual contract sixty-six (66) CPEs were performed as part of the surveillance monitoring pilot project.
Evaluate and assess proposed DWSRF funding eligibility for new proposed improvement/rehabilitation projects *Upon request / on going*	DOH	A review of planning and design documents/studies, completed loan request application	Number of projects funded	No small systems proposal for projects was received or evaluated although general information was provided. Nevertheless, DOH continued providing orientation on funds availability to systems through site visits, meetings, written communications, or telephone calls. Increase knowledge of and compliance with the requirements of the SDWA. As of September 2022, at least one hundred and five (105) systems were visited, and general assistance was provided.
Evaluate proposed Common-wealth legislation associated to small systems. *Upon request*	DOH	Issue comments	Amendments to Legislation where applicable	Two (2) legislative projects were evaluated by DOH directly related to small drinking water systems.
Assist the PWSS program in conducting small systems sanitary surveys. *On going*	DOH	On site assistance	Number of sanitary surveys	Assisted the PWSS program in conducting Non-PRASA systems sanitary surveys. A total of thirty-six (36) sanitary surveys were undertaken as of September 2022.

Activity & *Timetable* FY 2021-22	Resp Party	Deliverables	Measure of Success	Achievement
Coordinate with and among non-profit private entities providing services to small systems in order to increase benefits and maximize efforts. *On going*	DOH/ non-profit private entities	Meetings and activities	Number of systems benefited	Coordination was undertaken. Direct assistance was provided to approximately one hundred and five (105) systems.
Continue the implementation of the PR Technical Assistance Support (TAS) program in order to carry out assistance initiatives in concert with other Commonwealth agencies. *On going*	DOH	Review of studies, planning documents, site inspections / meetings	Reduction in violations, awareness of funding programs	Systems in Circuit Riders projects were advised on funding availability and compliance activities. Two hundred thirty-nine (239) systems in Circuit Riders projects were advised on funding availability and compliance activities as of September 2022.
Assist the PWSS program in performing field inspections of small systems. *On going*	DOH	Inspections, systems' assessments, technical education and training	Number of visits / inspections	Twenty (20) inspections reported as of September 2022.
Collaborate with the PWSS program in enforcement and compliance activities, including assisting and guiding small systems in their operation and management. *On going*	DOH	On-site visits and assistance, monthly reports. Revise monitoring report on bacteriology, residual chlorine, and turbidity.	Number of visits / assistances / evaluations	Collaborated with the PWSS program in 271 enforcement/compliance actions and 995 follow-up activities, including, assisting, and guiding small systems as of September 2022.
Assess new systems in the organization process in order to conduct them towards compliance with Commonwealth, federal laws and regulations and possibly additional new systems. *On going Monthly / bi-monthly*	DOH/ Circuit Riders	On-site assistance	Number of site visits	Two hundred thirty-nine (239) systems were assisted.
Continue providing technical assistance to communities under circuit riders previously established by DOH and/or public, private and non-profit entities to avail small systems' compliance. *On going Monthly / bi-monthly*	DOH/ Circuit Riders	On-site technical education, training and assistance to systems	Number of site visits (including phone calls /orientations)	Two hundred thirty-nine (239) systems were assisted.
Evaluate all systems that have received technical assistance through different approaches in order to determine the need for additional assistance and the type of assistance that they may need,	DOH/ Finance Center	Identification and tabulation of assistances by provider and type of assistance	Categorization and number of assistances provided. Identification of systems that could receive	Several entities requested assistance. One hundred forty-eight (148) systems were evaluated for

Activity & *Timetable* FY 2021-22	Resp Party	Deliverables	Measure of Success	Achievement
including the indirect assistances by other entities that have been channeled through DOH. DOH has provided and will continue providing support in the selection of systems that will be receiving or participating in trainings, as well as the areas which the trainings should emphasize or cover. *On going*			assistance by other providers.	additional assistance which will be provided through the Second PAS. This Second PAS was extended throughout 2019 and including 2020-2021 due to the earthquakes and the pandemic. During fiscal year 2022 DOH provided administrative assistance for the revision, evaluation and approval of PRASA's payment to the Environmental Quality Laboratories, Inc (EQLABS) of one (1) invoice in the total amount of $7,474.00 through letter dated December 22, 2021. This project ended in FY 2021.
Continue providing assistance to government instrumentalities in the small systems sustainability initiative. *On going*	DOH/ Gov. agencies	Enforcement of federal drinking water regulations, monitoring plan, operational guidelines, training, workshops, inspections, and laboratory sampling to systems	Number of systems attaining sustainability Number of training, workshops, inspections to systems	This initiative of the government ended in 2016 possibly due to all the financial constraints that the government encountered. Nevertheless, under new initiatives with a series of govern-ment and non-government organizations (NGOs), DOH continues having an active role in providing assistance throughout 2022 notwithstanding the present and on-going challenges of the hurricane Fiona and the prevailing pandemic and earthquakes. We cannot disregard the collateral results of all this such as the severe power

Activity & *Timetable* FY 2021-22	Resp Party	Deliverables	Measure of Success	Achievement
				outages that are constant. prolonged and recurrent.
Assist the PWSS program in the coordination/reactivation and / or establishment of a recommended Interagency Coordinating Committee to address EPA's OIG audit report recommendation. *On going*	DOH/ EPA	Meetings of the Committee Identification of efforts for compliance improvements of small systems	Improve/increase number of systems in compliance	Three meetings were attended during this fiscal year as a follow-up of the assistances provided by the Water Coalition to the communities. It is important to emphasize that, in order to avoid duplicity, certain activities of this Committee have been undertaken since FY 2020 by the Water Coalition.
Assist the PWSS program in the development of a compliance assistance resource list. *On going*	DOH/ EPA	Identification of compliance assistance resources	Development of a list that includes a number of resources where certified drinking water laboratories are considered	During FY 2022 continued collaborating with the PWSS in the development and update of the list. This list is a dynamic one that is subject to changes every moment these are provided.

The activities regarding the Operator Certification Program Project described in the following sections corresponds to the Contractual Agreement. The following activities were undertaken and completed during FY 2022.

1. The Board, in coordination with PRDOH, receives and evaluates the exam applications in order to verify compliance with the requirements of the exam.
2. PRDOH personnel visits to the public water systems to assess compliance.
3. Monthly/quarterly meetings with the Board to evaluate the continuing education requirements developed by DOH.
4. Provide to Stakeholders with the inventory of systems that need to reinforce their capacity to manage their drinking water system.

Appendix C: SWAP DATA AVAILABLE FOR TECHNICAL ASSISTANCE TO SMALL SYSTEMS

The Final SWAP report was submitted to EPA on December 2007. Through a public announcement on February 11, 2008 the general public was notified of the availability of the report at DOH's offices.

On May 2008 it was submitted to EPA and other concerned agencies on DVD format for availing the use of the information contained in the report. Also, on May 20, 2008, a conference on the SWAP final results was undertaken at the 14th Drinking Water Seminar, also for availing information for the benefit of the general public.

On February 2008 it was incorporated to DOH's website and is still available at www.salud.gov.pr

The distribution of the systems considered is as follows:

DISTRIBUTION OF THE SYSTEMS IN THE SWAP									
Type of System*	PRASA		PRASA Total	Non-PRASA		Non-PRASA Total	Total		Grand Total
	S	G		S	G		S	G	
CWS	127	87	214	113	119	232	240	206	**446**
NCNT	0	0	0	3	45	48	3	45	**48**
NCT	0	0	0	0	4	4	0	4	**4**
Total	**127**	**87**	**214**	**116**	**168**	**284**	**243**	**255**	**498**

* CWS = community water system; NCT = non-community transient;
NCNT = non-community non-transient; S = surface; G = ground; SS = surface spring

The distribution of the components of the systems by source and type is as follows:

COMPONENTS DISTRIBUTION BY SOURCE			
Source Type	Total Components		SWAP Components
Ground water (well)	734		734
Surface Water (intake)	303		303
Springs	21		21
Storage Tanks	65	196	0
Treatment plants	131		0
Total	**1254**		**1058**

COMPONENTS DISTRIBUTION BY TYPE												
TYPE OF SYSTEM*	PRASA			PRASA	Non-PRASA			Non-PRASA	TOTAL			TOTAL
	S	G	SS	TOTAL	S	G	SS	TOTAL	S	G	SS	
CWS	195	488	1	684	106	153	20	279	301	641	21	**963**
NCNT	0	0	0	0	2	89	0	91	2	89	0	**91**
NCT	0	0	0	0	0	4	0	4	0	4	0	**4**
TOTAL	**195**	**488**	**1**	**684**	**108**	**246**	**20**	**374**	**303**	**734**	**21**	**1058**

* CWS = community water system; NCT = non-community transient; NCNT = non-community non-transient; S = surface; G = ground; SS = surface spring

COMPONENTS DELINEATION AVAILABLE BY TYPE OF SYSTEMS												
TYPE OF SYSTEM*	PRASA			PRASA	Non-PRASA			Non-PRASA	TOTAL			TOTAL
	S	G	SS	TOTAL	S	G	SS	TOTAL	S	G	SS	
CWS	190	444	1	635	104	153	20	277	294	597	21	**912**
NCNT	0	0	0	0	1	87	0	88	1	87	0	**88**
NCT	0	0	0	0	0	4	0	4	0	4	0	**4**
TOTAL	**190**	**444**	**1**	**635**	**105**	**244**	**20**	**369**	**295**	**688**	**21**	**1004**

* CWS = community water system; NCT = non-community transient; NCNT = non-community non-transient; S = surface; G = ground; SS = surface spring

Following are the susceptibility results for the PRASA and the Non-PRASA systems included in the Final SWAP Report.

SUSCEPTIBILITY RESULTS FOR PRASA SYSTEMS	
Systems with the higher punctuation:	
• Metropolitan	173
• Aguadilla Urbano	125
• Ponce Urbano	85
Systems with the lower punctuation:	
• Caín Alto (Capriles)	2
• Rayo Plata	2
Mayor contaminant	
• Biological followed by Volatile Organic Chemical (VOC)	

SUSCEPTIBILITY RESULTS FOR NON-PRASA SYSTEMS	
Systems with the higher punctuation:	
• Abbott Chemicals	24
• Abbott	22
• Glaxo Smithkline	18
• Albergue Olímpico	18
Systems with the lower punctuation:	
• Auxilio Mutuo	2
• Las Corujas	2
Mayor contaminant	
• Biological followed by Volatile Organic Chemical (VOC)	

Following are the SWAP Implementation Final Comments. The SWAP project outcome is to provide for the benefit of each public water system in Puerto Rico. The SWAP was designed to assess existing and potential threads to the quality of public drinking water supplies and provide a rational basis for future efforts to protect drinking water. The data collected and developed during the course of the assessment process is readily available to the general public and will be distributed as previously described. The SWAP information will provide assistance to state and local agencies, communities and public water systems in meeting the following goals:

- Monitoring Relief: Refine, focus and target the monitoring requirements for drinking water sources.

- Drinking Water Quality Improvement: Improve drinking water quality and support effective management of water resources of the state.

- Proactive Approach: Encourage a proactive approach for protecting drinking water sources and enable protection activities by communities and drinking water systems.

- Information Availability: Inform communities and drinking water systems of contaminants and activities that may affect drinking water quality or the ability to permit new drinking water sources.

- Cleanup and Prevention Efforts: Focus cleanup and pollution prevention efforts on serious threats to surface and groundwater sources of drinking water.

- Requirements Compliance: Meet federal requirements for establishing source water assessment programs.

After completing the project, it can be seen that the SWAP goals were fully accomplished. The PRDOH PWSS Program – up to date – has completed all SWAP activities. Following is a summary of the SWAP project data available:

- Systems Inventory : 498
- Components Inventory : 1254

- Coordinates Located : 1202
- Delineations Performed : 1004
- Inventory of Potential Sources of Contamination (PSC) : 8,566
- Geographic Information System (GIS) Maps : 1,004
- Susceptibilities Performed : 1,004
- Public Outreach Efforts : 47
- Reports Submitted : 34

These ratings will be an index that the different agencies can use as a reference when implementing their corresponding protection measures that may be undertaken under present and or future programs.

Appendix D: ACTIVITIES UNDER PILOT PROJECT - FY 2014 TO FY 2016

FINAL CAPACITY MEASUREMENT						
Group	**PWSID**	**System**	**Technical (%)**	**Managerial (%)**	**Financial (%)**	**Total (%)**
1	207042	Arrozal Los Muertos	22.41	18.94	34.09	25.12
	272032	Finca William Lugo	16.18	12.12	0	9.5
	302033	Quebrada Larga	-----	-----	-----	-----
	458214	Ponce Darlington Elderly	-----	-----	-----	-----
	724097	Mana III	44.32	35.61	44.7	41.57
	754107	Com. Nieves Sánchez	33.88	35.61	59.09	42.77
	306083	Humatas Deep Water	29.93	23.48	25	26.18
	556115	Com. Jagual	55.15	37.12	35.61	42.75
2	604036	Com. Rivera	63.29	46.97	78.03	62.77
	521035	Pelegrin Santo	74.46	50	69.7	64.82
	521075	Com. Aislada Almirante	68.74	72.73	65.15	68.87
	521025	Carrasquillo	59.31	36.36	67.42	54.42
	510165	Com. Doña Mayo	52.46	57.58	34.09	48.09
	666106	El Cerro	54.03	63.64	46.21	54.62
	505075	Algarrobo Nuevo	61.57	67.42	44.7	57.93
	613476	Caguas Real	81.97	78.79	80.3	80.37
3	677056	Jacanas Piedras Blancas I	-----	-----	-----	-----
	306053	Bo. Hatillo Añasco	45.94	9.85	0.00	18.87
	613246	Usuarios Pozo Profundo	-----	-----	-----	-----
	613426	El Manantial	-----	-----	-----	-----
	523105	Doña Elena	-----	-----	-----	-----
	613106	Lozada y Pozo Dulce	67.4	54.55	69.7	63.92
	666036	Los Díaz	-----	-----	-----	-----
	613046	Turabo Arriba	-----	-----	-----	-----
4	613366	Sector La Sierra	-----	-----	-----	-----
	306093	Daguey Ajies Arriba	-----	-----	-----	-----
	613016	Casa de Piedra	-----	-----	-----	-----
	556075	Jacaboa Higuero	45.5	33.33	32.58	37.22
	367013	Rural Guacio	-----	-----	-----	-----
	666016	Sector Oquendo	60.26	46.21	53.79	53.49
	604046	Mulitas Centro	-----	-----	-----	-----
	613036	Parc. Nuevas Cañaboncito	48.37	59.09	81.06	62.7
5	351023	Sonador II	-----	-----	-----	-----
	302043	La Ceiba	-----	-----	-----	-----
	302023	Jaguey Chiquito	-----	-----	-----	-----
	302013	Gabino Negrón	-----	-----	-----	-----
	523055	Maisonet	-----	-----	-----	-----
	613196	Dueños El Paraíso	-----	-----	-----	-----
	510215	Barrancas Centro	-----	-----	-----	-----
	613056	Los Velázquez	51.62	65.91	79.55	65.55

FINAL CAPACITY MEASUREMENT						
Group	**PWSID**	**System**	**Technical (%)**	**Managerial (%)**	**Financial (%)**	**Total (%)**
6*	613486	Hacienda del Rey				
	677146	Calabazas Arriba				
	677216	Jacanas Sur				
	644086	Com. Asomante				
	666046	Quemados I				
	604056	Sector La Tiza				
	510065	Tabor				
	510125	La Tiza II				
Total	**48**					
* Information related to the final capacity of these systems will be available by September 2014.						

INITIAL CAPACITY MEASUREMENT						
Group	**PWSID**	**System**	**Technical (%)**	**Managerial (%)**	**Financial (%)**	**Total (%)**
1	207042	Arrozal Los Muertos	19.12	9.09	6.82	11.75
	272032	Finca William Lugo	14.71	12.12	0.00	9.00
	302033	Quebrada Larga	-----	-----	-----	-----
	458214	Ponce Darlington Elderly	-----	-----	-----	-----
	724097	Mana III	25.21	23.48	24.24	24.32
	754107	Com. Nieves Sánchez	14.03	11.36	37.88	21.02
	306083	Humatas Deep Water	15	10.31	12.88	12.85
	556115	Com. Jagual	45.55	25	27.27	32.74
2	604036	Com. Rivera	35.99	41.67	61.36	46.24
	521035	Pelegrin Santo	57.9	38.64	62.12	52.94
	521075	Com. Aislada Almirante	61.15	60.61	47.73	56.54
	521025	Carrasquillo	46.98	28.79	53.03	42.97
	510165	Com. Doña Mayo	44.38	50	12.12	35.59
	666106	El Cerro	45.94	43.94	20.45	36.87
	505075	Algarrobo Nuevo	49.12	37.12	27.27	37.95
	613476	Caguas Real	77.56	69.7	75.00	74.12
3	677056	Jacanas Piedras Blancas I	-----	-----	-----	-----
	306053	Bo. Hatillo Añasco	45.94	12.88	0.00	19.87
	613246	Usuarios Pozo Profundo	-----	-----	-----	-----
	613426	El Manantial	-----	-----	-----	-----
	523105	Doña Elena	-----	-----	-----	-----
	613106	Lozada y Pozo Dulce	53.49	63.64	59.85	58.94
	666036	Los Díaz	-----	-----	-----	-----
	613046	Turabo Arriba	-----	-----	-----	-----

INITIAL CAPACITY MEASUREMENT cont.						
Group	**PWSID**	**System**	**Technical (%)**	**Managerial (%)**	**Financial (%)**	**Total (%)**
4	613366	Sector La Sierra	-----	-----	-----	-----
	306093	Daguey Ajies Arriba	-----	-----	-----	-----
	613016	Casa de Piedra	-----	-----	-----	-----
	556075	Jacaboa Higuero	39.62	33.33	23.48	32.22
	367013	Rural Guacio	-----	-----	-----	-----
	666016	Sector Oquendo	53.34	62.12	41.67	52.38
	604046	Mulitas Centro	-----	-----	-----	-----
	613036	Parc. Nuevas Cañaboncito	41.57	59.09	73.48	57.88
5	351023	Sonador II	-----	-----	-----	-----
	302043	La Ceiba	-----	-----	-----	-----
	302023	Jaguey Chiquito	-----	-----	-----	-----
	302013	Gabino Negrón	-----	-----	-----	-----
	523055	Maisonet	-----	-----	-----	-----
	613196	Dueños el Paraíso	-----	-----	-----	-----
	510215	Barrancas Centro	-----	-----	-----	-----
	613056	Los Velázquez	50.47	68.18	75	64.41
6	613486	Hacienda del Rey	61.38	84.85	46.97	64.37
	677146	Calabazas Arriba	62.46	78.79	54.55	65.24
	677216	Jacanas Sur	27.81	48.48	23.48	33.2
	644086	Com. Asomante	68.44	69.7	81.82	73.27
	666046	Quemados I	48.81	34.09	29.55	37.6
	604056	Sector La Tiza	37.94	53.79	78.03	56.4
	510065	Tabor	52.91	71.21	78.03	67.24
	510125	La Tiza II	57.85	29.55	38.64	42.17
Total	**48**					

CAPACITY DEVELOPMENT MEASUREMENT: VISITS					
Visit #	**Systems Visited**	**PWSID**	**System**	**Visit Date**	**Activities**
8	1	272032	Finca William Lugo	10/21/2013	SS Action Plan
	2	306053	Bo. Hatillo Añasco	10/16/2013	SS Action Plan
	3	306083	Humatas Deep Water	10/28/2013	SS Action Plan
	4	505075	Algarrobo Nuevo	10/17/2013	SS Action Plan
	5	510165	Doña Mayo	10/25/2013	SS Action Plan
	6	666106	El Cerro	10/18/2013	SS Action Plan
	7	521025	Comunidad Carrasquillo	10/9/2013	SS Action Plan
	8	521035	Pelegrin Santos	10/9/2013	SS Action Plan
	9	556115	Jagual	10/29/2013	SS Action Plan
	10	604036	Comunidad Rivera	10/30/2013	SS Action Plan
	11	613036	Parcelas Nuevas Cañaboncito	10/28/2013	SS Action Plan
	12	666016	Sector Oquendo	10/31/2013	SS Action Plan
9	1	613106	Sector Lozada y Pozo Dulce	11/15/2013	SS Action Plan
	2	613486	Hacienda del Rey	11/26/2013	SS Action Plan
	3	644086	Asomante	11/26/2013	SS Action Plan
	4	677216	Jacanas Sur	11/26/2013	SS Action Plan
	5	677146	Calabazas Arriba	11/26/2013	SS Action Plan
	6	556075	Jacaboa-Higuero	11/26/2013	SS Action Plan
10	1	604056	Sector tiza	4/12/2013	SS Action Plan
	2	510125	La Tiza II	4/12/2013	SS Action Plan
	3	666046	Quemados I	5/12/2013	SS Action Plan
	4	613056	Los Velázquez	6/12/2013	SS Action Plan
	5	510065	Comunidad Tabor	6/12/2013	SS Action Plan
11	1	724097	Mana III	3/25/2014	F-CPE
	2	754107	Com. Nieves Sánchez	3/26/2014	F-CPE
	3	207042	Arrozal Los Muertos	3/20/2014	F-CPE
	4	505075	Algarrobo Nuevo	3/18/2014	F-CPE
	5	666106	El Cerro	3/19/2014	F-CPE
12	1	521075	Com. Aislada Almirante	4/23/2014	F-CPE
	2	604036	Com. Rivera	4/26/2014	F-CPE
	3	521035	Pelegrin Santos	4/30/2014	F-CPE
	4	521025	Com. Carrasquillo	4/30/2014	F-CPE
13	1	613106	Lozada y Pozo Dulce	5/15/2014	F-CPE
	2	556115	Jagual	5/6/2014	F-CPE
	3	306083	Humatas Deep Water	5/20/2014	F-CPE
	4	272032	Finca William Lugo	5/12/2014	F-CPE
	5	613476	Caguas Real	5/14/2014	F-CPE
	6	510165	Doña Mayo	5/13/2014	F-CPE

CAPACITY DEVELOPMENT MEASUREMENT: VISITS continues…					
Visit #	**Systems Visited**	**PWSID**	**System**	**Visit Date**	**Activities**
14	1	666016	Sector Oquendo	6/11/2014	F-CPE
	2	613036	Parcelas Nuevas Cañaboncito	6/12/2014	F-CPE
	3	306053	Bo. Hatillo Añasco	6/9/2014	F-CPE
	4	556075	Bo. Jacaboa-Higuero	6/21/2014	F-CPE
15	1	613056	Los Velázquez	7/26/2014	F-CPE
	96				
SanSur = Sanitary Survey; SS Action Plan = Sanitary Survey Action Plan; I-CPE = Initial CPE; FCEP = Final CPE; OpCk = Operator Check List; RC = Report of Changes					

SYSTEMS VISITS PER MONTH FOR INITIAL CPE'S FISCAL YEAR 2015	
Month	**Visits for Sanitary Survey**
March	3
April	2
May	5
June	4
July	0
August*	-
September*	-
Total	**14**
* Data as of July 2015.	

Since the beginning of the project systems have been visited as follows:

SYSTEMS VISITS PER MONTH	
Month/Year	**Systems**
October 2013	12
November 2013	6
December 2013	5
March 2014	5
April 2014	4
May 2014	6
June 2014	4
July 2014	1
Total	**53**

As part of this project, systems have been visited as follows:

SYSTEMS VISITS PER MONTH - MARCH 2015 TO DATE		
Month/Year	**Visits for Sanitary Survey**	**Visits for Action Plans**
March 2015	6	0
April 2015	6	0
May 2015	6	0
June 2015	6	3
July 2015	1	0
FY 2014-15	**25**	**3**

Due to the cut-off, DOH was only able to undertake, as scheduled under contract, the following visits:

SYSTEMS VISITS PER MONTH DURING FISCAL YEAR 2016		
Month/Year	**For Sanitary Survey (SS)**	**For Action Plans Related to SS's**
October 2015	7	2
November 2015	3	0
December 2015	0	2
January 2016	0	5
February 2016	0	8
March 2016	0	3
April 2016	0	0
May 2016	0	0
June 2016	0	0
July 2016	0	0
August 2016	0	0
September 2016	0	0
FY 2015-16	**10**	**20**

APPENDIX D-1: ACTIVITIES TO BE UNDERTAKEN UNDER THE PILOT PROJECT FOR CAPACITIES MONITORING/SURVEILLANCE FINANCED UNDER THE TECHNICAL ASSISTANCE AND STATE MANAGEMENT SET-ASIDES DURING FFY 2022

Several professional service contracts were executed by hiring 9 employees whose activities regarding the Non-PRASA systems include: capacity assessment, security response, asset management assessment, sampling, and sanitary surveys. In terms of the Operator Certification Program, the following related activities will also be undertaken:

- oversight of the operation of the systems
- make operational recommendations/adjustments, if necessary

During this fiscal year 2021, these personnel undertook trainings and workshops.

Other related activities that may be performed under the Pilot Project are the:

- # number of systems inspected and # number of visits per systems
- the capacities measured by using the adapted CPE Spreadsheet where follow-up or findings to inspections and/or survey documents
- # number of sanitary surveys
- # number of emergency response plans revision/evaluation/ establishment.
- # number of action plans
- # number of monitoring sampling
- # number of evaluation of monitoring results

As we have indicated, there have been serious delays in the start-up of the Project. Data is pending validation and will be provided in the DWSRF Performance Status Report. The results DOH expects to achieve during the project's duration will be part of the final report once it is completed.

The following tables present the activities programmed:

PILOT PROJECT FOR CAPACITIES MONITORING/SURVEILLANCE				
Activity / TimeTable	**Resp.Party**	**Deliverables**	**Measure of Success**	**Achievement**
Provide assistance to approximately 160 medium and large and certain small public water systems through the establishment and development of a new circuit riders pilot project directed towards but not limited to systems' capacity development (technical, administrative and financial status evaluation for the identification of limiting factors) and systems compliance evaluation. Develop a request for Proposal and execution of contract Development and evaluation of a Request for Proposal and execution of contract TT-Until contract expiration	DOH/ contractual personnel	Surveillance monitoring sampling to all-medium and large and certain small public systems Sanitary Surveys Emergency Response Plan	Number of systems monitored Number of samples Evaluation/ measurement of capacity development status (technical, financial and managerial). Request of a bacteriological monitoring frequency waiver.	The pilot project for capacities monitoring / surveillance started in the first quarter of fiscal year 2021 (October 2020). This project included a total of 160 medium and large and certain small public water systems. A total of nine (9) sanitary surveys were undertaken and fourteen emergency response plans were prepared.
Undertake surveillance monitoring samples island wide to approximately 160 medium and large and certain small public water systems. TT-Until contract expiration	DOH/ contractual personnel	Data evaluation and application	Number of systems monitored. Request of a bacteriological monitoring frequency waiver.	During FY 2022 a total of 126 data evaluations were taken.
Develop the Circuit Riders project with an alternate monthly frequency, where a total of approximately 160 medium and large and certain small community systems will participate. TT-Until contract expiration	DOH/ contractual personnel	Bacteriological monitoring frequency waiver.	Technical, financial, and administrative capacities increase or decrease.	During FY 2022 sixty-six (66) were evaluated regarding the technical, financial, and administrative capacities. Pending validation of results.
Use the Capacity Development Spreadsheet	DOH/ contractual	Application of the adapted CPE or	Results of the evaluation of the	During FY 2022 the evaluation of capacities

PILOT PROJECT FOR CAPACITIES MONITORING/SURVEILLANCE				
Activity / TimeTable	**Resp.Party**	**Deliverables**	**Measure of Success**	**Achievement**
where assistance and follow-up in the technical, administrative, and financial aspects are used to identify limiting factors for compliance. TT-Until contract expiration	personnel	capacity measurement spreadsheet. Evaluation of the bacteriological results and applicability for monitoring frequency waiver request.	data showing the capacities increased or changed for improvement. Operational changes implementation	was undertaken for 66 systems. Pending validation of results A total of two CPEs were undertaken during FY 2021 and sixty-six 66 during FY 2022 for a total of 68 during the last two years.

PILOT PROJECT FOR CAPACITIES MONITORING/SURVEILLANCE ACTIVITIES TO BE UNDERTAKEN (State Program Management Set-Aside)				
Activity	**Resp. Party**	**Deliverables**	**Measure of Success**	**TimeTable**
Provide assistance to approximately 160 medium and large and certain small public water systems through the establishment and development of a new circuit riders pilot project directed towards but not limited to systems' capacity development (technical, administrative and financial status evaluation for the identification of limiting factors) and systems compliance evaluation. Develop a request for Proposal and execution of contract Development and evaluation of a Request for Proposal and execution of contract	DOH/ contractual personnel	Surveillance monitoring sampling to all small systems Sanitary Surveys Emergency Response Plan	Number of systems monitored Number of samples Evaluation/ measurement of capacity development status (technical, financial and managerial). Request of a bacteriological monitoring frequency waiver.	Until contract expires
Undertake surveillance monitoring samples island wide to approximately 160 medium and large and certain small public water systems.	DOH/ contractual personnel	Data evaluation and application	Number of systems monitored. Request of a bacteriological monitoring frequency waiver.	Until contract expiration

PILOT PROJECT FOR CAPACITIES MONITORING/SURVEILLANCE ACTIVITIES TO BE UNDERTAKEN (State Program Management Set-Aside)				
Activity	**Resp. Party**	**Deliverables**	**Measure of Success**	**TimeTable**
Develop the Circuit Riders project with an alternate monthly frequency, where a total of 160 medium and large and certain small community systems will participate.	DOH/ contractual personnel	Bacteriological monitoring frequency waiver.	Technical, financial, and administrative capacities increase or decrease.	Until contract expiration
Use the Capacity Development Spreadsheet where assistance and follow-up in the technical, administrative, and financial aspects are used to identify limiting factors for compliance.	DOH/ contractual personnel	Application of the adapted CPE or capacity measurement spreadsheet. Evaluation of the bacteriological results and applicability for monitoring frequency waiver request.	Results of the evaluation of the data showing the capacities increased or changed for improvement. Operational changes implementation	Until contract expiration

Appendix E: RESILIENCY ACTIVITIES UNDERTAKEN REGARDING THE ASSISTANCE PROVIDED DUE TO HURRICANES IRMA AND MARIA (from October 2017 to January 2018)

RESILIENCY ACTIVITIES UNDERTAKEN REGARDING THE ASSISTANCE PROVIDED DUE TO HURRICANES IRMA AND MARIA (from October 2017 to January 2018)				
Systems' Name	**Follow- up Visits, Calls or Conferences**	**Orientation Drinking Water Assessment and/or FEMA Census documents**	**Coordinates Identification**	**Food provision**
Buenos Aires	√	√		
Acued. El Duque	√	√		
Rancho Grande	√	√		
Acued. Maizales	√	√		
Acued. Lomas del Viento	√	√		
Barcelona	√	√		
Villas de Guavate	√	√		
Acued. Bo. Cedro	√	√		
Com. Asilada Almirante	√	√		
Pelegrin Santos	√	√		
Carrasquillo	√	√		
La Sierra	√	√		
Las Corujas	√	√		
Juan Asencio	√	√		
Las Torres Andino	√	√		
Com. Madriguera	√	√		
Acued. El Llano	√	√		
Com. Rivera	√	√		
Bayamoncito, Mulitas Centro	√	√		
Sector Tiza	√	√		
Vec. Luis Lebrón	√	√		
Piñas Beatriz II	√	√		
Usuarios Pozo Profundo	√	√		
Caguas Real	√	√		
Jacanas Piedras Blancas I y II	√	√		
Asoc. Vecinos Sector La Casa	√	√		
Jacanas Sur	√	√		
Quebrada Arena	√	√		
Talante	√	√		
Matuya Bajo	√	√		
Villodes	√	√		
Los Vázquez	√	√		
Acueducto Rural Montones IV	√	√		
Com. Asomante	√	√		
Acueducto Rural Asomante 2	√	√		

RESILIENCY ACTIVITIES UNDERTAKEN REGARDING THE ASSISTANCE PROVIDED DUE TO HURRICANES IRMA AND MARIA (from October 2017 to January 2018)				
Systems' Name	**Follow- up* Visits, Calls or Conferences**	**Orientation Drinking Water Assessment and/or FEMA Census documents**	**Coordinates Identification**	**Food provision**
Lijas	√	√		
Helechal- Guayabo	√	√		
Acueducto Comunal Quebradillas	√	√		
La Tiza II	√	√		
Cañabón Sector El Parque	√	√		
Tabor	√	√		
Barrancas Centro	√	√		
Los Muchos	√	√		
Doña Mayo	√	√		
* All systems were visited or called for follow-up actions regarding their compliance with the monthly analysis required.				

DOH's MEETINGS/ACTIVITIES UNDERTAKEN REGARDING THE ASSISTANCE PROVIDED DUE TO HURRICANES IRMA AND MARIA (from October 2017 to January 2018)	
Entity	**Subject**
EPA	12-12: Meeting to acknowledge Non-PRASA systems' needs and action plan
Project Hope	Visits to systems: (10-27)
	Meetings or Conferences/telephone calls: 10-27: to provide assistance in the preparation of educational brochures/ presentations; 11-03: to know what kind of assistance they might provide
	Operator Certification workshop
Municipality of Cayey	Meetings or Conferences/telephone calls: 11-14: Electric power plants for systems in need
COE	DOH's referral for food assistance Meeting to acknowledge systems needs and action plan
RCAP	Provide list of small drinking water systems with schools

RESILIENCY ACTIVITIES FISCAL YEAR 2019

1. As of July 2019, two meetings were undertaken (October 2018, February 2019) with the American Red Cross (Cruz Roja Americana), and representatives from the Massachusetts Institute of Technology (MIT) regarding a project to install some equipment in order to provide water during emergencies in schools that serve as shelters. The Multi-sectorial Committee also participated in the discussion of the above-mentioned project. When the project commences or becomes active, the Fire Department and PRASA will also participate in the assembling of the equipment and water filling of the tanks, respectively. On going
2. Assistance and orientation to 150 systems regarding resiliency activities.
3. Security aspects were emphasized as part of the resiliency activities resulting from the hurricanes.
4. Continuous support of the circuit riders' partners facilitate the assistance provided because partners also undertake evaluations of the individual needs or case-by-case determinations for increasing their capacities. This is the case of the compliance with the lead/copper rule. This concurrent assistance is the result of the Interagency Committee, now known as Multi-sectorial Committee for the Organization and Compliance of the Community Aqueducts", established with the purpose of dealing with the Non-PRASA systems/Non-PRASA Strategy and as of today they continue providing assistance with resiliency activities for the recovery of Puerto Rico after the hurricanes. We have stated that this Committee continues providing the assistance through the supporting agencies.
5. During FY 2018 as a result of the hurricanes that although all systems were impacted by them, all of them were outreached and received assistance through this Multi-sectorial Committee approach. Although more funding was expected, the assistance was mainly focused on resiliency related to the infrastructure and treatment aspects.
6. Coordination was established and assistance provided with ten private entities in order to avail the delivery of workshops to small systems based on the training need of the systems as well as on the number of assistances/trainings provided to the systems. During fiscal year 2019 approximately six workshops were undertaken on this regard by ten sponsors.
7. The priority in the use of funds continues being towards the resiliency actions for the recovery of not only government activities, structure and infrastructure, but also towards drinking water systems of the Island emphasizing emergency response actions and the needed infrastructure in order to encounter new environmental disasters situations.
8. Orientation or direct assistances coordinated with partnerships, government, and non-government organizations (NGO).
9. all small Non-PRASA drinking water systems have been assisted, through:
    - direct visits in more than one occasion, where all limiting factors were identified;
    - providing food, potable water, assistance with the infrastructure;
    - assistance with the organization of systems and the registration of new ones. Still there are fiscal resources that organizations such as Water Mission continue providing them.
    - technical assistance in order to avail compliance with the monitoring that needed to be undertaken.
    - as of today, some prevails and are on-going focusing mainly on providing to the systems the tools that will enable them to overcome power difficulties such as those

encountered during the hurricanes. Thus, systems are working towards acquiring equipment that uses renewable energy such as solar panels. Casa Pueblo in the Municipality of Adjuntas is one example of resiliency activities provided by a NGO and empowerment of the communities, within others.

10. All systems have been assisted by coordinating resiliency activities where not only funding but infrastructure, treatment aspects and compliance issues were addressed
11. DOH in a coordinated effort with other NGO's undertook assessment of systems' infrastructure and compliance conditions as part of the remaining resiliency activities.
12. Assistance and coordination ass undertaken with the "Multisectorial Committee for the Organization and Compliance of the Community Aqueducts", to complete certain resiliency activities that were pending.
13. During fiscal year 2019 approximately six workshops were undertaken on this regard by ten sponsors.
14. DOH continues providing assistance to the systems in the process of obtaining licenses and/or undertaking the examinations.

Appendix F: SIGNIFICANT NON-COMPLIERS (SNC) AND DATA INCLUDED IN PREVIOUS REPORTS, BASED ON THE SNC

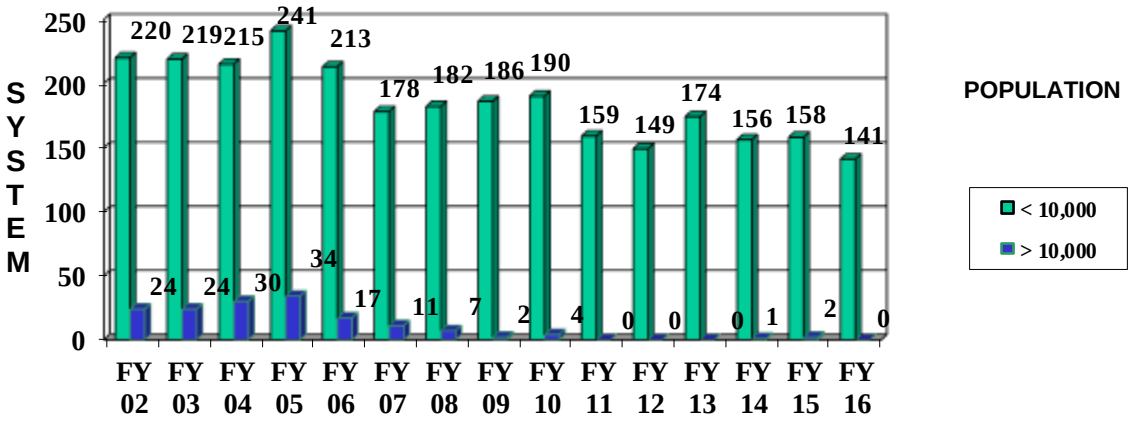
Significant Non-Compliers (SNC) are systems that had 4 or more violations in 12 consecutive month period. Up to fiscal year 2010 systems were in non-compliance when they incurred in four or more violations in the term of 12 months. Although DOH continued reporting the systems' violations as SNC up to the previous reporting period, for this report DOH starts presenting that information based on the Enforcement Targeting Tool that started in January 2010.

As of June 2001 (FY-00), the most significant public health issue was that approximately 30% of these systems were not providing any treatment or disinfection to the water they were serving. Of the total number of samples taken from the Non-PRASA systems (under the Non-PRASA Strategy by FY'00), approximately 53% resulted positive bacteriological samples. Only 5 systems out of 120 surface systems provided filtration (4.1%). As of September 2002 (FY- 02), 25% of these systems were not providing any treatment or disinfection to the water they were serving. This is an achievement when a reduction of a 3% has been obtained in approximately a year from FY 1999 to 2001. According to the Non-PRASA Strategy achievement report FY-01, of the total number of samples taken from the Non-PRASA systems, approximately 44% resulted positive samples. Only four (4) systems out of 113 surface systems provide filtration (3.5%) as approved by EPA. It can be appreciated that the number of systems moving towards compliance or providing treatment was increasing. Within this section there are several tables that prove systems moving towards compliance: Non-PRASA Systems Eliminated from the Strategy, Non- PRASA Systems in the Strategy with Disinfection FY 1996 to 2016, and Bacteriological Results in Non-PRASA Systems Included in the Strategy: FY 1996 to 2016).

As stated previously, during the reporting period ending September 2013, the systems included in the Non-PRASA Strategy that are having disinfection show a slight decrease of 1%. For the reporting period ending FY 2016, the systems included in the Non-PRASA Strategy that are having disinfection show a slight decrease of 2%. As we have stated previously, this decrease may respond to the fact that new systems may have been registered accounting for this slight decrease.

The following graph represents the distribution of SNC systems (or systems with the most serious or repeated violations since fiscal year 2012) in Puerto Rico by type and population for the last thirteen years (FY 2002 to 2016):

TOTAL SNC or SMSRV (BACTERIOLOGY AND TURBIDITY) BY POPULATION BY FY's



For FY 2002 we have 220 SNC systems with a population of less than 10,000, of which 196 are non-PRASA systems and 24 are PRASA systems and for FY-03 we have 219 SNC systems with a population of less than 10,000 out of which 199 are non-PRASA systems and 20 are PRASA systems. There is a decrease from 2002 to 2003 in the total number of the non-PRASA SNC system with a population of less than 10,000 decreased (220 versus 219). Nevertheless, the total number of Non PRASA SNC systems with a population less than 10,000 increased from 196 to 199.

During FY-04 we have a total of 215 SNC systems with a population of less than 10,000 out of which 197 are non-PRASA systems and 18 are PRASA systems. Compared to FY 2003, the total number of SNC systems with a population less than 10,000 diminished (219 versus 215), as well as the total number of Non PRASA SNC systems with a population less than 10,000 decreased from 199 to 197.

As of FY-05 we have a total of 241 SNC systems with a population of less than 10,000 out of which 208 are non-PRASA systems and 33 are PRASA systems. There is an increase in the total number of SNC systems from 2004 to 2005. Several factors may account for the increase, one of which is based on new regulation that enter in force or, as stated previously, new systems are identified and included in the Strategy. Nonetheless, once compliance is attained, systems are eliminated from the Strategy.

As previously stated, the number of SNC systems with a population of less than 10,000 has been reduced. For FY 2007, the reduction trend continuous through FY 2006 where there are 213 SNC systems with a population of less than 10,000 out of which 201 are non-PRASA systems and 12 are PRASA systems, and for FY 2007 there are 178 SNC systems with a population of less than 10,000 out of which 171 Non-PRASA systems and 7 PRASA systems.

Throughout FY 2008 up to FY 2010, the number of SNC systems with a population of less than 10,000 decreased. For FY 2008 there are 182 SNC systems with a population of less than 10,000 out of which 177 are Non-PRASA systems and 5 are PRASA systems. For FY 2009 there are 186 SNC systems with a population of less than 10,000 out of which 185 are Non-PRASA systems and 1 is a PRASA system. For FY 2010 there are 190 SNC systems with a population of

less than 10,000 out of which 187 Non-PRASA systems and 3 PRASA systems. Comparing the number of SNC Non-PRASA systems of 2006 to 2010 this number decreased for these two individual years, but within 2007, 2008, 2009 there was a slight increase due to the register of systems which were in existence but not registered within DOH. But when we examine 2011 and 2012 where in FY 2011 there are 159 SNC systems with a population of less than 10,000 out of which 158 are Non-PRASA systems and one is a PRASA system, and in FY 2012, there are 149 SNC systems (or systems with the most serious or repeated violations", or the abbreviation by initials of SMSRV) with a population of less than 10,000, all of them non-PRASA systems, this trend continues decreasing as well as up to 2014, with a variance in 2013 due to new regulations applicable during that year.

Also, for FY 2013, there are 174 SNC systems or SMSRV with a population of less than 10,000, all of them non-PRASA systems. In FY 2014, there are 154 SNC or SMSRV systems, where one is a PRASA system with a population greater than 10,000 and 153 are Non-PRASA systems with a population less than 10,000. Notwithstanding that there has been a decrease trend, when compared to the beginning of the Strategy, although in fiscal year 2005 there was an increase, the general trend is towards a decrease in the number of SNC systems for both PRASA and Non-PRASA systems' population less than 10,000, even though for two particular years there are apparent slight increases, these can be explained, as stated previously, due to the registration of existing systems or new regulations in force. In FY 2014, there are 154 SNC or SMSRV systems, where one is a PRASA system with a population greater than 10,000 and 153 are Non-PRASA systems with a population less than 10,000. For fiscal year 2015 there were 158 systems in violation with a population of less than 10,000, all of them non-PRASA systems, while for FY 2016 there were 141 systems in violation with a population of less than 10,000.

For FY 2017, there were 153 systems in violation: 149 systems with violations with a population of less than 10,000, and 4 PRASA systems. In FY 2018, there were 261 systems in violation: 251 violations in systems with a population of less than 10,000, and 10 PRASA systems. By the end of FY 2019 there was a total of 265 systems in violation: 247 with a population of less than 10,000, and 18 were PRASA systems with a population of 10,000 or more and there were 9 which were violations in PRASA systems with a population of less than 10,000.

We need to continue emphasizing that since the implementation of the Strategy, the general trend is the reduction of SNC systems and the increase in systems disinfecting.

For instance, as of January 2010 the Department of Health implemented in the Public Water Supply Supervision Program (PWSS), actions to reflect the new Enforcement Response Policy (ERP) and the Enforcement Targeting Tool (ETT). DOH completed the transition from the evaluation of systems through the traditional HSNC to the new EPA enforcement approach, the ETT and thus has been working since its effectiveness in fiscal year 2010.

Regarding the Capacity Development and the DWSRF programs, the term "historical significant noncompliance" and "significant noncompliance" are to be interpreted as systems with ETT scores of eleven (11) or greater.

Thus, this approach accounts also for the slight increases in numbers. Also, the intention of DOH of revising this Non-PRASA Strategy where now all systems will be included based on the ETT, notwithstanding if these are SNC or not, changes the total of systems PRASA or Non-PRASA less than 10,000 that will be included. This transitional period will show slight differences in the totals.

The terms "historical significant noncompliance" and "significant noncompliance" are to be interpreted for purposes of the Capacity Development and DWSRF programs implementation as systems with ETT scores of 11 or greater.

The ETT approach replaces the existing contaminant by contaminant compliance strategy, with one that focuses on the drinking water systems with the most serious or repeated violations or SMSRV for its abbreviation by initials. It uses a targeting tool/formula as a model for escalating responses to violations in a timely and appropriate response. This new strategy brings the systems with the most significant violations to the top of the list for enforcement actions in states. The ETT enables the prioritization of PWS by assigning each violation a "weight" or number of points based on the assigned threat to public health. Points for each violation of a water system are summed to provide a total score for that public water system (PWS). A PWS that incurs in a system score of 11 points or greater is considered as in significant Noncompliance with the National Primary Drinking Water Regulations (NPDWR) and is subject to the required enforcement actions.

This policy change began in fiscal year 2010, but, in January 2013 the ETT file and new ETT scores trackers were available for download. Under this new approach, the states <u>will not</u> be required to submit a list of HSNCs every three years. It is the intention that the list generated as part of the ETT can be used as one of the ways to identify systems that may lack technical, managerial, and financial capacity (TMF) and prioritizes the assistance that can be provided. This Department, instead of reporting SNCs, will be indicating which of those new community and non-transient non-community water systems have at any point during the first three years of operation, had unaddressed violations that incurred an ETT score greater than or equal to 11. Under the ERP, these systems are considered a priority system by EPA. This is a tool to determine steps to help the systems return to compliance. Priority is awarded to systems with higher population.

Great effort was required for addressing the needs and problems of these small systems in order to attain compliance based on the fact that there are limiting factors that in conjunction with the applicable regulations hinder their ability to comply. From **FY 2006 to FY 2016** the data[21] regarding the number of SNC systems in terms of bacteriology and turbidity is as follows:

		PRASA SNC*-MCL		PRASA SNC*-MR			Non-PRASA SNC*-MCL		Non-PRASA SNC*-MR			
FY	**POP**	**BACT**	**TURB**	**BACT**	**TURB**	**Total**	**BACT**	**TURB**	**BACT**	**TURB**	**Total**	**TOTAL**
FY-06	>10,000	0	17	0	0	17	0	--	0	--	0	17
	<10,000	0	11	0	1	12	16	--	185	--	201	213
Total		0	28	0	1	29	16	--	185	--	201	230
FY-07	>10,000	1	10	0	0	11	0	--	0	--	0	11
	<10,000	1	4	2	0	7	9	--	162	--	171	178
Total		2	14	2	0	18	9	--	162	--	171	189

[21] Data revised as of the end of each fiscal year.

		PRASA SNC*-MCL		PRASA SNC*-MR			Non-PRASA SNC*-MCL		Non-PRASA SNC*-MR			
FY-08	>10,000	0	7	0	0	7	0	--	0	--	0	7
	<10,000	1	3	1	0	5	13	--	164	--	177	182
Total		1	10	1	0	12	13	--	172	--	177	189
FY-09	>10,000	0	2	0	0	2	0	--	0	--	0	2
	<10,000	0	1	0	0	1	13	--	172	--	185	186
Total		0	3	0	0	3	13	--	172	--	185	188
FY-10	>10,000	0	4	0	0	4	0	--	0	--	0	4
	<10,000	2	1	0	0	3	14	--	173	--	187	190
Total		2	5	0	0	7	14	--	173	--	187	194
FY-11	>10,000	0	0	0	0	0	0	--	0	--	0	0
	<10,000	0	1	0	0	1	15	--	143	--	158	159
Total		0	1	0	0	1	15	--	143	--	158	159
FY-12	>10,000	0	0	0	0	0	0	--	0	--	0	0
	<10,000	0	0	0	0	0	4	--	145	--	149	149
Total		0	0	0	0	0	4	--	145	--	149	149
FY-13	>10,000	0	0	0	0	0	0	--	0	--	0	0
	<10,000	0	0	0	0	0	13	--	161	--	174	174
Total		0	0	0	0	0	13	--	161	--	174	174
FY-14	>10,000	0	0	1	0	1	0	--	0	--	1	**1**
	<10,000	0	0	0	0	0	8	--	145	--	153	**153**
Total		0	0	0	0	0*	8	--	145	--	153	**154**
FY-15	>10,000	0	2	0	0	2	0	--	0	--	0	**2**
	<10,000	0	0	0	0	0	6	--	152	--	158	**160**
Total		0	2	0	0	2	6	--	152	--	158	**160**
FY-16	>10,000	0	0	0	0	0	0	--	0	--	0	**0**
	<10,000	0	0	0	0	0	7	--	134	--	141	**141**
Total		0	0	0	0	0	7	--	134	--	141	**141**

* Due to the change in policy of the ERP/ETT on fiscal year 2012, the SNC systems are thereinafter referred to as "systems with the Most Serious or Repeated Violations", or the abbreviation by initials of SMSRV.

As it can be appreciated, the SNC systems continue in a reduction trend.

DOH has complied with the quarterly reporting required with the ETT and it is the intention to continue doing so, as well as to provide certain information/details related to the ETT in this Capacity Development Report. According to ERP/ETT lists submitted by EPA up to FY-14 to 2016 and 2017 to 2019 the total number of systems with score equal or above 11 were:

SYSTEMS WITH SCORES GREATER THAN 11 FROM FY 2014 to FY 2016*												
Systems	**Years / Quarters**											
	2014				**2015**				**2016**			
	Jan	**Apr**	**Jul***	**Oct**	**Jan**	**Apr**	**Jul**	**Oct**	**Jan**	**Apr**	**Jul**	**Oct**
PRASA Systems	21	14	37	48	55	65	40	44	50	52	48	46
Non-PRASA Private	11	10	10	10	13	10	2	1	2	3	2	1
Non-PRASA Communities	134	141	122	134	135	135	98	110	117	113	139	136
Total	**166**	**165**	**169**	**192**	**203**	**210**	**140**	**155**	**169**	**165**	**189**	**183**

* Data from FY 2011 to FY 2013 is included in Attachment 3.

** Data available as of June 2017.

SYSTEMS WITH SCORES GREATER THAN 11 FROM FY 2017 to FY 2019*												
Systems	**Years / Quarters**											
	2017				**2018**				**2019**			
	Jan	**Apr**	**Jul**	**Oct**	**Jan**	**Apr**	**Jul†**	**Oct†**	**Jan**	**Apr**	**Jul**	**Oct****
PRASA Systems	30	37	51	62	62	60	23	23	52	31	36	36
Non-PRASA Private	1	0	0	1	2	2	2	2	2	0	0	0
Non-PRASA Communities	112	107	63	73	69	69	6	6	27	26	25	25
Total	**143**	**144**	**114**	**136**	**133**	**131**	**31**	**31**	**81**	**57**	**61**	**61**

* Data from FY 2011 to FY 2016 was included in the previous period report provided to EPA.

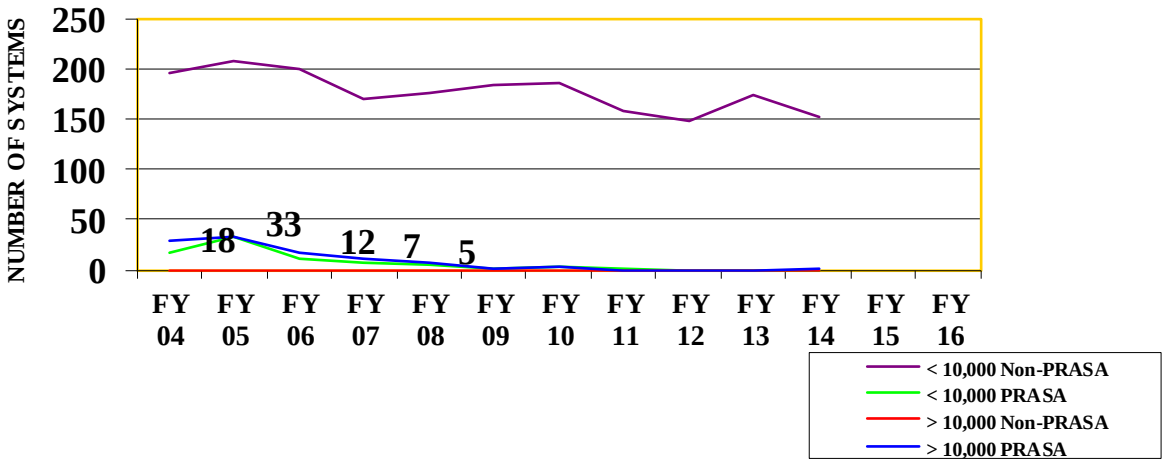
** Data available for the quarter of October 2019 is subject to EPA's revision of the data they submitted to DOH, as EPA indicated the data had an error. PRASA's data is based on that information. The Non-PRASA section did not evaluate that information as EPA said it contained an error. However, the data for this quarter was revised and included.

† Due to the extreme circumstances resulting from the hurricanes Irma and Maria violations corresponding to the next quarter after the hurricanes were not registered. Also, data entry was not possible due to problems with the software of SDWIS, which has delayed the register of violations corresponding to the following months.

We have to point out that extreme conditions resulting from the hurricanes Irma and María impaired the ability to continue the regular tracking needed to work the quarterly ETT list. During the months of September through December 2017 and as an exception, violation were not registered in the SDWIS. Moreover, DOH has encountered software difficulties when entering the data corresponding to the quarter of July and October 2018. This is known to EPA and EPA is working on the access to the SDWIS system to register this information.

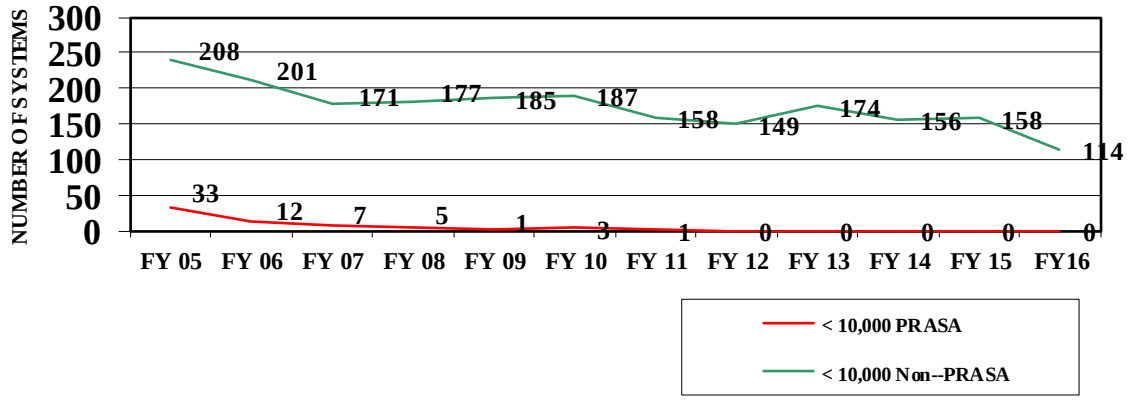
The following graph represents the distribution of SNC systems (or systems with the most serious or repeated violations since fiscal year 2012) in Puerto Rico by type and population from the last twelve years (FY 04 to 16):

POPULATION OF SNC SYSTEMS BY TYPE AND FY AS OF SEPTEMBER 2016

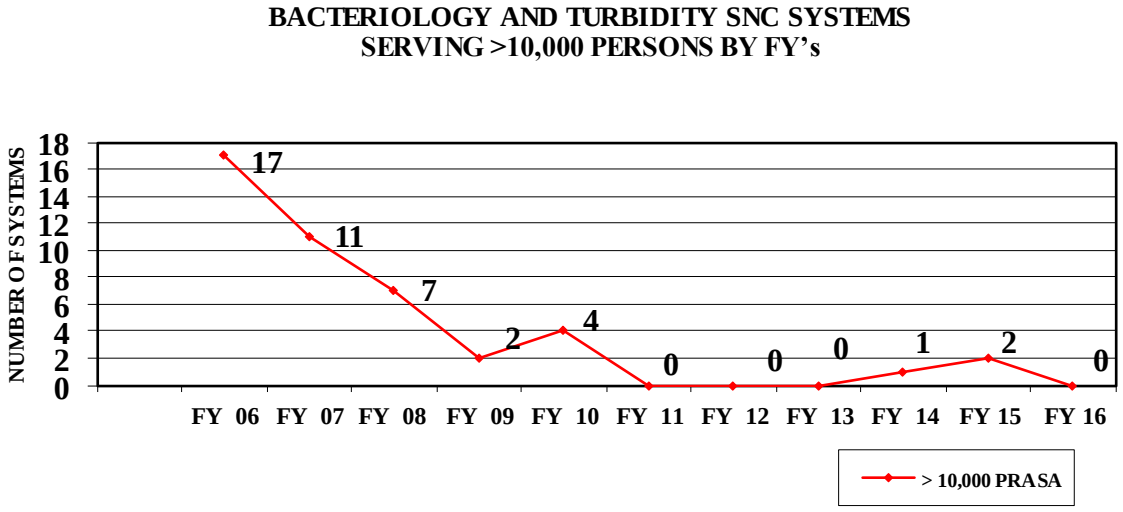


Behavior of SNC systems (or systems with the most serious or repeated violations since fiscal year 2012) in terms of bacteriology and turbidity by type and population can be appreciated in the following graphs:

BACTERIOLOGY AND TURBIDITY SNC SYSTEMS SERVING <10,000 PERSONS BY FY's



As of today, the Non-PRASA Strategy continues in implementation since 1996. It was



established with the purpose of bringing these small systems to compliance with Commonwealth and Federal regulations. Throughout these years EPA has recognized this strategy as a successful approach in bringing these systems to treatment and compliance.

Due to the changes as a result of the implementation of the ETT, systems classification has varied. DOH understands that after the implementation of the Non-PRASA Strategy and where there have been several changes in the applicable regulations, the use of the ETT, and changes in reporting, there was a need to cope all these changes and methods by revising the Non-PRASA Strategy. For this revision close coordination with EPA was undertaken and their comments considered. Its formal submittal to EPA was in September 2014 and on November 2015 it was signed. In accordance with the priorities established in the revised Strategy, the number of systems with more than 11 violations reported has decreased. The revised Strategy is a great tool in the assistance provided to the systems towards attaining their compliance goals. Once a system reaches more than 11 violations, it becomes a priority to attend.

As it can be appreciated, DOH initiated the capacity development effort in assisting these small systems with the Non-PRASA Strategy included as part of the CDS, which directs its exertions through different approaches covering and providing assistance in the main three areas of capacity: technical, financial and managerial; aspects that comprise capacity development program.

Throughout FY 2008 up to FY 2010, the number of SNC systems with a population of less than 10,000 decreased. For FY 2008 there were 182 SNC systems with a population of less than 10,000 out of which 177 are Non-PRASA systems and 5 were PRASA systems. For FY 2009 there were 186 SNC systems with a population of less than 10,000 out of which 185 were Non-PRASA systems and 1 was a PRASA system. For FY 2010 there were 190 SNC systems with a population of less than 10,000 out of which 187 were Non-PRASA systems and 3 were PRASA systems. Comparing the number of SNC Non-PRASA systems of 2006 to 2010 this number decreased for these two individual years, but within 2007, 2008, 2009 there was a slight increase due to the register of systems which were in existence but not registered within DOH. But when we examine 2011 and 2012 where in FY 2011 there are 159 SNC systems with a population of less

than 10,000 out of which 158 are Non-PRASA systems and one is a PRASA system, and in FY 2012, there are 149 SNC systems (or systems with the most serious or repeated violations", or the abbreviation by initials of SMSRV) with a population of less than 10,000, all of them non-PRASA systems, this trend continues decreasing as well as up to 2014, with a variance in 2013 due to new regulations applicable during that year.

Also, for FY 2013, there are 174 SNC systems or SMSRV with a population of less than 10,000, all of them non-PRASA systems. In FY 2014, there are 154 SNC or SMSRV systems, where one is a PRASA system with a population greater than 10,000 and 153 are Non-PRASA systems with a population less than 10,000. Notwithstanding that there has been a decrease trend, when compared to the beginning of the Strategy, although in fiscal year 2005 there was an increase, the general trend is towards a decrease in the number of SNC systems for both PRASA and Non-PRASA systems' population less than 10,000, even though for two particular years there are apparent slight increases, these can be explained, as stated previously, due to the registration of existing systems or new regulations in force.

We need to continue emphasizing that since the implementation of the Strategy, the general trend is the reduction of SNC systems and the increase in systems disinfecting.

Regarding the surveillance bacteriological samples collected at Non-PRASA systems, by the end of FY 04, out of 979 surveillance bacteriological samples collected at Non-PRASA systems, 507 (52%) were negative; by the end of FY 05, out of 1,066 surveillance bacteriological samples collected at Non-PRASA systems 595 (56%) were negative, for an increase of 4% during this period. By the end of FY 06, out of 1,121 surveillance bacteriological samples collected at Non-PRASA systems 634 (57%) were negative, with an increase of one per cent (1%) from FY05 to FY 06. By the end of FY 07, out of 1,125 surveillance bacteriological samples collected at Non-PRASA systems, 681 (61%) were negative, for an increase of 4 percent in comparison to the previous year and an increase of 9% from FY 04 to FY 07. During the ten years of implementation of the Strategy a 35**%** of increase in the number of negative results has been achieved.

At the end of FY 08, out of 1,132 surveillance bacteriological samples collected at Non-PRASA systems, 710 (63%) were negative, for an increase of percent in comparison to the previous year and an increase of 10% from FY 04 to FY 08. By the end of FY 09, out of 1,247 surveillance bacteriological samples collected at Non-PRASA systems, 826 (66%) were negative, for an increase of 3% in comparison to the previous year and an increase of 13% from FY 04 to FY 09. By the end of FY 10, out of 983 surveillance bacteriological samples collected at Non-PRASA systems, 638 (65%) were negative, for a slight decrease of 1 percent in comparison to the previous year and a net increase of 12% from FY 04 to FY 10. During the seventeen years of implementation of the Strategy a 41% of increase in the number of negative results has been achieved.

BACTERIOLOGICAL SURVEILLANCE RESULTS IN NON-PRASA COMMUNITY SYSTEMS INCLUDED IN THE STRATEGY: FY 1996 TO 2004									
	FY 96	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04
Number of Negative Results	252	456	827	703	620	896	944	684	507
Total Number of Samples	968	1164	1773	1544	1311	1607	1659	1278	979
% Negative Results	26	39	46	45	47	56	57	53	52

BACTERIOLOGICAL SURVEILLANCE RESULTS IN NON-PRASA COMMUNITY SYSTEMS INCLUDED IN THE STRATEGY: FY 2008 TO 2016						
	FY 05	FY 06	FY 07	FY 08	FY 09	FY 10
Number of Negative Results	595	634	681	710	826	638
Total Number of Samples	1066	1121	1125	1132	1247	983
% of Negative Results	56	57	61	63%	66%	65%

Following is the former historical SNC list for Non-PRASA systems:

Non-PRASA SNC Systems		
Fiscal Year	Total SNC	Non-PRASA
2000	310	223
2003	275	200
2006	273	210*
2007	189	171
2008	189	177
2009	188	185
2010	201	194
2011	159	158
* Figures used for the 2008 Report. For this Report, the PRASA systems are 29 and the Non-PRASA are 201 for year 2006		

The FY 2003 SNC shows a reduction of 10%; and FY 2006, a reduction of 6% in comparison to FY 2000 SNC. the FY 2009 SNC shows a reduction of 12%; and FY 2012, when the systems classified as SNC list changed to be called as “Systems with the most serious or repeated violations” or SMSRV for its abbreviation by initials, a reduction of 29% in comparison to FY 2006 SNC.

There have been changes in the regulations that have made a difference and have provoked changes in the management and compliance of systems. If we look to FY 2006 Historical List we can appreciate the at that point in time there were 210 Non-PRASA systems. Out of these, 164 or 78% were included in the Non-PRASA Strategy and the remaining 46 systems were been managed or addressed with the technical and educational assistance initiatives and or pilot projects previously mentioned, as well as the State Enforcement existing procedures at the time.

For Non-PRASA systems, the majority of SNC identification was based on bacteriology compliance determination. We have to point out that now, currently, with the latest revision of the Strategy, all Non-PRASA systems are included in the Strategy as way to ensure follow-up to any particular situation that may emerge in regard to compliance issues. This approach is in an effort to address and outreach more systems and thus help them, guide them and give follow-up to their process of compliance.

Once again the reduction tendency or pattern continues for the number of SNC systems and or of SMSRV. As it can be appreciated this Department will continue directing all its efforts towards the increase of the compliance. The strategy demonstrates that the efforts undertaken continue proving an improvement in the compliance pattern and thus the reduction of SNC.