KCWA

Kent County Water Authority

October 12, 2022

Mrs. Luly Massaro
Commission Clerk
Public Utilities Commission
89 Jefferson Boulevard
Warwick, Rhode Island 02888

Re: Infrastructure Program

Dear Mrs. Massaro:

In accordance with Kent County Water Authority's most recent rate order, we are required to file an Infrastructure Report semi-annually. The attached reports on Infrastructure are through June 30, 2022.

If you have any questions or members of your staff would like further information, please feel free to call at any time.

Very truly yours,
Kent County Water Authority

David L. Simmons, P.E.
Executive Director/Chief Engineer

cc: Board Members

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Kent County Water Authority

Report on Progress of IFR Projects
As of June 30, 2022

Description	Proj #	Estimate	Expended	Estimated Funds to Complete
IFR 2021 (2016ABC)	290	$14,105,343	$7,291,130	$6,814,212
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IFR Report

This report contains information on the approved programs under the current Infrastructure Replacement Program (IFR) restricted funding approved by the PUC. The restricted IFR account is fully funded at $6 million annually with the debt service rolling off upon paying the bond in full.

Current Infrastructure Projects

IFR 2021

IFR 2021 includes several critical upgrades to the KCWA, or the Authority, distribution system to increase resiliency and higher quality of service. The project scope is comprised of replacement and new installation of water main and supporting infrastructure in the Towns of Coventry, East Greenwich, West Warwick, and Scituate. IFR 2021 involves the installation of approximately six (6) miles of pipelines consisting of primarily 12-inch and 8-inch ductile iron pipe and three pressure reducing valve (PRV) stations. This work includes reservicing existing and new customers to higher pressures, looping dead end mains to increase water quality, and inactivation of old obsolete and degraded piping. As with all IFR pipeline replacement projects on existing roadways, pavement restoration is incorporated into this project resulting in higher quality road surfaces when the projects are completed. Also included are the installation of service connections, furnishing of telemetry equipment and programming to KCWA's supervisory control and data acquisition (SCADA) system, connections to existing mains, hydrants, fittings, by-pass piping systems, and other related appurtenances. The IFR 2021 construction bid was awarded on February 18, 2021 to CB Utility Co. Inc. This project will be completed in December 2022 with the exception of final paving by April of 2023 at a contract price of $13,249,695.

IFR 2022

IFR 2022 has been designed to continue the aggressive replacement of critical infrastructure for several high priority locations within the KCWA distribution system. The work of this project generally involves the installation of water mains in the Town of West Warwick, which will serve the Kent County Water Authority. This project involves installing pipelines consisting of

approximately 7,600 linear feet of 16-inch ductile iron pipe, 4,360 linear feet of 12-inch ductile iron pipe and 2,100 linear feet of 8-inch ductile iron pipe. Specifically, the project involves the replacement of 1887 vintage cast iron main along Cowesett Ave. While in the roadway, we will be simultaneously installing a separate high service line to loop several dead ends mains and reservice localized areas of historic low pressures. A major component to this project is the replacement and relocation of water main at the intersection of Cowesett Ave and Bald Hill Rd. Water main failure at this location has the potential of catastrophic collateral damage to surrounding infrastructure due to the recent installation of a natural gas high pressure underground station and infrastructure in close proximity to KCWA's existing water infrastructure.

Future IFR Lead and Galvanized Service Replacement

With the recent passage of the Bipartisan Infrastructure Law (BIL), the Drinking Water State Revolving Fund (DWSRF) will be receiving approximately $292 million of additional funding for projects, including $179 million for lead service line (LSL) and galvanized service line replacements. Currently, 49% of the funding is allocated toward principal forgiveness/grants on full private and public side replacement. KCWA is working to put together a project to obtain the grant funding to remove any remaining lead and galvanized service lines in the system.

Meter Replacement Program

Small Meters – After approximately three years, the small meter replacement project is 99.97% complete. Revenues were collected in a restricted account to replace all meters sized two inches and below as approved in the PUC rate filling Docket 4611. It was estimated that approximately $6.6 million dollars would be needed to be collected to complete the project over three years at which time a compliance filing would be submitted to the PUC to potentially terminate the funding. An extension to the compliance filing was granted by the PUC to allow KCWA to continue funding of the program through August of 2020 under abbreviated rate filing Docket 5012. The extension was granted with intention to accrue additional funds to pay off and defease outstanding debt/bond issues. All bond funds were paid off and/or defeased and the funding was ceased for the meter program and given back to the rate payers in a rate reduction effective September 1, 2020, as approved under PUC Order 23896 Docket 5012.

The total proposed meter project cost was $6,169,192 for the acquisition and installation of approximately 25,000 meters. There was a three month delay due to the effects of the Covid-19 pandemic and accessibility issues in April and May of 2020. There were additional delays due to the uptick in Covid-19 cases in Fall of 2020 and many people postponing appointments until the vaccine was more widely distributed and the number of positive cases were significantly reduced. In addition to Covid, the extreme drought in 2020 and abnormal use patterns experienced from the pandemic spurred a flurry of billing disputes from summer usage. This created a domino effect whereby a large contingent of customers reached out to local leaders who broadcasted their concerns over multiple traditional and social media outlets. Many believed that the new meters were faulty because of the higher summer bills. However, after completing over 600 investigations by KCWA and DPUC, it was concluded that the increased usage was primarily the result of outdoor water use from irrigation and/or recreation. In fact, the massive increase in water use during the summer of 2020 was experienced by every water supplier in the State of Rhode Island.

Unfortunately for KCWA, the bad press shattered consumer confidence and reinforced the negative sentiment and mistrust. This then led to many customers not wanting KCWA into their homes and businesses to replace meters. This continued through the majority of 2021 where many now cited continued Covid concerns to stop meter installs. In October of 2021, there were still 1500 locations that needed to have their meter changed. Ten percent of these customers were still not allowing the meters to be changed due to Covid-19 concerns. The others were mostly plumbing related issues and/or final scheduling is in process with the contractor. As of September of 2022, plumbing issues constitute the last 0.03% left in the small meter project. The Authority is working with these customers to complete the plumbing before the end of this year.

Large Meters - The original meter program funding under Docket 4611 did not include the replacement of large and medium meters sized 3-inches and above. There are approximately 300 accounts out of 27,500 that fall into this category but contribute 20% of the revenues to the Authority. The Authority strongly felt that the large meter customers needed the most current and correctly sized metrology in place to accurately monitor the use from these customers in real time with the latest technology.

Docket 5012 expanded the meter program to include a right-sizing survey for larger meters sized three inches and above to best determine if size and type of each large meter is correctly matched to the downstream use. The survey outlined the recommendations on replacement of unitized

measuring elements (UME) and update/replace old turbine meters to new ultrasonic meters. The goal of the program is to apply a uniform metering technology to deliver improved service and billing that is in line with current utility standards. The Authority is also providing certified large meter testing for every meter checked, updated, and or installed under the program to ensure baseline accuracy. All meters are being outfitted with the same latest generation automatic meter reading (AMR) technology and metrology as what was installed on all meters sized 2-inches or less. We are also outfitting every large meter with additional updated microchips installed in the register heads that have the ability to broadcast a Long-Range Wide Area Network (LoRaWAN) signal. When activated, the Authority and the customers will have the ability to monitor these accounts in real time similar to expensive fixed network systems without additional infrastructure costs. This phase of the project is currently in progress and should be completed by Winter of 2022.

Monthly Billing and Utility Billing/Customer Information Systems

It was the goal of the Authority to expand monthly billing to all customers under Docket 5012. The largest obstacle for monthly billing for any utility is to be able to read the meters over several days and produce timely bills. However, it was felt at the time by PUC/DPUC that this request would be better situated in a future rate filing after the full completion of all the meter replacements in the system with radio remote reading capabilities. However, the billing disputes generated multiple formal requests to the Authority by both the customers and members of the General Assembly to move to monthly billing sooner with a new billing format. Fortunately, KCWA had already started transitioning to new utility billing and customer information systems to modernize these systems to work in concert with the new AMR system. KCWA deployed a cloud-based utility billing and customer information system (UB/CIS) to allow automatic bill payment and a customer portal to view and pay their bill online starting March 2021. KCWA also redesigned the physical bill to present the customers with all of the information needed to quickly compare past use and billing history to manage budgeting and locate higher-than-normal water consumption via comparative graphs and critical alerts. The alerts are shown on the face of the new bill in the bottom left. Since the UB/CIS deployment, 11,135 customers have signed up to some, or all of the portal features available. Specifically, out of the 27,489 customers, 4,078 have enrolled in automatic payment withdrawal, and 4,287 are participating in paperless E-billing.

Also in March of 2021, the Authority officially filed a Tariff Advice and Petition for Relief, Docket 5133. Under this docket, the RIPUC approved the move all customers with meters sized two inches and less onto monthly billing rolling out over three consecutive months. The three-month rollout aligned with the substantial completion of the meter change out program. The first monthly bills started in August 2021 for Coventry customers, followed by West Warwick in September, and lastly Warwick/East Greenwich in October.

The deployed metering and billing systems were tremendously successful. KCWA has been able to perform high usage checks for the customers to help detect problems earlier such as water leaks and proactively alert customers. Customers often call on KCWA to investigate issues. The new AMR meter technology working in concert with the UB/CIS systems has armed the staff to perform temporal consumptive use analysis with detailed information that can be immediately shared with the customer. The meters store/log up to 90 days of usage data that can be acquired via software on a laptop, tablet, or smartphone via remote communication. These data can be presented to the customer in person, emailed, or presented via a customer portal. Many times, high use coupled with multi day continuous consumption flags are investigated further by the staff to gather additional data and/or determine the root cause of a flag. The data analytics and reporting provided by the software has driven more efficient and effective post processing prior to uploading to the utility billing/customer information systems and enhanced service to the customer.

Hydraulic Model / GIS/Utility Cloud

Hydraulic Model: The Authority updated its hydraulic model and integrated the model with our GIS system using WaterGEMS. Integration with the GIS system and the tools in WaterGEMS now allows for hydraulic and pipeline evaluations inclusive of age, material, diameter, break history, water quality, static and residual pressure analysis, and scenario development more efficiently for optimization and the creation of IFR and CIP projects. The Authority is now performing full in-house hydraulic modeling for customers/developers requesting these services.

Utility Cloud: The Authority has launched the integration of Utility Cloud to manage its assets and project programming. Specifically, storing all critical operation and maintenance data, as-builts for development of a systematic preventative maintenance program for our pump stations, tanks, treatment plants, and pressure reducing stations. Small system assets and programs will also be tracked. These include, but are not limited to, hydrants, system valves, large meter

testing, backflow prevention testing, Digsafe, and private construction inspection. Utility Cloud will also rest on our CIS system for the office staff and managers to create work orders that are available on the operator phones or tablets in the field.

Quonset Development Corporation (QDC)Wholesale Interconnection

QDC and KCWA both use ground water wells located within the Hunt River Aquifer. KCWA has two wholesale interconnections from Providence Water Supply Board (PWSB) that are conveyed to the South to backstop the existing supply in that region. Analysis performed by the RI Department of Environmental Management suggested that the intermittent surface flow conditions may be influenced by high water withdrawals from the Hunt aquifer. The water supply being conveyed through KCWA to QDC will purportedly relieve the stress on the aquifer and provide an alternative water source thus enhancing the reliability of the available water to allow them to maximize growth within the business park. QDC wanted to present to all new businesses that are interested in coming to RI and produce new jobs that there are zero utility constraints regarding available water. Based on these finding, QDC determined that it was in the best interest of the park to enter into a permanent wholesale agreement with KCWA.

An interconnection agreement between QDC and KCWA was executed on March 19, 2021. The PUC approved the wholesale rate to feed QDC in the most recent rate filing PUC Docket 5012. QDC completed the construction of the infrastructure necessary to start conveying water to the business park in the Spring of 2022. The Rhode Island Department of Health required a corrosion control study prior to the activation of service. This was completed in August of 2022 and the service has been turned on at a rate of between 100-200 GPM. The current feed design will accommodate the full build out of the park at 1.7 million gallons per day. KCWA has sufficient capacity to meet these demands.