



VIRGIN ISLANDS
WATER AND POWER
AUTHORITY

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OFFICE OF THE EXECUTIVE DIRECTOR

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TESTIMONY

I am Andrew L. Smith, Chief Executive Officer and Executive Director of the Virgin Islands Water and Power Authority, WAPA or the Authority. I would like to thank the Honorable Chair, Senator Potter, as well as other members of the Senate present for the opportunity to appear before you today. Good afternoon to you, the listening and viewing audience, and the WAPA family.

Joining me in person from the Authority:

Julius Aubain, Chief Information Officer

Ashley Bryan, Chief Operating Officer - Electric

Don Gregoire, Chief Administrative Officer and Incident Commander

Jacob Lewis, Chief Financial Officer

Dionne Sinclair, General Counsel

Ambi Blyden, Manager Design and Construction and System Planning

Marlene Francis, Manager Customer Service

Cordell Jacobs, Director Transmission & Distribution

Sabrina King-Leonce, Director Human Resources

Chavanté Marsh, Director Project Management

Shanell Petersen, Director of Communications

Densie Rhymer, Director Disaster Recovery

Kimberly Slodden, Manager Design and Construction

Joining from the Authority from the Legislative Chambers on St. Croix:

Matthias Clarke, Mechanical Engineer
Jamal Hodge, Electrical Engineer
Suresh Sookraj, Electrical Engineer
Belgrave Stedman, Electrical Engineer

In addition to the hard work the WAPA team does running the day-to-day operations of the Authority, WAPA is making significant investment in the Territory's Electric and Water system with the invaluable financial, technical, and planning support of several of our federal and local partners. I will provide an overview of the Disaster Recovery, Infrastructure, and Planning work and investment that has been completed, is underway, or is in the planning stages for the Territory and then the respective member of the WAPA team responsible for the various initiatives will provide a more detailed presentation on the initiatives.

We have organized the various initiatives underway at WAPA into three categories: Facilities, Systems, and People.

However, before turning to each of the categories of initiatives I just outlined, I want to provide an overview of the engagement of our various federal partners with the Territory as well as the overall substantial investment being made in the Territory by our federal partners.

The various federal agencies supporting WAPA's Territory-wide Disaster Recovery and Infrastructure investment include the Federal Emergency Management Agency (FEMA), Housing and Urban Development (HUD), Environmental Protection Agency (EPA), Department of Energy (DOE), Department of Interior (DOI), National Renewable Energy Laboratory (NREL), Sandia, Rocky Mountain

Institute (RMI), Department of Homeland Security (DHS), and the U.S. Treasury.

In total, our federal partners have invested over \$2 billion in the Territory's electric and water infrastructure, and WAPA anticipates receiving over \$1 billion in additional funding for further investment, principally for Prudent Replacement Public Assistance which will modernize the entire St. Croix water distribution system to the latest standard. As you are aware and I will discuss further, discolored brown water is of primary concern on St. Croix. WAPA has modernized sections of its water infrastructure through the support of EPA grants, and the water service has improved in those areas. Unfortunately, modernizing one section of the water system can cause pressure issues, leaks, and water discoloration in adjacent sections of the water distribution system. Also, while new installations use PVC pipes, in some instances, water must travel through old iron pipe sections of WAPA's water system and that can cause brown water, even in newly modernized sections of the water system. WAPA undertakes a maintenance program and aggressive system flushing program to try and mitigate the impact of brown water; however, the advanced age of our water infrastructure poses a significant challenge in this regard. The St. Croix prudent replacement of the entire water distribution will help to address the discolored water and pressure issues on the St. Croix water system. I will address brown water on St. Croix in more detail later in my testimony.

Facilities

WAPA has made and continues to make significant investments in facilities through grant funding support from our federal partners. Funding for composite pole installations and undergrounding of electrical transmission and distribution feeders helps harden the Territory's electrical grid from damage from natural disasters.

Composite pole installation is approximately 90% complete Territory-wide. Cruz Bay St. John undergrounding is complete as are the Midland, Container Port, and Golden Grove undergrounding projects on St. Croix. Additional undergrounding projects are slated to start soon to address other critical feeders across the Territory. Undergrounding projects are targeted to serve both the most critical infrastructure and the largest number of customers that can be addressed by a given project.

Modernization of substations is also critical to hardening the Territory's electrical infrastructure. Grant funds have been appropriated to modernize the Donald C. Francois substation, which serves critical infrastructure on St. Thomas including Schneider Regional Medical Center and central Charlotte Amalie, as well as Tutu, the East End, and St. John substations.

Federal funding is also supporting Microgrids on St. Croix, St. Thomas, and St. John, which include renewable generation, battery energy storage systems (BESS), and electric distribution infrastructure such that the Microgrid can function as an islanded electrical system.

Significant federal funds have also supported investment in water infrastructure. The Clifton Hill project on St. Croix is complete and the Campo Rico project is 66% complete. Hannah's Rest has not started construction. Materials have been ordered, but varying delays in receiving materials have pushed the project start to January 2024. On St. Thomas, rehabilitation projects for Mahogany Estate and Blackbeard Hill have been submitted to DPNR for review. American Rescue Plan Act, or ARPA, funding is earmarked for Nazareth to extend water service to the community. ARPA funding is also supporting two large utility coordination projects. The 30-mile pipeline Northside Road Rehabilitation project and the 5-mile Anna's Retreat Phase 2 expansion project are in the planning and design phase. In all approximately \$85

million of ARPA funds have been set aside for water projects. As discussed previously WAPA is pursuing a FEMA Prudent Replacement Public Assistance Program to support modernizing the entire St. Croix water system.

The St. Croix water system and brown water have been a concern in the community for some time, but the concern has intensified over the past several weeks. Accordingly, I want to address the causes of the discolored water, why instances of discolored water have increased in recent weeks, and the short-term, medium-term, and long-term efforts that WAPA is undertaking to address water quality in St. Croix.

Before I discuss water in more detail, I want to be clear that the current brown water and residual odor in the water are unacceptable to me and the Authority. As I will discuss, WAPA has been taking many steps to address the issue.

Recent Increase in Discolored Water

The age of the St. Croix water system is at the core of the source of discolored water on St. Croix. The parts of the system that have not been upgraded and modernized are approximately 60 years old and have ductile iron pipe which deteriorates over time. The bulk of the brown water is due to the deterioration of the pipes and sediment ending up in the water.

The instances of brown water have increased in recent weeks due primarily to low water inventory on St. Croix. At this point in the year, WAPA's water storage tanks would typically be close to 100% full. But due to the drought, WAPA's water tanks are currently only about 50% full, with some tanks having fallen well below 50% full over the past several weeks before being recently restored to at least approximately

50% full. The low water inventory drives discolored water for two reasons.

First, the St. Croix water system is a gravity-fed system meaning that the fuller a storage tank is, the more pressure it places on the water downstream. Good water pressure results in increased flow rates throughout WAPA's system, which reduces the brown water. The current low inventory levels result in lower water pressure, resulting in lower water flow volumes, and thus increased discoloration.

Second, WAPA historically has undertaken aggressive, proactive flushing programs to reduce the amount of brown water, primarily by opening fire hydrants on a rotating basis. When WAPA has ample water inventory, the flushing program does not pose any problems. But, when WAPA's water inventory levels are low, as described above, aggressive flushing only lowers water inventory levels more and makes the water pressure and water discoloration problem worse. WAPA is continuing to flush its system to the extent that it can accommodate flushing; however, current flushing programs are below historical levels. Recent rain in St. Croix is helping WAPA to rebuild water inventory because customers with cisterns have stopped using WAPA water now that rainfall has helped fill their cisterns.

Fredericksted has been the most impacted by brown water for the longest time and is a key focus of WAPA's system flushing program. The impact on Fredericksted and the west end of St. Croix is not due to WAPA underinvesting in Fredericksted to the advantage of other part of St. Croix. Instead, the impact on Fredericksted is due to WAPA's system design. WAPA's system is a gravity fed system as I described, and the farther a customer is from the high-pressure point in the system, which is the highest elevation of water storage, the lower that customer's water flow, as I also described. Accordingly, the instances of brown water

increase as distance from the high point in the WAPA water system increases.

Finally, an odor persists in the water, and I want to address the cause of the odor. The source of the odor was due to an influx of sargassum several weeks ago. The filters in the reverse osmosis water production plant filter out large particles in the seawater that is feeding into the reverse osmosis system; however, once the sargassum starts to sink and dissolve, the resulting discoloration, and associated odor, in the seawater that ends up in the drinking water cannot be removed via filtration. The sargassum influx has eased, but the odor persists in the water for two reasons.

First, because of the drought, customers typically on cisterns are now taking WAPA water, and that water has residual odor from the sargassum because that water has been sitting in those customers pipes and has not been circulating. Second, the low system flow described above as it relates to brown water causes the same residual effect of the odor from sargassum.

Increase in the Water LEAC

There have been calls for WAPA to not increase its water LEAC due to the brown water.

WAPA does not make a profit on the rate it charges its customers. WAPA is 100% a financial pass-through business. The rates WAPA charges its customers are set by the Virgin Islands Public Services Commission, or PSC, to only recover WAPA's costs and not a penny more. As has been well documented, WAPA historically has charged its customers less than what it costs WAPA to operate. In addition to inefficiencies at WAPA, which the current leadership team is addressing, this chronic under-recovery has crippled WAPA financially.

The increase in the water LEAC is only to recover costs that WAPA is paying. WAPA has a contract with Seven Seas Water, the company that makes drinking water for WAPA, and that contract includes a US Bureau of Labor Consumer Price Index (CPI) clause that the contract rate increases with increases in the CPI. As we all know the price of goods and services has been rising and the CPI has increased. The contractual rate WAPA pays Seven Seas increased due to the increase in CPI, and therefore, WAPA requested an increase in its water LEAC rate from the PSC to recover this increased cost. The PSC and its Staff reviewed the request and approved WAPA's current water LEAC rate. It is important to note that while we are discussing Seven Seas Water, Seven Seas Water is not the source of the brown water some customers are experiencing in St. Croix. Water at the source of Seven Seas' production is clear. As discussed earlier, it is WAPA's aged infrastructure that causes the discoloration.

Prior to the current increase in the water LEAC rate, WAPA had not requested an increase in its water LEAC for two years, and WAPA under-recovered revenue it collected from its customers by approximately \$2 million more than its operating expenses, or almost 10% of WAPA's total water revenue. The \$2 million in under-collected water revenue only means that WAPA has less money to invest in other parts of its water operation.

What is WAPA Doing to Address the Issue in the Short, Medium, and Long-Term?

In the short-term WAPA continues to flush its system and will increase the rate of system flushing as water inventory levels improve with the recent rainfall in the Territory. WAPA has also increased the amount of water treatment chemicals it is applying to the water. WAPA tests its water quality daily, multiple times per day at multiple locations, and

WAPA's water continues to meet US Environmental Protection Agency, or EPA, primary standards, which are the standards WAPA is required to meet. WAPA has implemented additional testing to test to EPA secondary standards, while compliance with EPA secondary standards is not mandated by the EPA, the testing will provide an extra layer of water quality testing. WAPA is also evaluating programs in partnership with the EPA and DPNR to provide filters, or other mitigation measures to customers who are impacted by brown water.

In the medium term, WAPA has undertaken infrastructure investment programs with the support of EPA funding, such as the Clifton Hill project described previously. WAPA will continue to pursue and execute these targeted infrastructure investment projects.

In the long-term as discussed, WAPA is pursuing Prudent Replacement Public Assistance from FEMA that will fund replacing the entire water infrastructure on St. Croix and modernize it to best-in-class standards. WAPA is also pursuing Prudent Replacement Public Assistance for St. Thomas but focused on St. Croix first because of the condition of the St. Croix water system.

Turning back to electrical infrastructure, federal funding is supporting the installation of new generation at the Randolph Harley Power Plant on St. Thomas. Four new efficient Wartsila generators are currently undergoing start-up and performance checks to ensure that the generators are operating to their specifications and contractually obligated performance. Some of the start-up and testing activity has required planned power outages. All four of the generators have been tested to 100% of their rated load and synchronized to WAPA's electrical grid. The generators are in the final steps of their commissioning checks and are expected to be in full service later this month. The new generators will materially lower WAPA's fuel cost

because they operate on propane, which is significantly cheaper than diesel, and the generators are approximately 30% more efficient than WAPA's old generation. The project also includes a battery energy storage system, which will improve reliability of power generation to the community. The BESS is being commissioned in tandem with the generators; however, delayed delivery of some interconnection equipment has pushed the in-service date of the BESS back one month to late October.

Finally, WAPA has received grant funding to purchase hybrid bucket trucks and electric fleet vehicles. WAPA purchased two bucket trucks with grant funding received last year and is currently purchasing three additional new trucks with recently received grant funding.

Systems

The Automated Metering Infrastructure (AMI) is WAPA's lifeline to its customers. AMI investment could be considered in the Facilities category because it includes electric meters, communications hardware, etc. but AMI is much more than just hardware. AMI not only facilitates automated meter reading, but it also provides remote connection and disconnection capability along with detailed monitoring of customer electricity usage and a host of other Internet of Things capabilities to improve the customer experience. Funding is available under an existing FEMA grant to support addressing AMI, but WAPA has applied for a FEMA Prudent Replacement Assistance Program, which would support the investment needed to bring the Automated Metering Infrastructure to best-in-class standards.

In addition to Automated Metering Infrastructure, WAPA has secured grants and/or is receiving the support of its federal partners for cybersecurity investment, substation maintenance equipment, grid

studies, electrical interconnection studies, and comprehensive system mapping.

Members of the public may see employees from the contractor conducting the grant-funded system mapping on behalf of WAPA accessing WAPA poles and equipment to perform the mapping. WAPA is working with its contractor to ensure that the contractor's employees are clearly identifiable. Detailed system mapping will enhance WAPA's efficiency in troubleshooting outage calls as well as maintaining its system. This project is necessitated in part following the restoration efforts following hurricanes Irma and Maria when WAPA's focus was on restoring customer service as quickly as possible, so equipment that was installed and the specific location of that equipment was not tracked closely to fully document what equipment is installed and exactly where it is installed.

People

When thinking about federal grant funding, most people probably think almost entirely in terms of investment in physical assets and infrastructure. However, WAPA has secured multiple grants to invest in its employees. Thirty linemen graduated from a federally funded multi-year training program and are now United States Department of Labor Certified Apprentice Linemen. WAPA has additional grant funding to continue the training program and the next phase of the training program in partnership with Northwest Lineman College will be starting soon.

WAPA received a \$150,000 grant from the Department of Interior to develop and conduct water system operator training for 30 members of the water team.

WAPA has also secured grant funding for various members of its Information Technology team to secure advance certification credentials.

This concludes my testimony. Again, I thank the Senate and the public for the opportunity to discuss the progress at the Water and Power Authority. I would also like to thank the hardworking WAPA family. WAPA is an around the clock operation, regardless of weather, daylight or nighttime. The commitment of the WAPA team never ceases to amaze me. Following more detailed presentations on the various investments underway at WAPA, I, and other members of the Authority's team will be available for any questions.