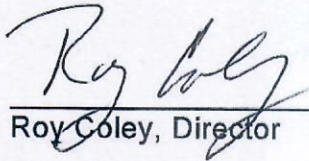




Miami-Dade Water and Sewer Department Business Plan

Fiscal Years: 2023 and 2024*
(10/1/2022 through 9/30/2024)

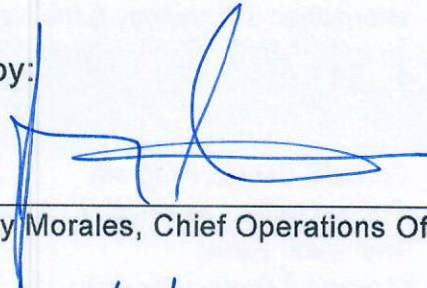


Roy Coley, Director

2-23-23

Date

Approved by:



Jimmy Morales, Chief Operations Officer

4/11/23

Date

Plan Date: February 14, 2023

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DEPARTMENT OVERVIEW

MISSION

“We deliver high-quality, safe, and reliable drinking water and wastewater services in Miami-Dade County where customers know the value of every drop, employees take pride in their contribution, and the pursuit for efficiency and community resilience drives every business decision.”

VISION

“A model utility of excellence in reliability, resilience, and environmental stewardship, recognized as an essential partner in the protection of public health and an employer of choice in Miami-Dade County.”



OUR CUSTOMER

The Miami-Dade Water and Sewer Department (WASD), one of the largest public utilities in the United States, is committed to providing safe, high-quality, and reliable potable water and wastewater services at the lowest possible rates to its residential, business, and municipal customers. Since each of these customer groups compare WASD interactions to their interactions with other utilities or businesses, the Department must be prepared to rise to the occasion by getting the service experience right the first time.

The Department delivers water and sewer services to most residents and businesses within Miami-Dade County, serving approximately 459,962 water and 375,345 wastewater retail customers as of September 30, 2022.

Additionally, service is provided to 15 wholesale (municipal) water customers and 13 wholesale (12 municipal and the Homestead Air Reserve Base) wastewater customers within Miami-Dade County on a daily basis. **The total combined population served at the retail and wholesale level is approximately 2.4 million residents.**



MUNICIPAL DRINKING WATER CUSTOMERS

- BAL HARBOUR
- BAY HARBOR ISLANDS
- HIALEAH
- HIALEAH GARDENS
- HOMESTEAD
- INDIAN CREEK VILLAGE
- MEDLEY
- MIAMI BEACH
- NORTH BAY VILLAGE
- NORTH MIAMI
- NORTH MIAMI BEACH
- OPA-LOCKA
- SURFSIDE
- VIRGINIA GARDENS
- WEST MIAMI



MUNICIPAL & MILITARY SANITARY SEWER CUSTOMERS

- CORAL GABLES
- FLORIDA CITY
- HIALEAH
- HIALEAH GARDENS
- HOMESTEAD
- MEDLEY
- MIAMI BEACH
- NORTH BAY VILLAGE
- NORTH MIAMI
- NORTH MIAMI BEACH
- OPA-LOCKA
- WEST MIAMI
- HOMESTEAD AIR FORCE BASE

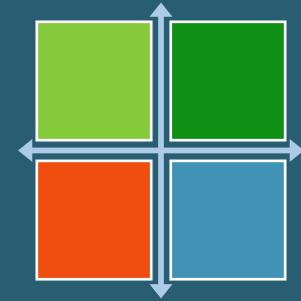
TABLE OF ORGANIZATION

The FY 2022-23 total of WASD full-time equivalent positions is 3,048.

Office of the Director

Formulates and establishes departmental policies that set the course for the organization, directs overall operations, and maintains alignment with the larger County mission and vision. Also directs legislative activities, municipal policies, personnel, and public engagement.

FY 22-23	FY 23-24
18	12



Water & Wastewater Systems Operations

Operates and maintains water and wastewater systems, treatment plants, transmission and distribution systems, and pump stations, as well as SCADA and laboratory functions.

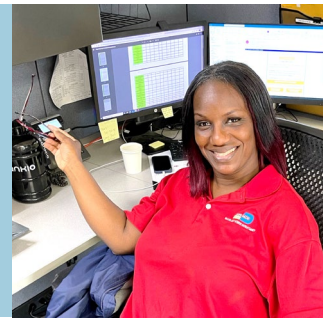
FY 22-23	FY 23-24
1,677	1,734



Finance, Administrative Compliance & Resilience

Directs financial, procurement, operating and capital budgets, contractual monitoring and compliance, and funding coordination as well as the Department's resilience programs.

FY 22-23	FY 23-24
302	338



Planning, Regulatory Compliance & Capital Infrastructure

Leads water and wastewater design and construction activities for plants and pipelines. Directs capital improvement programs, and compliance with state and federal agreements.

FY 22-23	FY 23-24
351	380



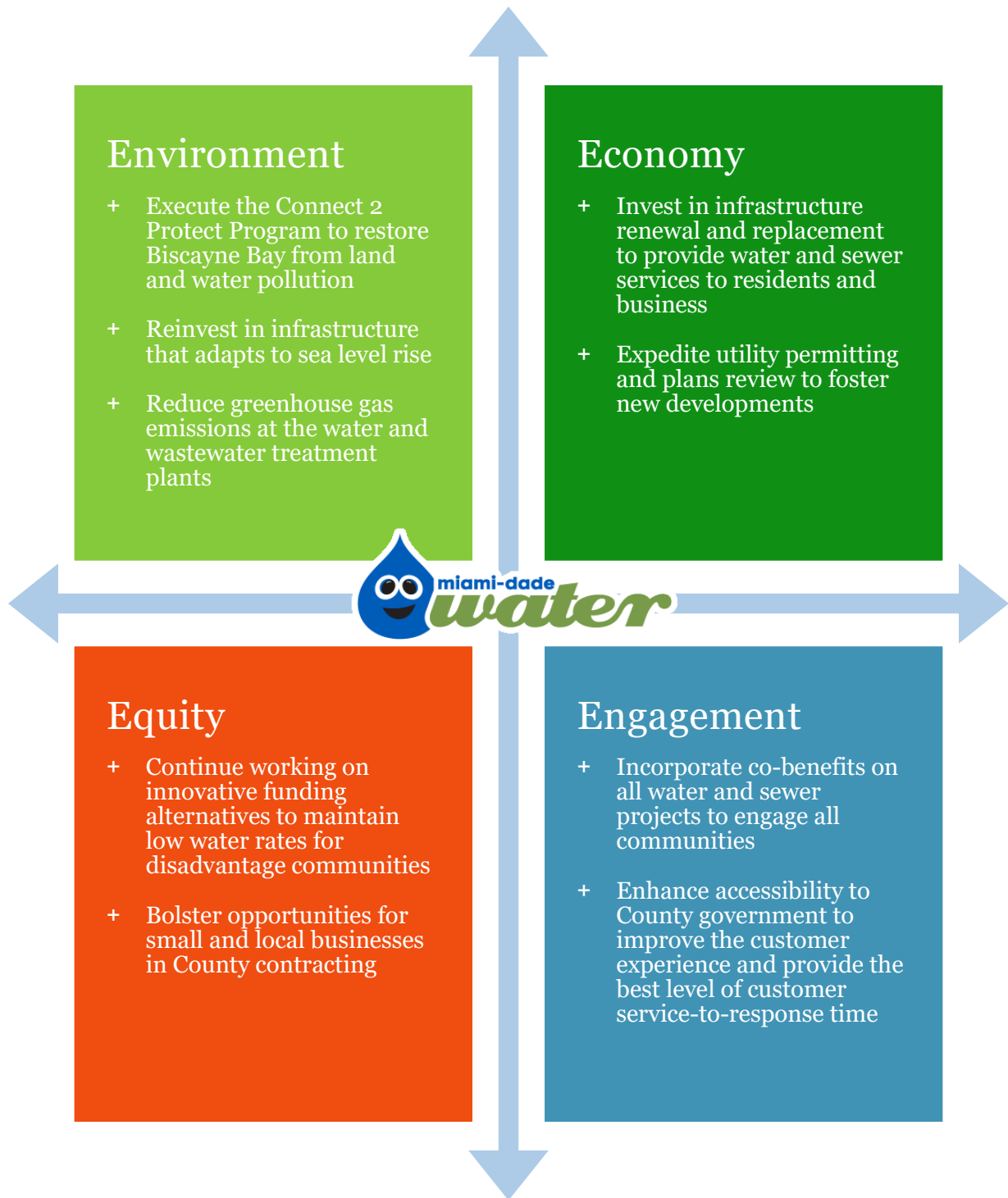
Internal & Administrative Services

Directs customer service and departmental security, as well as fleet and general activities, and the quality assurance of WASD work processes.

FY 22-23	FY 23-24
557	584



All residents of Miami-Dade County require safe drinking water and sanitary sewer services, and WASD works diligently to provide these services without interruption. The Department's efforts align with Mayor Daniella Levine Cava's strategic planning objectives —equity, engagement, environment, and economy— also known as "The Mayor's 4Es."



The Department also relies on various other tools to align with these overarching goals while providing continuous service to WASD customers.

For example, one of these tools is the guidance provided by Mayor Levine Cava’s Thrive305 public engagement initiative, which underscores the need for investment in blue-green jobs that benefit our water and environment. Therefore, by bolstering opportunities for small and local businesses in County contracting, as well as recruiting new WAsD employees to deliver government services effectively and efficiently, the Department is supporting Thrive305’s “Priority 7.”



Another closely related example of an alignment tool that WAsD relies on is the Mayor’s Future Ready Plan to build the economy of the future today. Its three pillars — empowering our local workforce, supporting our small businesses, and unleashing the power of innovation — have provided the guidance needed for the Department to adopt a comprehensive employee development and retention strategy to attract skilled and talented graduates from local schools and colleges, while developing apprenticeship programs in collaboration with outside agencies.

By aligning its business with the Mayor’s collaborative and innovative approach, WAsD will grow the dynamic workforce it needs, and residents will get high-tech and construction career opportunities in the water industry.

STRATEGIC ALIGNMENT

STRATEGIC ALIGNMENT, 4Es & THRIVE305 SUMMARY

WASD’s direct alignment with the Miami-Dade County Strategic Plan and mayoral priorities such as the Thrive305 Action Plan, the Miami-Dade Climate Action Strategy, and the touchstone of the Levine Cava administration, The Mayor’s 4Es, are all considered when departmental staff and leadership are planning and implementing their programs, initiatives, services, and projects.

Alignment Measures	THE MAYOR'S 4 Es				Thrive 305 Priority or Action?
	Environment	Economy	Equity	Engagement	
NI2: Continuity of clean water and community sanitation services					
Compliance with drinking water standards	✓				Action 7.6
% compliance with wastewater standards	✓				Action 7.6
Systemwide available water supply capacity from the Biscayne aquifer	✓				Action 7.6
NI3: Protected and restored environmental resources					
Gallons of water saved per day (GPD) through the implementation of the Water Use Efficiency Plan	✓				Action 7.6
Number of Sanitary Sewer Overflow (SSO) and Building Backup (BBU) events in a calendar year	✓				Action 7.6
GENERAL GOVERNMENT					
GG1: Accessible, equitable, transparent, and responsible government					
Average wait time per call monthly				✓	Action 1.1
Permit Review and Approval Time		✓			Action 5.4
GG2: Excellent, engaged, and resilient workforce					
Attract and hire new talent to support operations		✓			Action 10.1
Promote employee development and leadership.				✓	Action 12.2
Ensure an inclusive and diverse workforce			✓		Action 12.2
GG4: Effective leadership and management practices					
Reduce County government's greenhouse gas emissions and resource consumption	✓				Miami-Dade Climate Action Strategy
Achieve 75% Execution of Capital Infrastructure Program		✓			Action 7.6

Please note that although the table above identifies alignment measures by a primary area, given the fundamental nature of WASD’s work in our community providing the basic necessities of water and wastewater services, many measures may impact more than one of the Mayor’s 4 Es.

STRATEGIC AREA: NEIGHBORHOOD AND INFRASTRUCTURE (NI)

Goal NI1: Safe, healthy, and attractive neighborhoods and communities

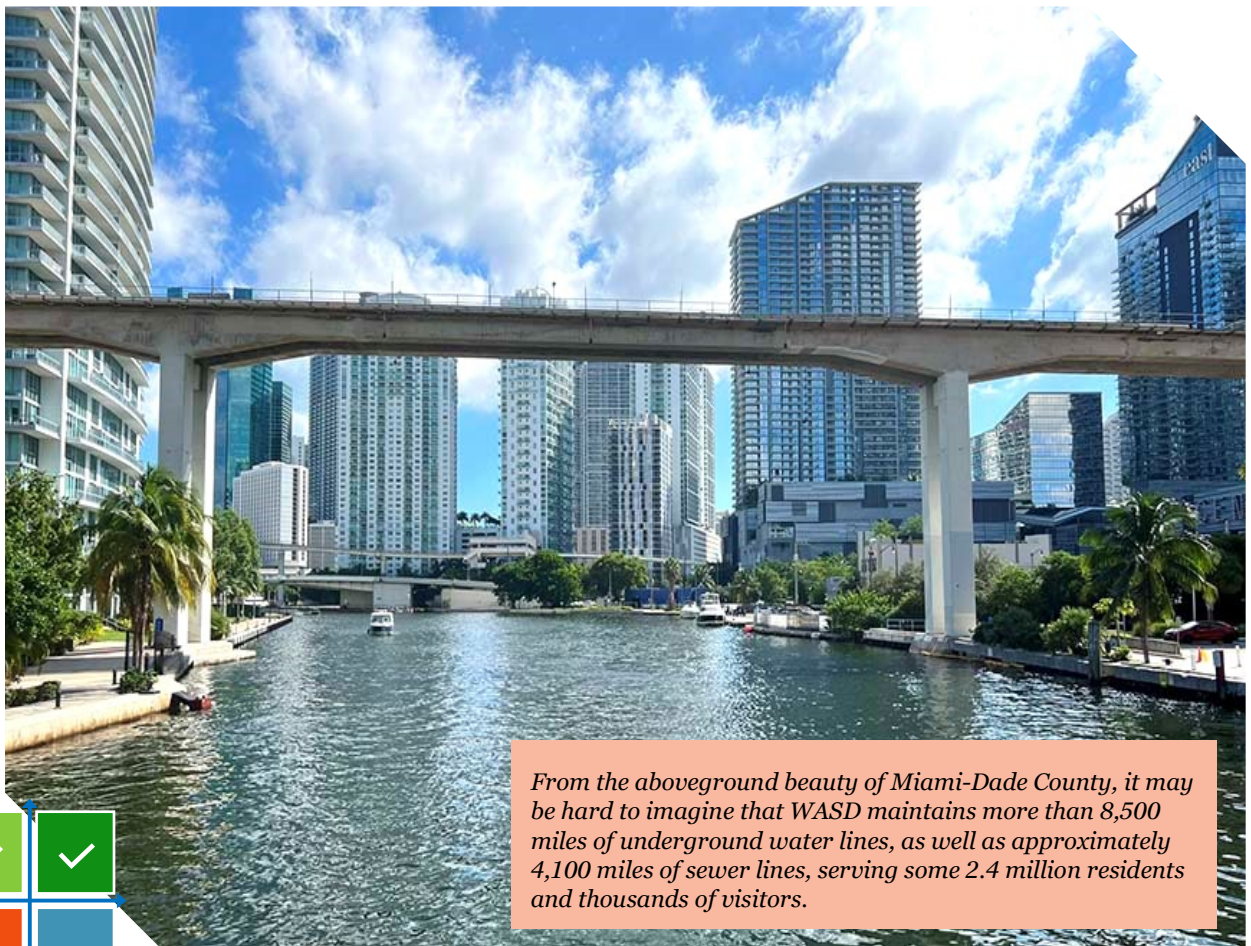
Objective NI1-2 Ensure buildings are sustainable, safe, and resilient.

Further, develop and advance WASD's resilience framework and planning efforts, including vulnerability assessments, facility hardening, design guidelines, tools, and standard operating procedures to maximize the lifespan of public assets in the face of changing conditions.

Continue to integrate future conditions, such as sea-level rise, changes in rainfall frequency and intensity, heat, and other climate conditions, the planning and design of infrastructure and operations planning.

Advance a risk-based approach for asset management by implementing the ANSI/AWWA J100 Standard for Risk and Resilience of Water and Wastewater Systems.

Continue to apply the Sustainable Buildings Ordinance's requirements, including the LEED Sustainable Buildings Rating System for vertical assets and the Envision Sustainable Infrastructure Rating System for industrial and other appropriate infrastructure types.



From the aboveground beauty of Miami-Dade County, it may be hard to imagine that WASD maintains more than 8,500 miles of underground water lines, as well as approximately 4,100 miles of sewer lines, serving some 2.4 million residents and thousands of visitors.



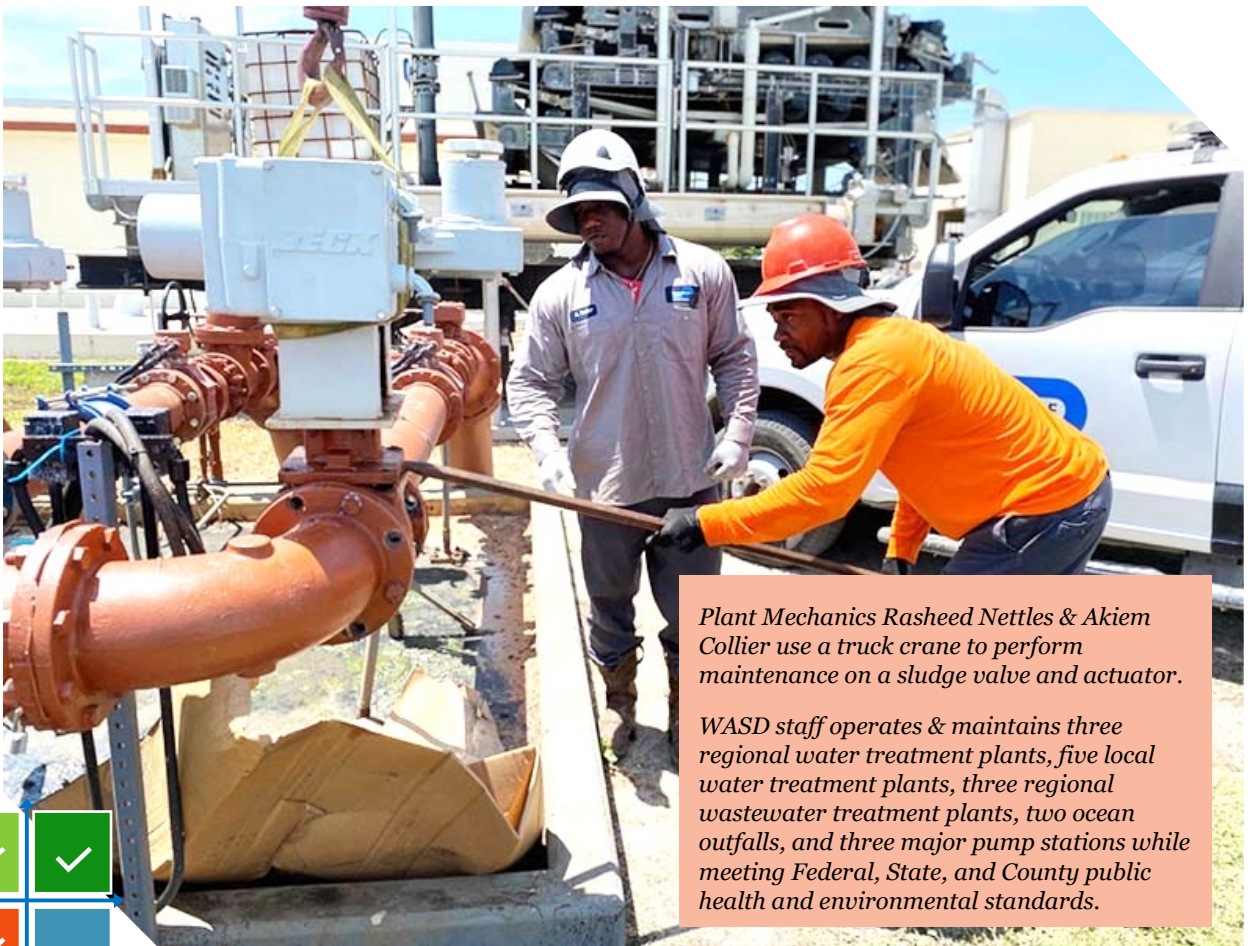
**Goal NI2: Continuity of clean water and community sanitation services
AND Goal NI3: Protected and restored environmental resources**

Objective NI2-1: Provide sustainable drinking water supply and wastewater disposal services. AND Objective NI3-2: Protect and maintain surface and drinking water sources.

Execute the Capital Improvement Program to expand, renew, and rehabilitate water and sewer infrastructure. The CIP is currently the largest the Department has ever embarked on at \$7.8 billion. The timely execution of the projects in the CIP will provide sustainable drinking water and wastewater disposal now and into the future.

Continue implementing the Connect 2 Protect Program to advance the near-term and long-term actions detailed in the “December 2020 Plan of Action - A Risk-Based Approach to Septic Systems Vulnerable to Sea Level Rise.” Key actions include incentivizing parcel connection to available sewer infrastructure through implementing the \$90 Million sewer laterals program.

Operate and expand the salt monitoring network in Miami-Dade County in partnership with the United States Geological Survey (USGS).



Plant Mechanics Rasheed Nettles & Akiem Collier use a truck crane to perform maintenance on a sludge valve and actuator.

WASD staff operates & maintains three regional water treatment plants, five local water treatment plants, three regional wastewater treatment plants, two ocean outfalls, and three major pump stations while meeting Federal, State, and County public health and environmental standards.



STRATEGIC AREA: GENERAL GOVERNMENT (GG)

Goal GG1: Accessible, equitable, transparent, and responsible government

Objective GG1-1: Support a customer-focused organization by providing convenient access to information and services and ensuring processes are easy to navigate.

Develop a marketing and communications plan to improve internal and external perception and trust based on the insights received by employee and customer feedback. It will focus on developing and distributing content that ensures the Department's customers and the community-at-large are aware of the essential work WASD performs as well as the critical services the utility provides daily.

Provide timely, concise, and clear updates during emergencies as well as routine transparency publications on water quality, water use permits, annual budgets, comprehensive financial reports, and new and emerging rules and regulations.

Share information on water conservation that educates customers and promotes the Department's indoor and outdoor water conservation rebates.



Jennifer Messemer-Skold, Public Affairs Administrator, engages with the community at an outreach event. In addition, the WASD public engagement team responds to dozens of community speaking requests, as well as requests for virtual water conservation outreach, media requests and more every year.

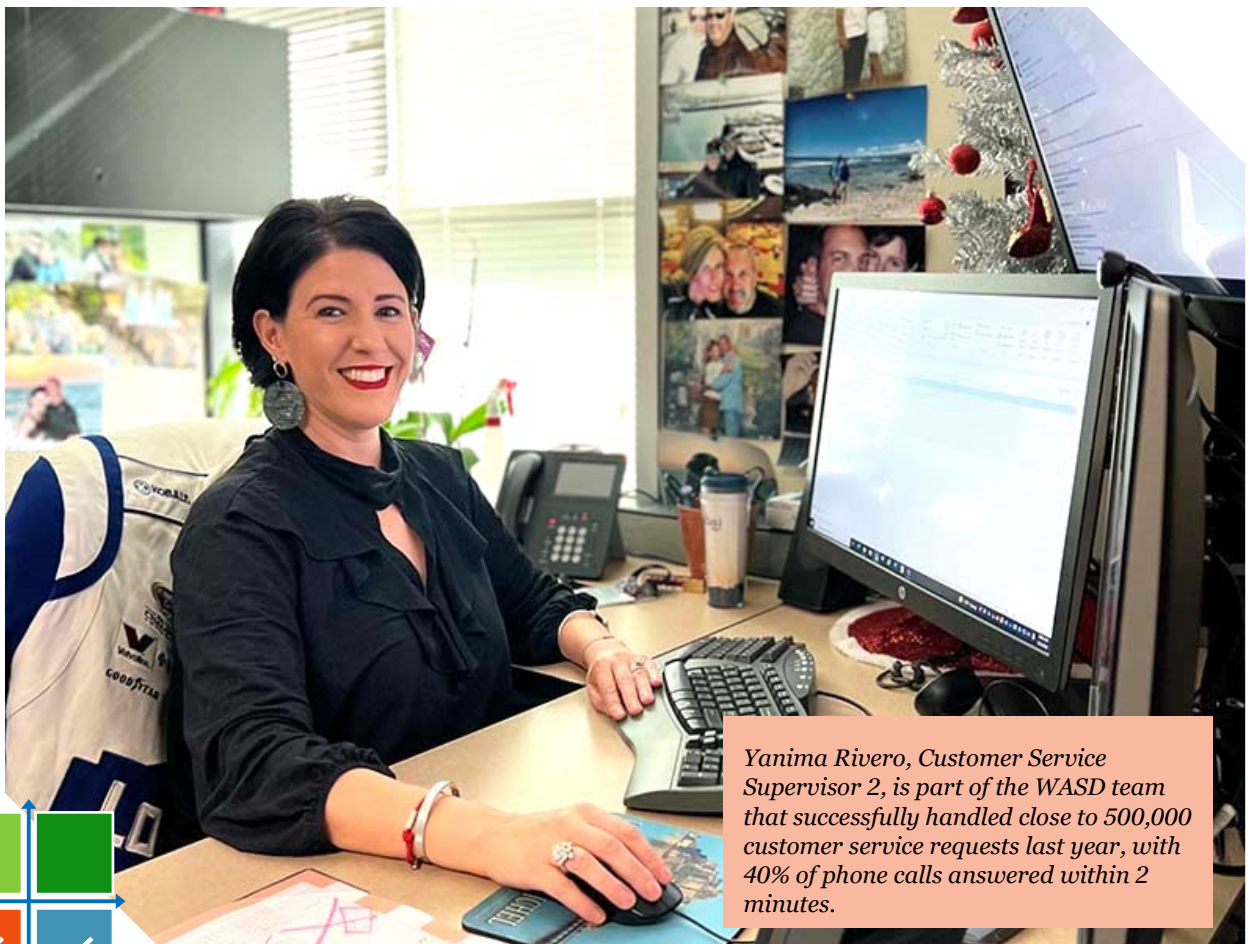


Analyze and evaluate the quantity and quality of employee/customer interactions to improve the customer experience, including those provided via the Department's online self-service application. Currently, WASD leadership is in the developmental phase of capturing data to create metrics for the analysis of these interactions.

Continue the partnership with the Information Technology Department (ITD) to expand solutions that will enhance WASD's self-service application, improving the interfaces with the back-end Customer Care and Billing (CCB) system. This will continue to increase utility customers' access to typical service requests. In turn, this will help reduce telephone or walk-in center traffic as well as offer 24/7 access to simple inquiries.

In the past fiscal year, the self-service application has added three new options, including the ability for commercial customers to enter their sub-meter readings, functionality for customers to reconnect their service, and to accept payments directly to WASD's application instead of going through a third-party vendor.

Additional functionalities are being developed to expand this application. For example, WASD is currently working with ITD to launch functionality that would allow the utility's customers to start or transfer services.



Yanima Rivero, Customer Service Supervisor 2, is part of the WASD team that successfully handled close to 500,000 customer service requests last year, with 40% of phone calls answered within 2 minutes.

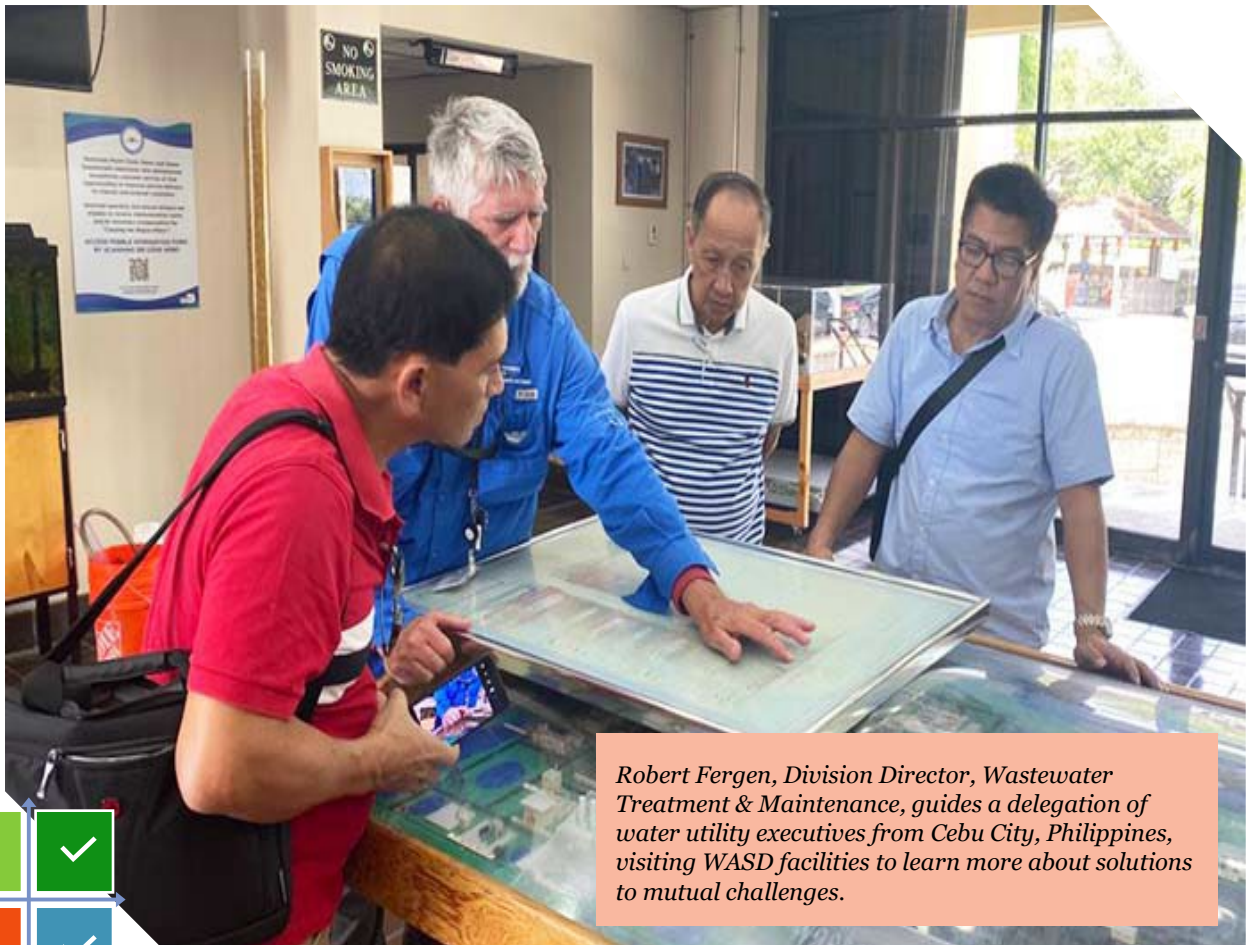


Objective GG1-2: Facilitate community outreach and engagement to promote better decision-making in County government.

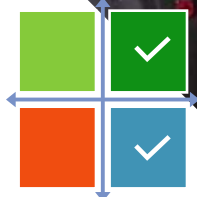
WASD’s online messaging system, “Chatbot,” launched in 2016 to provide transactional services to WASD customers; however, the tool has underperformed and has not effectively resolved many transactions. As a result, WASD is working with ITD to further improve the tool’s functionality allowing the utility’s customer community to receive real-time responses to inquiries with program enhancements. Once the improvements are completed, WASD will work to promote its use with those customers who prefer to use online solutions to resolve their service questions.

WASD has continued its affiliation with CASHD, the Public Engagement Office, and our Finance Division to create a streamlined process where our customers experiencing financial hardships can receive information on state or federal programs to assist in paying their utility bills.

Partnering with our Public Engagement Office creating campaigns to advise customers of available assistance programs, including state, federal and the County’s WASD Cares Program.



Robert Fergen, Division Director, Wastewater Treatment & Maintenance, guides a delegation of water utility executives from Cebu City, Philippines, visiting WASD facilities to learn more about solutions to mutual challenges.



Goal GG2: Excellent, engaged, and resilient workforce

Objective GG2-1: Attract and hire new talent to support operations.

Implement a comprehensive staffing and succession plan to mentor, train, and transfer historical knowledge to new employees before the retirement of existing staff in critical areas.

WASD will actively engage with educational, youth, and other community-based organizations to increase awareness, understanding, and pathways to water sector careers.

These organizations can assist with targeted and sustained efforts to reach students and schools at all levels, including those in disadvantaged communities and others seeking career changes, with information on the value and benefits of these jobs and accessible career pathways to access them.

Additional recruitment efforts, such as open-competitive job opportunities, provide for attracting diverse and highly skilled candidates who will play a role in WASD's achievement of its strategic goal efforts.



Lazaro Cabrera, Division Director, WASD Water Operations, leads water utility professionals in prayer as they embark on a mission to assist the Ft. Meyers Beach water utility in repairing extensive infrastructure damage following the destructive force of Hurricane Ian.



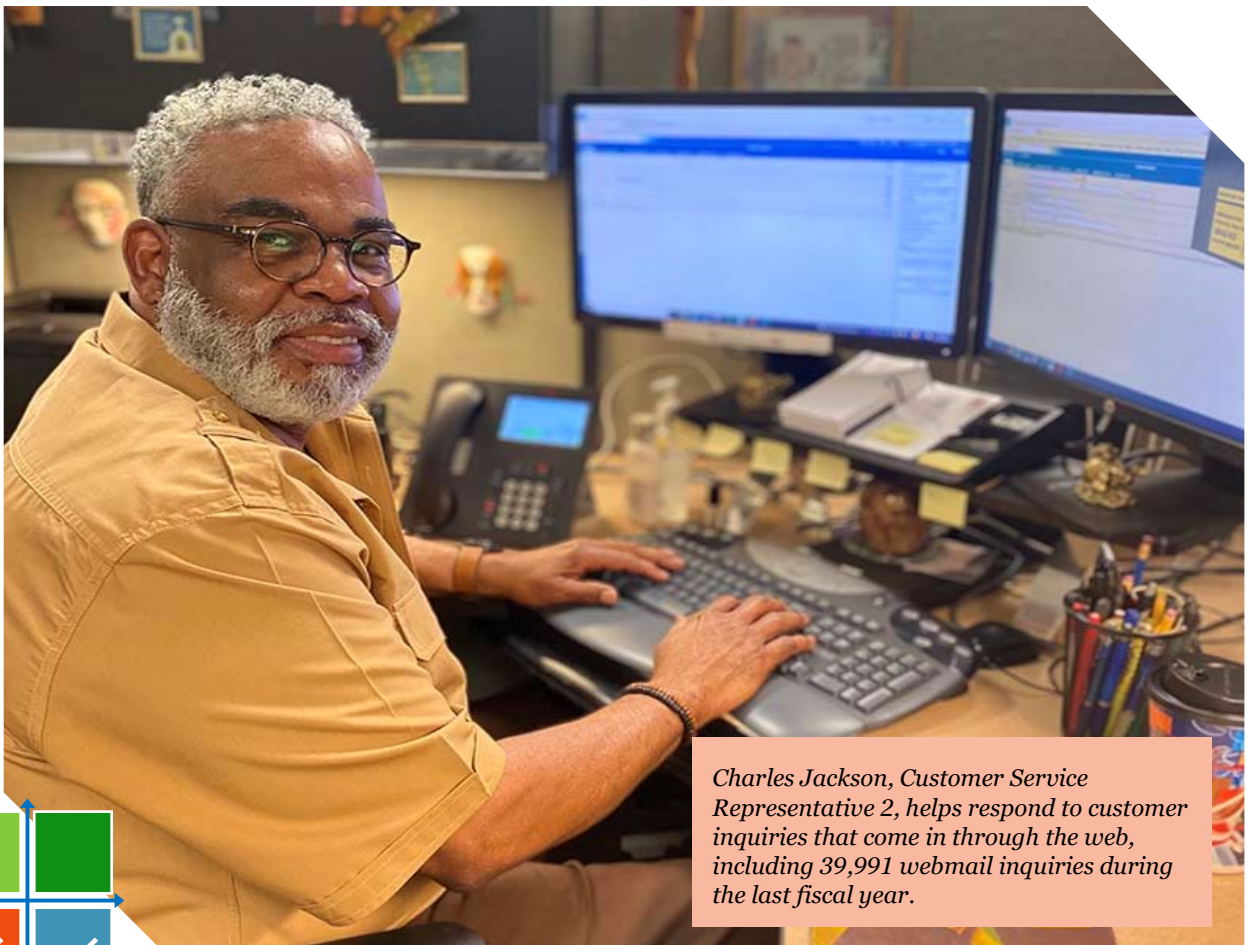
Objective GG2-2: Promote employee development and leadership.

Continue implementing Employee Development Plans (EDPs) to motivate and inspire all employees to reach their full career potential –including 24 professional development hours– as part of the performance review process.

Continue to provide continuing education programs for operations and maintenance personnel to maintain required licenses and certifications to ensure a highly skilled workforce.

Promote and encourage professional development, which focuses on preparing subordinate-level employees with the necessary leadership skills to become the next generation of WASD leadership.

Continue to engage all newly hired WASD employees with a formal, departmental “New Hire Onboarding Process” managed and maintained by the WASD Training and Development Section. This process lays the groundwork for developing new County water industry professionals at all levels of the WASD organization.



Charles Jackson, Customer Service Representative 2, helps respond to customer inquiries that come in through the web, including 39,991 webmail inquiries during the last fiscal year.

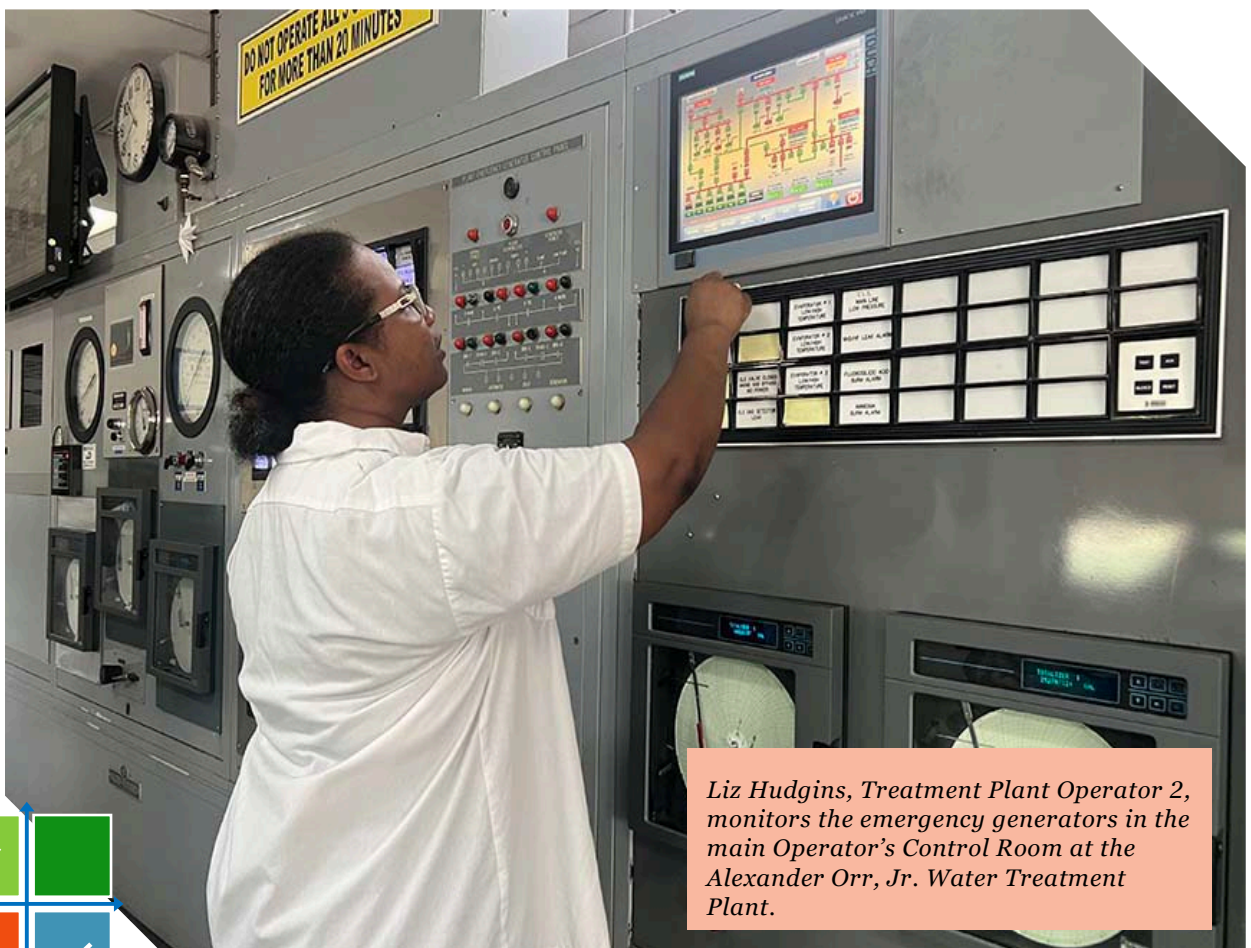


Objective GG2-3: Ensure an inclusive and diverse workforce.

Extend WASD's commitment to creating and maintaining a diverse and inclusive workforce valued and accepted for their differences and professional contributions.

Continue implementing new recruiting efforts, such as demonstrating a strong presence at job fairs, which rotate within different sectors throughout Miami-Dade County, thus, providing WASD with a more diverse applicant pool reflective of the communities the County serves.

Continue to provide workplace diversity and anti-harassment training to frontline and supervisory personnel to maintain awareness of WASD's safe work environment policies extended to every gender, race, and culture, as well as all people with disabilities. In addition, to position the Department as an "Employer of Choice" through initiatives that promote diversity and inclusion and opportunities for growth, including the implementation of a "Racial Equity Toolkit," which is a collection of processes and measures for operationalizing equity recommended by the Government Alliance on Race and Equity.



Liz Hudgins, Treatment Plant Operator 2, monitors the emergency generators in the main Operator's Control Room at the Alexander Orr, Jr. Water Treatment Plant.



Goal GG4 – Effective leadership and management practices

Objective GG4-2: Effectively prioritize, allocate and use resources to meet current and future operating and capital needs for all our residents.

Begin implementing an Integrated Master Plan, which will drive the development of a framework that comprehensively addresses WASD’s water and sewer infrastructure and resource needs through the year 2050.

In addition, the effort will transform WASD’s current business practices to maximize operational efficiency and decision-making regarding future capital improvements.

Continue to seek funding to support the expansion of the sanitary sewer system and drinking water system to address the needs of residents with vulnerable septic tank systems and contaminated drinking water wells.



Roy Coley, WASD Director, addresses an audience including Mayor Daniella Levine Cava, Commissioner Danielle Cohen Higgins, and others regarding the need to implement infrastructure changes now to support a more sustainable tomorrow for the Miami-Dade County community.



Objective GG4-3: Reduce County government's greenhouse gas emissions and resource consumption.

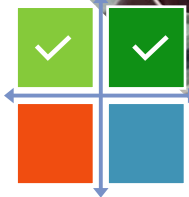
Maximize the use of digester gas, a byproduct of the wastewater treatment process, as a fuel to power the energy demand at the South and Central District WWTPs. Further, maximize onsite cogeneration of energy at the South District WWTP by utilizing the methane gas from the adjacent landfill.

Implement the Energy Management Plan for Wastewater Treatment, which builds upon existing efforts and establishes measures to achieve 30% energy intensity savings by 2030.

WASD continues to aggressively detect and remediate leaks countywide throughout its transmission and distribution system. During the calendar year 2022, the Department identified and repaired over 590 Non-Breaking Ground Leaks, which are difficult to detect because they do not break the ground's surface. Additionally, the backlog of leak repairs was reduced from 161 to 157. Repairs of the identified leaks have prevented over 4.6 billion gallons of water loss and savings of more than \$1.727 million.



Newton Campbell, Environmental Chemist 2, is preparing to test a 24-hour water composite point of entry sample. Highly trained WASD microbiologists, chemists, and specialists like Mr. Campbell conduct thousands of analyses of water per year to ensure quality and safety.



KEY ISSUES

CONTRACTOR SCARCITY

WASD has one of the County's most extensive Capital Improvement Programs, and **the utility is scheduled to complete more than \$700 million in construction annually over the next five years.** However, this output level can only be accomplished if the construction sector provides adequate resources. Unfortunately, a historic and widening labor shortfall in the U.S. construction sector has occurred over the past year and a half. As a result, during FY 2022-2023, WASD started to experience construction contractor scarcity when more than a dozen construction procurements received a sole bidder. These industry conditions have significantly reduced competition, which has resulted in multiple projects with bids that exceeded the Engineer's Opinion of Probable Cost by more than 20%. If current industry conditions continue or worsen, WASD will be limited in its ability to complete its multi-year capital program as currently planned. It would also jeopardize the utility's ability to meet mandated regulatory obligations to comply with the Ocean Outfall State Legislation. As a mitigation measure, WASD has established quarterly construction forums to engage the industry, provide upcoming project information, and offer a platform to collaborate and incentivize bidding.



CONNECT 2 PROTECT FUNDING CHALLENGES

Connect 2 Protect is the County's approach to extending sanitary sewer service to residents with septic systems to protect properties, health, and natural areas such as Biscayne Bay. The Department continues to apply for grants and leverage alternate financing mechanisms to support the continued execution of necessary infrastructure projects that will ensure a sustainable future for the residents of Miami-Dade County.



HUMAN RESOURCES / FILLING VACANCIES

Recruiting and retaining individuals with the necessary qualifications to deliver government services effectively and efficiently is currently one of the public sector's most significant issues.

Consequently, WASD is experiencing difficulties finding and attracting qualified candidates for essential classifications due to several factors, including the lack of qualified candidates in the Miami-Dade County community and intense competition from the private sector for the same pool of applicants. Although salary ranges have been updated for some of WASD's key positions to make them more competitive, that action has not solved the problem.

The positions and classifications that are the most challenging to fill are those with minimum qualifications requiring specific certifications, such as a Commercial Driver's License, and skills, such as heavy equipment operator.

But as the County and the world change over the next 3-5 years, WASD's work will continue to call for highly qualified employees and new hires at all levels of the organization.

For these reasons, there is a great need for programs that train internal WASD employees, creating internal career-track candidates for higher positions within the utility, as well as other programs designed to attract, train, and recruit future employees from across the Miami-Dade County community.



CUSTOMER DEMANDS & EXPECTATIONS

Customer Service reviews predict that 2023 will be a challenging year for building and earning customer loyalty on all fronts. As a result, this gives customer service touchpoints a tremendous opportunity to drive value.

Customers compare WASD interactions to their interactions with other utilities or businesses. As a result, the Department must be prepared to rise to the occasion by getting the service experience right the first time. Accordingly, First Call Resolution (FCR) is one way the Department can set the stage for recognizing customer value.



WASD employees are on the front line to deliver that first impression, and for that to be successful, they must remain committed. For that to happen, **employees must be engaged, feel appreciated, and understand the importance of their role in the WASD organization.** With this in mind, the utility started its department-specific strategic planning process, which includes input from staff at all levels of the organization to create an actionable strategy. Leadership is also currently analyzing the results of a recent WASD employee survey to identify areas of improvement for the organization.

Fair and balanced workloads, as well as tools to help them better perform their jobs — such as proper staffing, employee training, employee recognition, and technology that facilitates their ability to do their work — all matter. Still, the fact is that WASD is competing with other career options, departments, and employers due to today’s job market. Even when traditionally, the County has low turnover rates, the Call Center, for example, had a turnover rate of 25% in 2022.

INFORMATION TECHNOLOGY & THE NEED FOR INNOVATIVE SOLUTIONS

While centralizing information technology services for the County, the Information Technology Department (ITD) has sought to increase efficiencies by systematically implementing “one size fits all” solutions across the enterprise. However, for WASD, this approach has been less than ideal. It has led to delays in employing more suitable or timely solutions that other utilities of a comparable size have already validated.



WASD’s current Interactive Voice Response (IVR) system is outdated, cumbersome, and slow. Therefore, the Department needs to procure a platform that is dependable and easy to use, and which provides effective and efficient results. Additionally, the right customer service software should integrate with WASD’s other systems to reduce unnecessary wait times, customer frustrations, and erroneous solutions.

A state-of-the-art, user-friendly, intuitive system with functionalities that allow for customer preferences and efficient resolutions to their issues is the path WASD seeks to deliver a positive customer experience. Multiple platforms, for example, Chatbox, outbound messaging, and Smart Meter dashboards, are popular and effective consumer trends for utilities. WASD has been working diligently with ITD. Nonetheless, **competing priorities and the needs of other departments delay much-needed software implementation for our Department.**

Additionally, smart meters are a solution that measures and transmits real-time information about water usage. They are the basis for usage-based billing, providing the utility and its customers with more detailed information about leaks and consumption. They also enable advanced analytics and forecasting for utility providers as well as help customers optimize consumption and reduce their bills. Notably, many WASD customer calls and inquiry traffic involve high bill consumptions primarily associated with concealed and unknown leaks that Smart Meters would avoid.

FUTURE-PROOFING, RESILIENCE & STORM-HARDENING

The Department has been remarkably successful in operating and maintaining service levels, even during extreme events such as 1992's devastating Hurricane Andrew and the destruction of Hurricane Irma in 2017.

But the impacts of hurricanes and other climate-related influences will continue to increase due to sea level rise, which directly influences the groundwater and storm surge levels, posing a threat to WASD infrastructure and operations staff.



In 2018 the Department developed a “Design Guide for Hardening Wastewater Treatment Facilities against Flooding from Surge, Sea Level Rise, and Extreme Rainfall” to assist engineers and consultants with designing the projects in its multi-billion-dollar Capital Improvement Program (CIP) to withstand wind, storm surge, and flood conditions based on priority criteria including personnel safety and system criticality. The infrastructure improvements planned to meet regulatory requirements, such as the Ocean Outfall Legislation and the Consent Decree, are one driver for this work.

There remains a need to harden existing assets to protect infrastructure and personnel, particularly at critical pump stations and the three coastal wastewater treatment plants where more than 70% of the assets are vulnerable to storm surge. Therefore, it is essential to seek all available funding opportunities to advance hardening initiatives to decrease the risk to the existing infrastructure, as these are the “weakest links” in WASD systems.

PRIORITY INITIATIVES

CONSENT DECREE PROGRAM



Construction of the New South District WWTW Sludge Thickening & Dewatering Building is underway as part of the WASD Consent Decree Program. When completed, the facility must handle 175,267 lbs. per day during maximum weekly average conditions.

The County negotiated a Consent Decree with the United States Environmental Protection Agency (EPA) and the Florida Department of Environmental Protection (FDEP), which was lodged with the U.S. District Court on June 6, 2013, and entered on April 9, 2014. This Consent Decree is designed to build on the successes achieved by the Department under previous Consent Decree programs. The overarching goal of the Consent Decree is to reduce sanitary sewer overflows and meet the effluent limit requirements of the Clean Water Act.

The Consent Decree requires the Department to upgrade its collection, transmission, and treatment facilities by completing 81 capital improvement projects throughout the wastewater system. It also requires the County to implement Capacity, Management, Operations, and Maintenance (CMOM)

programs to continue improving its systems and to eliminate, reduce, prevent, or otherwise control sanitary sewer overflows (SSOs).

As of September 30, 2022, the County's Consent Decree Program has completed 51 of its capital improvement projects with an approximate cost of \$639 million. **Currently, 25 projects are in construction with an approximate cost of \$1.141 billion, and five projects, estimated at \$175 million, are in the planning, design, permitting and procurement phases.**

Implementation of the Consent Decree is underway, and the County remains fully committed to completing the mandated Consent Decree Capital Improvement Projects by 2028.

OCEAN OUTFALL LEGISLATION PROGRAM



In compliance with a statewide directive, WASD is reducing the practice of discharging nutrients into the ocean through its Ocean Outfall Legislation Program, which consists of 24 major construction projects totaling over \$2 billion.

In 2008, the Florida Legislature approved, and the Governor signed a law requiring all wastewater utilities in Southeast Florida to utilize ocean outfalls for disposal of treated wastewater to reduce nutrient discharges by implementing advanced wastewater treatment by 2018 or equivalent, cease using the outfalls by 2025 and reuse 60% of the wastewater flows by 2025.

In 2013, the statute was amended to provide greater flexibility in meeting reuse requirements by allowing the use of the ocean outfalls for peak flow management, with the condition that discharge comprises less than 5% of annual baseline flows. Because of this law, the Department has analyzed several compliance options. Each option includes the additional projected capacity to meet future average daily and peak flow demands. After considering various options, the Department's recommended choice provides for upgrades to both the Central and North District wastewater treatment plants (WWTP). The upgrades will include the addition of deep-injection wells at the Central and North District WWTPs to eliminate the normal use of ocean outfalls for the disposal of treated wastewater. **These upgrades include 14 projects, of which two have been completed, three are under construction, and nine are in the design and permitting phase.**

As part of the Department's normal planning activities, WASD thoroughly re-evaluated its 2035 projections, including average daily flows, peak hour flows (PHF), and influent solid loadings.

Through the Department's continued water conservation efforts, together with its Inflow and Infiltration Program, wastewater flows have remained flat for the past fifteen years, reducing the current and future need for system capacity. The updated projections have pushed the need for a new plant beyond the initial 2025 target. Therefore, the addition of a proposed West District WWTP, which was part of the Department's 2013 Ocean Outfall Legislation Compliance Plan, will not be needed to comply with the legislation, nor will it be required by 2025, as initially planned, for capacity purposes. Nevertheless, the facility is still included within the 20-year planning horizon.

The Department decided to implement an equivalent to that which Advanced Wastewater Technology would have achieved (AWT) if the requirements were fully implemented beginning December 31, 2018, and continued through December 31, 2025. This is accomplished by reducing the nutrients (total nitrogen and total phosphorus) disposed of through the ocean outfall and maximizing the flow sent to the existing wells.

Since 2008, the Department has been using the existing deep-injection wells at the North District WWTP to reduce the flow going out to the outfall. In addition, the Department has completed the construction of two industrial deep-injection wells at the Central District WWTP, which will reduce nutrient loading by removing the waste stream from the centrate process, the gas scrubbers, and the treated effluent from the ocean outfall discharge. The industrial deep-injection wells are in operational testing as of November 2019. These wells will enable the Department to divert approximately 30 million gallons per day (MGD) of treated wastewater from Central's ocean outfall.

THE WATER RESET



The WAsD Hialeah Water Treatment Plant was built in 1924. The primary focus of The Water Reset is to address critical infrastructure projects, like those at Hialeah as well as other plants and across WAsD's infrastructure system.

The Hialeah Plant's team, along with the staff at all WAsD locations, are making The Water Reset a reality.

The Miami-Dade Water and Sewer Department developed The Water Reset to address existing and emerging needs within its water treatment facilities and water distribution system. The program includes a comprehensive prioritization of previous condition assessment reports, the American Water Infrastructure Act (AWIA) Risk and Resilience Assessment (RRA), and other critical projects that address aging infrastructure, redundancy, future regulations, capacity, and modernization.

To prioritize and implement these improvements, the Department developed the following criteria to establish a capital plan prioritization:

- ◆ Life, Health & Safety
- ◆ Legal & Current Regulatory Compliance
- ◆ Future Regulatory Compliance
- ◆ Essential Improvements
- ◆ Strategic Alignment
- ◆ Infrastructure Risk Management and Resilience
- ◆ Financial & Operational Benefits
- ◆ Shovel Ready Status

The Water Reset program comprises approximately 100 projects, including generator replacements to ensure continued reliability during severe weather events, filter overhauls to address aging infrastructure and capacity constraints, redundant raw water transmission mains to fortify system dependability, and lead and copper assessments that ensure safe drinking water.

The program endeavors to address future needs by accounting for forthcoming regulatory compliance and modernization projects. These projects include evaluating the effects of PFAS on the Department's wells, automating the controls at the treatment facilities, and implementing Advanced Metering Infrastructure (AMI) across all retail and volume accounts.

CONNECT 2 PROTECT PROGRAM

Miami-Dade County's Connect 2 Protect is a multi-year, countywide program that provides sanitary sewer service to residents with septic tank systems. Approximately 9,000 septic systems are vulnerable to compromise or failure under current groundwater conditions. As sea-level rise increases, this number will grow to about 13,500 by 2040. Compromised and failing septic systems can cause negative impacts on private properties, pose public health risks, and impact local natural resources, including Biscayne Bay.

The Little River community is one of the first areas for Connect 2 Protect implementation based on its designation as an Adaptation Action Area, a classification that focuses on those communities most vulnerable to sea-level rise and flooding.



Above, the Miami-Dade Water and Sewer Department breaks ground in the Ojus Urban Area District. By expanding sanitary sewer in this area, WASD helps facilitate a more livable community through a mix of commercial and residential uses. This will not only benefit property owners and the community but also generate a positive economic impact for Miami-Dade County.

Much of the Little River area is low-lying and prone to flooding, with residents reporting septic tank systems failing during heavy rain and high tide events.

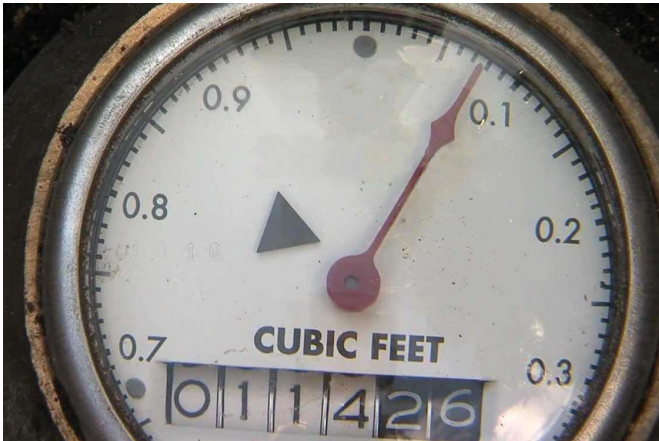
This results in sewage backing up into homes and ponding floodwater on lawns and roadways.

In addition to the Little River project, **WASD is currently working on the design of laterals for 2,000 parcels across the County designated as vulnerable and breaking ground on projects in other areas, such as the Ojus Urban Area District.**

ADVANCED METERING INFRASTRUCTURE

As mentioned previously in this document, WASD owns and operates three regional water treatment plants and provides potable water to over 2 million residents and visitors to the County through more than 480,000 metered service connections. **Yet only 35 meter readers are currently assigned to read the 470,000 accounts on a quarterly or monthly basis.**

Consequently, the service area is split into various reading cycles, and routes are read daily throughout the month.



Water meters are essential to gauge how much water a home or business uses. They are also valuable indicators of whether water may be wasted due to leaks. However, manual water meters, like the one pictured above, require manual reading and data collection, whereas newer Advanced Metering Infrastructure meters allow for enhanced data gathering and usage pattern detection. As a result, AMI meters can help identify a leak much sooner than a manual water meter.

The current meter infrastructure incorporates a combination of manually read meters with readings captured via handheld reading devices. For this reason, the Department is embarking on an Advanced Metering Infrastructure (AMI) to convert the existing water meters and meter reading system to a state-of-the-art solution that leverages smart devices to improve the County's water and sewer operations. This project includes all hardware, cloud-based software, equipment, materials, technical labor, installation labor, and related services, including testing, supervision, project management and all other items necessary to install an integrated turnkey solution for the County, with the following objectives:

- ◆ Collect and store hourly meter reading data for all water meters in the WASD service area
- ◆ Improve non-revenue water losses through enhanced analytics
- ◆ Improve the customer service experience
- ◆ Allow for monthly billing of customers
- ◆ Improve the meter-to-cash process
- ◆ Provide a customer-facing online portal for customers to view their water usage
- ◆ Provide flexibility to connect to various sensors for future expansion.

INDUSTRY ENGAGEMENT

To carry out its mission of delivering high-quality, safe, and reliable drinking water and wastewater services in Miami-Dade County, WASD must support and enable a robust and resilient construction industry — especially during the current historic labor shortfall in the U.S. construction sector. The utility’s ability to secure contractors and forge other dynamic partnerships is vital to completing its multi-year capital program as planned.

Recognizing that early, frequent, and constructive communication with the construction industry and other partners leads to better outcomes, the utility has implemented its Industry Engagement Initiative (IEI) through the following efforts:

- Holding quarterly industry meetings to discuss upcoming projects and their respective scopes
- Partnering with professional associations to gain interest from contractors
- Accelerating Joint Participation Agreements with other municipalities to combine project scopes that will attract contractors

WASD’s success is only possible in concert with its industry partners and other stakeholders, who have worked with the utility every step of the way in delivering top-notch services to its customers. Through its three-pronged IEI approach, WASD will attract the contractors and other partners needed to produce innovative and affordable solutions for County residents and businesses.



Deputy Director Marisela Aranguiz-Cueto and Division Manager Paul Adams address an audience of construction industry professionals interested in County projects on March 9, 2023, during the Miami-Dade Water and Sewer Department Construction Industry Meeting.

SUCCESSION PLANNING & EMPLOYEE DEVELOPMENT

As part of its overall business plan, WASD has adopted a comprehensive employee development and retention strategy, which starts with recruitment and directly aligns with Priority 7 of Mayor Levine Cava’s Thrive305 public engagement initiative — investment in blue-green jobs that benefit our water and environment.

To attract skilled and talented graduates from local schools and colleges, the Department has organized several career fairs and implemented internship programs. **WASD is also developing apprenticeship programs for treatment plant operators in collaboration with agencies such as the Florida Rural Water Association and the Florida Water and Pollution Control Operators Association.** WASD is developing a comprehensive onboarding program for new hires, as well.



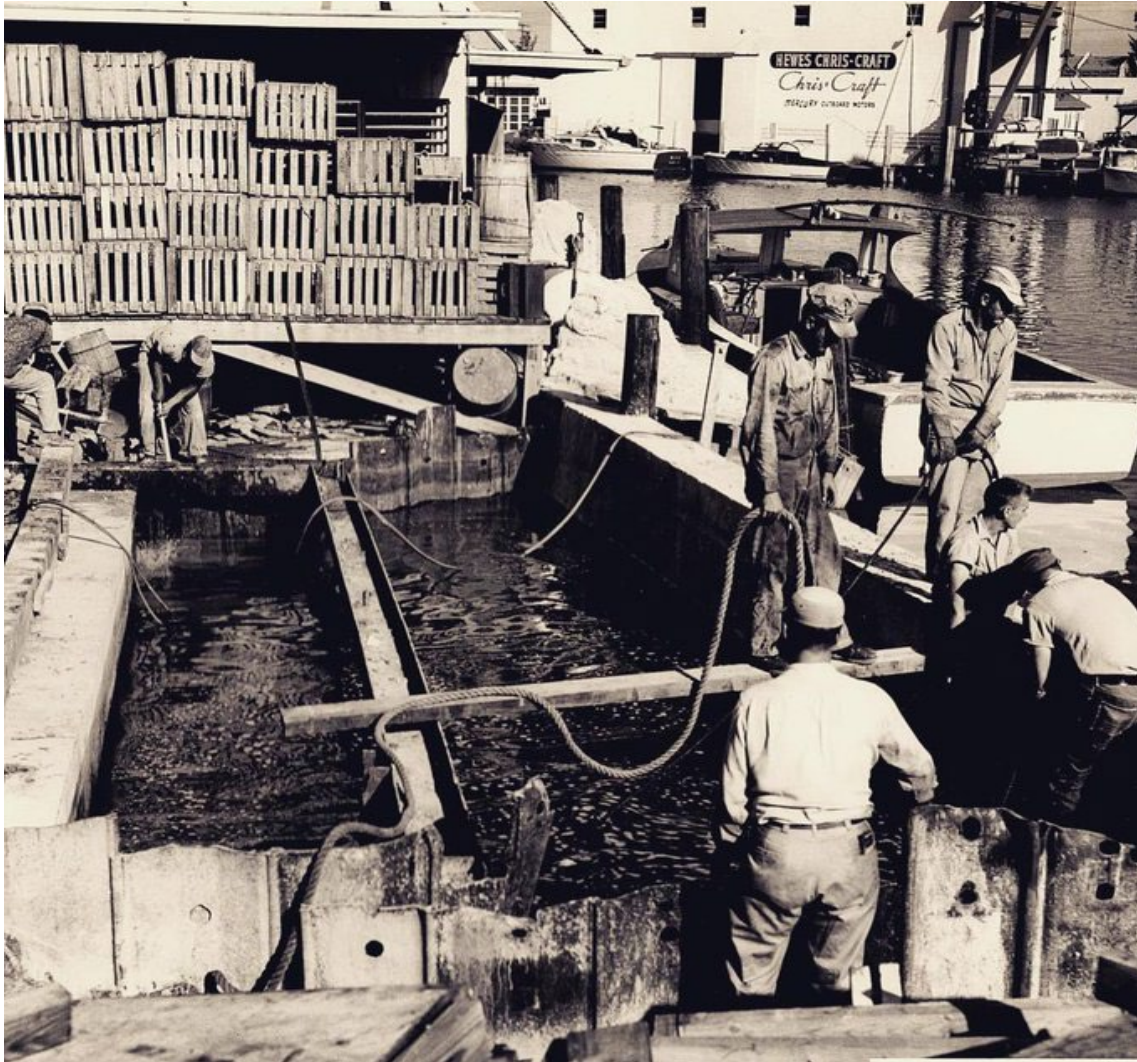
Earlier in 2023, Miami-Dade County Mayor Daniella Levine Cava launched Miami-Dade’s Future Ready Plan — to build the economy of the future today.

Through its many programs and projects, WASD creates thousands of jobs, and through its delivery of excellent water and wastewater services, it supports businesses of all sizes that comprise the economic heart of the County. Moving forward, WASD will further bolster the local economy and job market by implementing a comprehensive plan to actively engage with educational, youth, and other community-based organizations to increase awareness, understanding, and pathways to water sector careers.

The Department provides training opportunities for all employees to enhance their skills and chart a career pathway. However, a critical issue is that several of the Department’s senior employees with vast institutional knowledge are approaching retirement age. To retain this crucial knowledge, WASD provides new employees with on-the-job training and develops standard operating

procedures and work instructions. WASD is also developing electronic operations and maintenance manuals for all water and wastewater treatment plants, providing all employees with easy access to vital information.

Potential internal candidates suited for mission-critical and hard-to-fill positions are identified and provided with the opportunity for training and career development. In addition, overage requests are needed for certain vital positions requiring external hiring so new hires can shadow and learn from senior employees before they retire.



The high-quality water that Miami-Dade County has today is a result of decades of work by WASD staff members. This image dates to the 1950s, when WASD workers executed a project along the Miami River to build the infrastructure needed to help the area flourish as a highly desirable place to work and live.

Historical knowledge in a utility this size is vital to its continued delivery of excellent water and wastewater services. As a sizable portion of the current WASD workforce retires, transferring their knowledge and experience is essential to the Department's comprehensive staffing and succession plan.

EMERGING & CHANGING REGULATIONS

Changes in federal environmental regulations, such as the revised Lead and Copper Rule (LCRR), impact the operation because of the need for additional Operating and Maintenance (O&M) expenses and capital investments. **O&M expenses are closely related to complying with a more aggressive sampling program and other environmental regulations**, such as preparing and regularly updating a lead service line (LSL) inventory.



The quality of drinking water in Miami-Dade County meets or exceeds all federal and state drinking water standards. This is due in part to WASD's stringent sampling and testing of the County's drinking water more than 150,000 times a year to ensure its safety.

Additional capital expenses are due to new projects needed to replace these service lines, following a replacement plan to be established as required by the revised LCRR. Regarding emerging contaminants and, specifically, per- and poly-fluoroalkyl substances (PFAS), these could have a significant fiscal impact on the utility depending on the final Maximum Contaminant Level (MCL) established by the U.S. Environmental Protection Agency (EPA) once these contaminants are officially regulated. In addition, existing plants' processes were not designed to remove these contaminants, so innovative approaches would need to be added.


Therefore, this is not only a financial but an engineering challenge since WASD production facilities have limited available real estate. Additional testing and monitoring can also be expected for both water and wastewater.

ECONOMIC UNCERTAINTIES

Any overall economic slowdown or potential recession could present challenges for the Water and Sewer Department, limiting WASD's ability to meet desired service levels and execute anticipated infrastructure improvement projects.

Currently, the Department manages a diverse funding portfolio with a solid financial profile to tap into during adverse conditions. **Still, it would cut into the planned budget if reliable funding were limited or restricted.** Moreover, at this point, the Department would be faced with the impossible task of choosing between investments to comply with new regulatory requirements to replace deteriorating assets or to prepare and harden infrastructure for the next hurricane.

WASD strives to mitigate this risk and continue to provide sustainable, equitable, and efficient service by implementing improved asset management, best accounting practices, and strategic financial planning while evaluating the economic outlook and forecasts before engaging in new investment programs.



Miami-Dade Water and Sewer Department receives award for financial reporting excellence for 37th consecutive year

MIAMI (April 22, 2021) — The Miami-Dade Water and Sewer Department (WASD) has received the Certificate of Achievement for Excellence in Financial Reporting from the Government Finance Officers Association of the United States and Canada (GFOA) for its Annual Financial Report for the fiscal year that concluded on September 30, 2019.

It is the priority of the Miami-Dade Water and Sewer Department to provide safe, reliable service to its customers. One of the ways the Department ensures that it can do so is by being responsible financial stewards of the County ratepayers' monies, as these fund much-needed investments in infrastructure and maintenance of the water and wastewater system.

Recognition from the Government Finance Officers Association of the United States and Canada is a testament to WASD's commitment to providing reliable water and sewer services to 2.3 million customers now and in the years to come.

AGING INFRASTRUCTURE

The American Society of Civil Engineers grades America’s infrastructure every four years, and it has recognized a stark reality and troublesome path forward. U.S. drinking water systems received a C- and wastewater systems a D+. Much of this is because water and wastewater system funding across the nation has not kept pace with the need to address aging infrastructure —and Miami-Dade County is no different.

The Miami-Dade Water and Sewer networks are one of the largest in the country, consisting of 95 active water production wells, three major water treatment plants, approximately 9,000 miles of water mains, three major wastewater plants, over 1,000 pump stations, and almost 7,000 miles of collection and force mains. Portions of the system and associated equipment are from the original construction era, nearing or having already surpassed their useful life. In the coming years, Miami-Dade will face a significant investment to replace substantial portions of the network.

Below, the Miami-Dade Water and Sewer Department breaks ground on an expansion of the South District Wastewater Treatment Plant to increase capacity. The Wastewater Treatment Plant Expansion Program consists of eight infrastructure projects that will provide an overall regional solution for South Dade to ensure we sustain high-quality, safe, and reliable services today while planning for our thriving economy and growing population in the future.



A growing population further compounds this need with greater demand and stricter and newly emerging regulations. Without reliable and significant investment in the drinking water and wastewater infrastructure systems, it will become increasingly more challenging to operate the system, maintain a high level of service, and meet customer expectations. 💧



Pictured above, South District Plant Expansion Project ST-2B, Clarifiers and High-Level Disinfection, is part of the larger WASD Wastewater Treatment Plant Expansion Program, which, along with other WASD programs, is addressing aging infrastructure, redundancy, future regulations, capacity, and modernization. Additionally, Project ST-2B is creating more than 200 jobs.

Business Plan Report

Water and Sewer Scorecard- Business Plan (OMB)

Perspective Name	Objective Name	Grand Parent Objective Name	Parent Objective Name	Measure Name	Details	Last Period Updated	VR Flag	Actual	Target	FY2022-23 Annualized Target	FY2023-24 Annualized Target
Customer	Support a customer-focused organization by providing convenient access to information and services. (Business Plan) (GG1-1)	GG1-2: Facilitate community outreach and engagement to promote better decision-making in County government	Maintain a high level of responsiveness to customer requests (WASD) (GG1-1)	Percentage of calls answered within the two-minute threshold (monthly) (OMB)	▬	Jan '23	🔴	26.00%	70.00%	70.00%	70.00%
				Average Wait Time per Call (Fiscal Year) (Retail Customer Service and Emergency Communications)	🔵	2022 FY	🔴	3.23minutes	2.00minutes	2.00minutes	2.00minute
Financial	Meet Budget Targets (WASD) (GG4-2)	GG4: Effective leadership and management practices	GG4-2: Effectively prioritize, allocate and use resources to meet the current and future operating and capital needs for all our residents	Expen: Total (Water and Sewer)	🔵	'23 FQ2	🟢	\$188,665K	\$242,859K	\$971,436K	n/a
				Revenue: Total (Water and Sewer)	🔵	'23 FQ2	🔴	\$226,866K	\$242,859K	\$971,436K	n/a
				Positions: Full- Time Filled (WASD)	▬	'23 FQ2	🔴	2,623	2,904	2,904	n/a
				Capital Improvement Expenditure Ratio (in Percent %)	🔵	'23 FQ1	🔴	65%	75%	75%	75%
				Wastewater Capital Infrastructure Improvements Ratio (in percent) Using GOB Funds	▬	'23 FQ1	🔴	69%	70%	70%	n/a
Internal	Ensure timely completion of Consent Decree Wastewater Capital Improvement projects (WASD) (NI2-1) (NI3-2) (NI3-3)	NI2: Continuity of clean water and community sanitation services	NI2-1: Provide sustainable drinking water supply and wastewater disposal services	Percentage (%) of Consent Decree Wastewater Projects on or before Schedule (sortie) (OMB)	🔵	'23 FQ1	🔴	76.5%	83.0%	83.0%	100.0%
	Ensure timely completion of Capital Improvement Projects related to the Ocean Outfall Legislation Program (NI2-1) (NI3-2) (NI3-3)	NI2: Continuity of clean water and community sanitation services	NI2-1: Provide sustainable drinking water supply and wastewater disposal services	Percentage (%) of South District Ocean Outfall Legislation (OOL) Projects on Schedule	▬	'23 FQ1	🔴	63%	100%	100%	100%
				Percentage (%) of North District Ocean Outfall Legislation (OOL) Projects on Schedule	▬	'23 FQ1	🟢	100%	100%	100%	100%
				Percentage (%) of Ocean Outfall Legislation (OOL) Projects on Schedule (OMB)	🔵	'23 FQ1	🔴	86.96%	100.00%	100.00%	100.00%
				Percentage (%) of Central District Ocean Outfall Legislations (OOL) projects on schedule	▬	'23 FQ1	🟢	100.00%	100.00%	100.00%	100.00%
	Improve Water-Use Efficiency (WASD) (NI2-1)	NI2: Continuity of clean water and community sanitation services	NI2-1: Provide sustainable drinking water supply and wastewater disposal services	Gallons of water saved per day (GPD) through implementation of the Water Use Efficiency Plan (OMB)	▬	'23 FQ1	🔴	27,466GPD	63,960GPD	71,100GPD	71,100GPD
				Finished Water Use Per Capita - Consumption (GPCD) (Calendar Year)	▬	2022	🟢	129gpcd	133gpcd	n/a	n/a
	Compliance with regulatory requirements for Water & Wastewater systems (WASD) (NI2-1) (NI3-3)	NI2: Continuity of clean water and community sanitation services	NI2-1: Provide sustainable drinking water supply and wastewater disposal services	Compliance with drinking water standards (% Days) (OMB)	🔵	Jan '23	🟢	100.00%	100.00%	100.00%	100.00%
				Percent compliance with wastewater standards (FY Quarterly) (AWWA) (OMB)	▬	'23 FQ1	🔴	85.87%	100.00%	100.00%	100.00%
				System-wide Available Water Supply Capacity From the Biscayne Aquifer	🔵	Jan '23	🟢	21.40MGD	10.10MGD	10.10MGD	10.10MGD