



City of Marco Island

Meeting Date: March 4, 2024
To: City Council
From: Jeffrey E. Poteet, General Manager- Water & Sewer
Through: Mike McNees, City Manager
Re: Water and Sewer (W&S) Departmental Report

Both the City's drinking water and wastewater operations follow Florida Department of Environmental Protection (FDEP) regulations and all other regulatory entity requirements. The Water and Sewer (W&S) department is operating within the approved budget. Below is a summary of department activities during the past month.

Caught In the Act

The "Caught in the Act" Award serves as a tool for City leadership to promptly and visibly acknowledge exemplary employee efforts that surpass expectations and align with the organization's objectives. In this instance, Jose Lopez and Rogelio Carmona-Silva demonstrated outstanding professionalism and responsiveness when addressing a call from Mr. Russ Howald on Delbrook Way. Mr. Howald, deeply impressed by the City's swift action and the exemplary conduct of Jose and Rogelio, took a moment from his busy schedule to express his admiration, stating, "I was thoroughly impressed with both of these gentlemen." In recognition of their dedication to fulfilling the mission of the Water and Sewer Department, Jose and Rogelio were honored with the "Caught in the Act" Award. As part of this recognition, both team members received a \$50 gift card along with the award certificate.



First Baptist Academy

On February 12, a group of bright high school science students, comprising of sophomores and juniors from First Baptist Academy in Naples, embarked on an enlightening field trip to explore the intricacies of drinking water and wastewater treatment. Led by Sonia Iszler, our esteemed Engineering & Operations Manager, the students delved into the fundamental processes that sustain our community's water resources.

With enthusiasm and curiosity, the 48 students embarked on a comprehensive tour of our cutting-edge facilities, starting with the North Water Treatment Plant (NWTP). As they journeyed through the various stages of water treatment, from intake to purification, their inquisitive minds were ignited by the marvels of modern engineering and environmental stewardship.



As the day concluded, it was evident that the students had not only gained a deeper understanding of water treatment but also developed a newfound appreciation for the vital services provided by our department. With smiles on their faces and minds buzzing with newfound knowledge, they departed, enriched by an unforgettable educational experience that will undoubtedly shape their future endeavors.

W&S Department Open House

On February 14, 2024, the Water & Sewer (W&S) Department warmly welcomed the community to an engaging Open House. Fourteen guests gathered for this Valentines Day event, which was filled with enthusiasm as the guests delved into the inner workings of our water and sewer systems as they drank non-alcoholic mimosas.



The highlight of the event was a comprehensive presentation delivered by our knowledgeable staff, offering an insightful overview of the intricate W&S system that bolsters the city's infrastructure. From the origins of our water sources to the advanced treatment processes that ensure safety and reliability, attendees were guided through every facet of our operations with clarity and expertise.



Following the presentation, guests embarked on a plant tour of our wastewater and drinking water facilities. Starting at the wastewater plant (Reclaimed Water Production Facility), guests gained a deeper appreciation for the innovative approaches employed in recycling and repurposing our water resources.

Throughout the event, attendees were encouraged to ask questions, share insights, and actively engage with our dedicated staff, fostering an atmosphere of collaboration and mutual learning. By the event's end, each guest departed with a newfound understanding of the complexities of water and sewer management, as well as a heightened awareness of the vital role they play in shaping a sustainable future for our community.

South Water Treatment Plant - Well #5 Rehabilitation

The South Water Treatment Plant (SWTP) water supply Well #5 has remained inactive since 2008 due to elevated salinity levels. In 2020, the water and sewer department initiated a comprehensive well maintenance program as part of their Capital Improvement Plan (CIP), aimed at preserving and restoring water production wells. Engaging a hydrogeologist firm, the department conducted a thorough evaluation of the well statuses and received recommendations for rehabilitation.

Over the past three years, the W&S Dept. has successfully rehabilitated six water production wells, achieving remarkable outcomes. Post-rehabilitation and acidification, the production rates of these wells have surged by an impressive 100% to 200%. This initiative has yielded substantial cost savings, considering that constructing a new well typically incurs expenses of approximately \$1 million.



As part of this ongoing maintenance program, the hydrogeologist engineers have identified opportunities to mitigate salinity issues in wells inactive for up to 15 years. Through partial back plugging, it's possible to reduce salinity levels, facilitating the reactivation of these wells and restoring their operational capacity.

This project entails engaging a certified well contractor to conduct back plugging, purging, and water testing for water supply well #5 situated at Mackle Park. The success of this endeavor opens the possibility of implementing the same procedure for the other two inactive wells. This project was sent out to public bid in which three contractors submitted proposals. The project is scheduled to be presented to the City Council for consideration on March 4, 2024. The total project cost amounts to \$95,300, which includes an owner's contingency of \$10,000.

EPA Lead and Copper Rule

The Lead and Copper Rule Revisions (LCRR) were finalized in January 2021. In June 2021, the United States Environmental Protection Agency (USEPA) affirmed the rule requirements and extended the effective date of the LCRR to December 16, 2021, with a compliance deadline of October 16, 2024. These revisions encompass several critical provisions affecting water systems, including adjustments in compliance monitoring, service line inventories, and lead service line replacement (LSLR) plans.

To ensure compliance with the new regulations, the City enlisted the expertise of an engineering consulting firm. The project was structured into three phases. Phase 1a involved initiating an initial service line inventory and developing a plan for potable water corrosion control compliance, completed in October 2023. Phase 1b is currently underway, focusing on finalizing the service line inventory, devising a compliance monitoring strategy (for schools and childcare facilities), and creating outreach materials in collaboration with Collier County Schools. Phase 1b is projected to conclude by July 2024, well in advance of the October 2024 deadline.



In response to evolving requirements, the EPA further extended the compliance deadline for LSLR to October 2027. This requirement falls within Phase 2 of the project, which entails conducting field investigations to ascertain unknown service line materials and formulating the LSLR plan. If non-lead materials are identified in the potable water distribution system, the utility will be exempt from preparing and implementing the LSLR plan.

North Marco Utilities

In November 2023, the City made a significant move by acquiring a small, privately owned collection system nestled within the Old Marco District. With the acquisition of North Marco Utilities, the Water and Sewer (W&S) Department has assumed the responsibility for this collection system, encompassing three lift/pumping stations. W&S staff are diligently working to ensure that all three lift stations meet the reliability and efficiency standards mandated by Florida Statute 62-604.

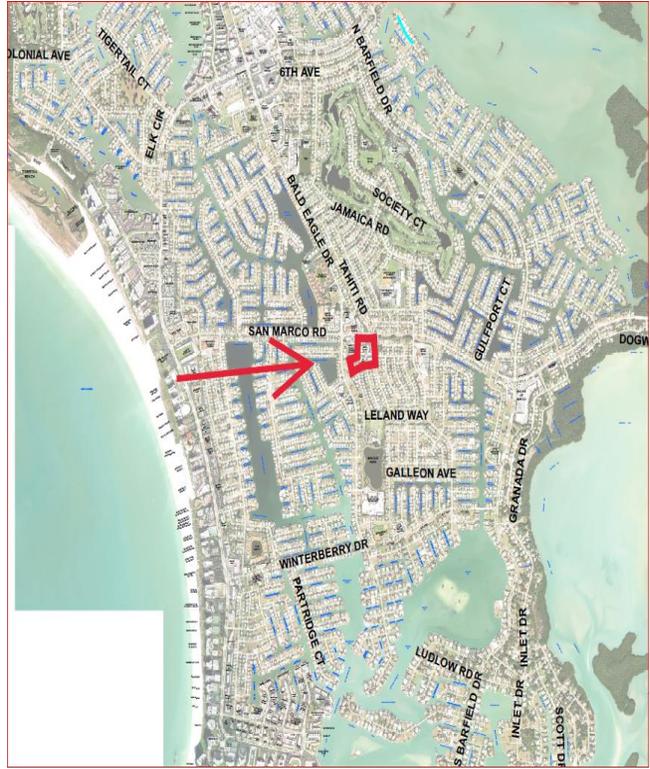
At present, these lift stations operate without the aid of a supervisory control and data acquisition (SCADA) system. SCADA systems integrate software and hardware components that empower staff to:

- Control processes either locally or remotely.
- Monitor, collect, and process real-time data.
- Interact directly with devices such as sensors, valves, pumps, motors, and more through human-machine interface (HMI) software.
- Maintain a detailed log of events.

Currently, W&S staff are in the process of installing the necessary hardware at the remote lift stations to seamlessly integrate them with the Department's existing SCADA system. Once these stations are fully integrated into the SCADA system, staff will gain comprehensive remote control and monitoring capabilities over them, ensuring optimal performance and operational efficiency. Staff anticipates that these lift stations will come under SCADA control by mid-March.



Water Service Interruptions with Boil Water Notice (BWN)			
Month	Number of Service Calls Resulting in a BWN	Number of Customers Affected in the Month	Large Interruptions 50 Customer or More
Feb-23	3	116	Stone Court-51
March-23	4	71	Marco Academy
April-23	1	16	
May-23	2	47	
June -23	2	117	Seaview-220
July-23	7	564	Somerset-122, Shalimar -247
Aug-23	6	317	Grand Bay Condo-60, Gulfport 93,
Sept-23	5	378	1065 Borghese 123; 991 Barfield 60; 1150 N. Collier 76; 1310 Auburndale 52.
Oct.23	4	190	1065 Borghese 123.
Nov-23	2	52	
Dec-23	9	528	Seabreeze W. 70, Tradewinds-204
Jan-24	3	174	Marco Villas 95



Treatment Plant Data

Starting Date:		1/1/2024		Rain Fall for Time Period		3.10 Inches	
Ending Date:		1/31/2024		Average Daily Flow (ADF)			
Aquifer Storage & Recovery				Million Gallons per Day (MGD)			
ASR - Injection Avg. Daily Flow		0.00 MGD		Jan-24		"U" Undetected - results below detection limit	
ASR - Recovery Avg. Daily Flow		0.00 MGD					
Marco Island Drinking Water							
				Max Day	Max Day	Flow	
Combined Consumer ADF		9.76 MGD		1/3/2024	11.81	MGD	
NWTP Consumer ADF		4.06 MGD		1/3/2024	4.58	MGD	
SWTP Consumer ADF		5.70 MGD		1/1/2024	7.47	MGD	
Finished Water Testing							
Minimum Chlorine Residual		3.20 mg/L					
		Maximum	Minimum		Maximum	Minimum	
Turbidity		0.01	0.01	NTU	Chlorides	133	121 mg/L
Total Dissolved Solids		336.00	306.00	mg/L	Color	8	3 mg/L
P-Alkalinity		6.00	2.00	mg/L	Phosphate	0.67	0.53 mg/L
M-Alkalinity		43.00	32.00	mg/L	Ammonia	0.85	0.38 mg/L
Cal-Hardness		108.00	12.00	mg/L	Aluminum	0.15	0.02 mg/L
Total Hardness		136.00	114.00	mg/L	pH	8.9	8.71 SU
Jan-24 Wastewater - RWPF				Monthly Testing			
Average Flow		Monthly Max Day		Influent		Effluent	
Influent	2.61 MGD	1/6/2024	3.19	BOD	248.8	1.00 mg/L	
Reuse	1.47 MGD	1/31/2024	2.13	TSS	209.2	0.6 U mg/L	
Deep Well	1.104 MGD	1/6/2024	1.839	Total N	NA	8.32 mg/L	
				Total P	5.66	3.78 mg/L	