



City of Marco Island

Meeting Date: May 6, 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

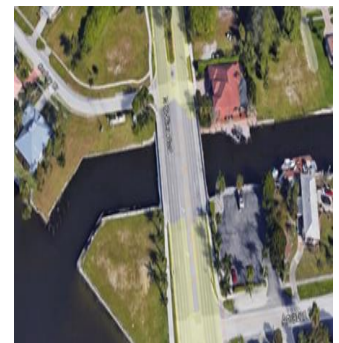
Caught in the Act - On Saturday, April 20, 2024, Jonathan Weber promptly addressed an odor complaint originating from San Marco Road. Mrs. Jeanne Speranza was notably impressed by his expertise, seasoned approach, and professionalism. She generously took the time to acknowledge his commendable efforts. Considering Jonathan's exceptional commitment to exceeding customer expectations and consistently upholding the mission of the Water and Sewer Department, we proudly presented him with a "Caught in the Act" award. In addition to a certificate of recognition, Jonathan was rewarded with a \$50 gift card as a token of our appreciation.



North Collier Boulevard Main Improvement Project Commences

In 2008, significant upgrades were made to the potable water and wastewater infrastructure along both sides of the Collier Blvd bridge at the Bluebonnet waterway, including the installation of 20" mains. However, due to budget constraints at the time, the piping attached to the bridge remained untouched.

This main improvement project is underway to address this gap. The initiative involves the comprehensive replacement of the existing water, wastewater, and reuse mains at the North Collier Boulevard Bridge. The current 12-inch water main and 16-inch wastewater force main will be upgraded to 20-inch piping, ensuring improved efficiency and reliability. The 16-inch reuse water main will also be replaced with similar specifications.



On March 3, 2024, key stakeholders from the Water and Sewer, as well as Public Works departments, convened with our engineering consultant and the construction contractor to kick off the project. To execute the project successfully, the contractor will need to implement two lane closures at different times on Collier Blvd on each side of the Bridge, along with a road closure at the intersection with Century Drive. Century Drive will serve as a staging area during the construction phase.

The Notice to Proceed for the project is scheduled to be issued on May 1, 2024, with a targeted completion date of January 6, 2025. This endeavor represents a vital step in ensuring the continued functionality and resilience of our water and wastewater infrastructure.

Back plugging of Water Supply Well# 5 located at Mackle Park Parking lot.

The primary goal of this project is to rejuvenate ground water well #5 and enhance its productivity by implementing a partial back-plugging strategy. Currently, the lower section of the well contains water with higher salinity levels compared to the upper flow zone. The objective is to mitigate this higher salinity contribution by isolating the lower flow zone, thereby boosting the yield from the upper zone with a reduced saline content. This strategic intervention will elevate the water quality of the well to meet acceptable salinity standards, resulting in significant cost savings for the city.

This initiative holds particular significance during the dry season when demand peaks and surface water availability diminishes. Among the city's 21 ground water wells, 14 are currently operational, 3 are inactive and 4 have been plugged. Many of these wells were constructed in 1991 and subsequently exhibit elevated salinity levels. Notably, one of these inactive wells is well #5, which has been non-operational since 2008 due to excessive salinity issues.

To execute this project, the contractor will require access to a few parking spaces for their equipment. Well #5 is conveniently situated adjacent to the smaller parking lot at Mackle Park, facilitating logistical operations while minimizing disruption to public spaces.



Revitalizing the West HSPS Update

Permits for the demolition of the existing West High Service Pump Station (HSPS) and the construction of a new facility have been officially issued. As of mid-April, the contractor has commenced mobilization efforts and is actively establishing essential infrastructure, including a field office, staging area, and construction entrance. Concurrently, efforts are underway to locate existing underground utilities and establish a robust stormwater pollution prevention plan.

The primary task on the agenda is the removal and replacement of an existing 12" water main, which currently encroaches upon the footprint designated for the new building. Furthermore, the contractor is tasked with exposing, cutting, and capping other underground water and electric lines connected to the old West HSPS to facilitate its eventual demolition.

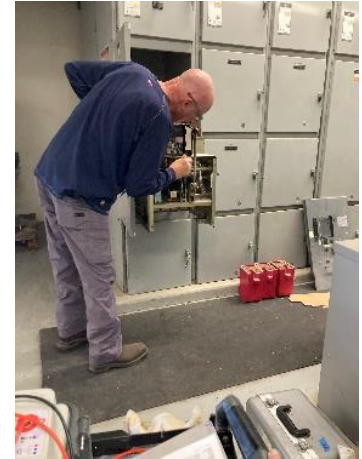


The project timeline spans 12 months, with various phases dedicated to upgrading the aging infrastructure. The existing SWTP West HSPS, approximately 50 years old, suffers from susceptibility to flooding, non-compliance with current hurricane codes, and pump inefficiencies leading to pressure maintenance challenges.

Significantly, the project has secured a noteworthy grant from the Florida Department of Environmental Protection (FDEP) under the Resilient Florida program. The grant, amounting to \$900,000.00, will significantly augment the project's total construction cost of \$4,698,000.00, enhancing its feasibility and impact on community resilience.

South Water Treatment Plant- Power Outage March 30th

On the early morning of March 30th, a disruption occurred at the South Water Treatment Plant due to an electrical issue, leading to the tripping of a primary electrical breaker (3,200 amp) within one of the Motor Control Centers (MCCs). This incident affected the operation of three critical 200hp high service pumps (HSP) responsible for meeting consumer demand during peak water usage hours, typically in the early morning. Consequently, a system-wide pressure drops ensued, with some areas on the south end of the Island experiencing pressure levels as low as 17PSI for a duration of fourteen minutes. As per regulatory requirements, a precautionary boil water notice was promptly issued for these affected areas, which has since been lifted.



Upon investigation, City staff determined that a ground fault was the root cause of the breaker trip. Following a reset of the breaker, power was restored, and normal operations resumed. Subsequently, the Water and Sewer team initiated an inquiry into the cause of the fault, exploring whether it stemmed from a faulty breaker or a genuine ground fault within the electrical system. Seeking expertise, we engaged a local electrical firm, which collaborated with Eaton Corporation, the breaker manufacturer. On April 18th, Eaton Corporation conducted on-site tests on the breaker, ruling out any issues with it and confirming the presence of a ground fault elsewhere in the electrical system.

Scheduled for April 25th, the Water and Sewer team, in collaboration with Eaton staff, will undertake a comprehensive assessment of the electrical system, scrutinizing every component supplied by the affected breaker. Once the exact location of the fault is pinpointed, repairs will be promptly executed to restore system integrity and prevent future disruptions.

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
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, Mainsail 88.
Sept-23	5	378	1065 Borghese 123; 991 Barfield 60;1150
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
Feb-24	0	0	
March-24	3	193	Royal Marco Way-112, Mainsail-80



Treatment Plant Data

Starting Date: **3/1/2024**
 Ending Date: **3/31/2024**

Rain Fall for Time Period **4.60** Inches

Aquifer Storage & Recovery					Average Daily Flow (ADF)		
ASR - Injection Avg. Daily Flow 0.00 MGD					Mar-24		
ASR - Recovery Avg. Daily Flow 1.91 MGD					Million Gallons per Day (MGD)		
Marco Island Drinking Water							
					Max Day	Max Day	Flow
Combined Consumer ADF 10.06 MGD					3/13/2024	11.53	MGD
NWTP Consumer ADF 3.96 MGD					3/30/2024	5.06	MGD
SWTP Consumer ADF 6.09 MGD					3/18/2024	7.18	MGD
Finished Water Testing							
Minimum Chlorine Residual 3.00 mg/L							
		Maximum	Minimum		Maximum	Minimum	
Turbidity	0.01		0.01	NTU	Chlorides	137	125 mg/L
Total Dissolved Solids	373.00		314.00	mg/L	Color	7	3 mg/L
P-Alkalinity	8.00		3.00	mg/L	Phosphate	0.67	0.51 mg/L
M-Alkalinity	45.00		5.00	mg/L	Ammonia	1.1	0.55 mg/L
Cal-Hardness	120.00		84.00	mg/L	Aluminum	0.12	0.04 mg/L
Total Hardness	136.00		116.00	mg/L	pH	8.94	5.79 SU
Mar-24 Wastewater - RWPF					Monthly Testing		
Average Flow		Monthly Max Day			Influent	Effluent	
Influent	2.94 MGD	3/22/2024	3.86		BOD	218.5	1.00 mg/L
Reuse	1.94 MGD	3/13/2024	3.13		TSS	188	0.6 U mg/L
Deep Well	0.953 MGD	3/23/2024	2.349		Total N	NA	8.23 mg/L
					Total P	5.13	3.75 mg/L