



City of Marco Island

Meeting Date: February 3, 2025
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 W&S Department is operating within the approved budget. Below is a summary of department activities during the past month.

Sweetharts and Sewers - Water and Sewer Open House

Looking for a unique and memorable way to celebrate Valentine's Day? We've got you covered! Whether you're celebrating with a loved one or enjoying the day solo, join us for the Water and Sewer Open House on Friday, February 14, 2025.

Discover the fascinating work your Water and Sewer Department does for the community, explore our state-of-the-art facilities, and maybe even find something new to love about the vital services we provide!

Location: North Water Treatment Plant, 807 E. Elkcam Circle, Gate "B"

Date: Friday, February 14, 2025

Time: 9:00 AM – 11:30 AM

- Presentation: Begins at 9:30 AM, providing an overview of the Water and Sewer system.
- Plant Tour: Follows the presentation.
- Important: Guests participating in the plant tour are required to wear closed-toe shoes for safety.

This is a fantastic opportunity to see behind the scenes, learn more about the services you rely on, and connect with the dedicated team working to ensure clean water and efficient wastewater management.

Mark your calendar and join us for an engaging and enlightening Valentine's Day experience! We can't wait to see you there!



North Marco Main Improvements

The North Marco Water Main Improvement Project involves replacing an aging 4-inch asbestos cement water main with a modern 10-inch PVC pipe. This upgrade will significantly enhance the water infrastructure within the historic North Marco area, addressing critical public health requirements and improving fire protection capabilities.

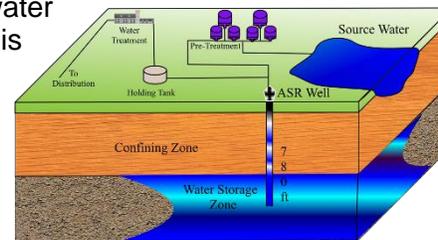
The project is currently out for bid. A pre-bid meeting was successfully held on January 15, and the bid opening is scheduled for February 27. Upon receiving City Council approval, construction is expected to commence in May and continue through November.



These improvements will not only address the community's immediate water distribution needs but also provide a robust foundation for accommodating future growth and increasing demand. This strategic investment ensures the North Marco area is well-equipped to support the community for years to come.

Aquifer Storage and Recovery (ASR)

The Aquifer Storage and Recovery (ASR) system is a sustainable water management solution that stores fresh water in an underground, brackish-water aquifer (780' below the surface). The injected fresh water forms a "bubble" in the brackish-water formation and is available for future recovery when needed. This system is vital for sustaining the City of Marco Island's water resources by creating a secondary raw water supply using the aquifer as a natural storage basin. In the event of disruptions to the primary raw water supply - such as pollution or extreme drought - the ASR system ensures the City can maintain continuous water production.



The City of Marco Island's ASR system includes:

- 7 wells for injection and recovery,
- 3 monitoring wells to track water quality and aquifer health,
- 6 pressure filters, for pre-injection treatment
- Chemical tanks and chemical feeding equipment for injection water quality adjustments
- A pump house equipped with two 400 HP pumps,



ASR systems operate in two primary cycles:

1. **Storage Cycle:** Water is injected into the aquifer during the rainy season (July–November) when water is abundant. The process involves filtering water from the lake, adding chemicals to achieve a 1 part-per-million chlorine residual, stabilizing pH, and injecting the treated water into the 7 wells.
2. **Recovery Cycle:** During the dry season (January–June), water is withdrawn from the aquifer by activating pumps in the wells.



The ASR system requires strict adherence to water sampling protocols, as outlined by the Florida Department of Environmental Protection (FDEP). During recovery, every well in use is sampled according to the FDEP's schedule and parameters, including monitoring wells.

During the storage cycle, sampling is conducted at one injection location and the monitoring wells, per FDEP requirements.

The city entered the recovery cycle on January 7, 2025, with the aquifer currently holding 1.2 billion gallons of water. Below are injection and recovery volumes (in million gallons, MG) for the past two years:

• Injection Cycle:		
○ 2023:	514.75	MG
○ 2024:	1,016.09	MG
• Recovery Cycle:		
○ 2023:	162.89	MG
○ 2024:	266.59	MG

South Water Treatment Plant (SWTP) West High Service Pump Station (HSPS)

Significant progress has been made on the SWTP West HSPS project, with most above ground and underground piping work now completed. The contractor is currently preparing for final connections to the existing pipe network, a critical step that requires close coordination among the contractor, plant operators, and the project engineer to ensure precision and minimize disruptions.



From late January through February, the contractor will focus on key building and system installations, including:

- Constructing the pump house walls, roof, and doors,
- Making electrical connections,
- Installing lightning protection, fire suppression systems, and HVAC systems.

The contractor has requested a four-month extension to the project timeline due to delays caused by hurricanes and the late delivery of electrical equipment. With this extension, the project is now anticipated to reach completion by the summer of 2025.



Once finalized, the SWTP West HSPS will enhance the operational efficiency and reliability of the South Water Treatment Plant, supporting the city's growing water demands.

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
Jan-24	3	174	Marco Villas 95
Feb-24	0	0	
March-24	3	193	Royal Marco Way-112, Mainsail-80
April-24	5	290	Eagle Cay-126, Madeira-103
May-24	2	403	4 Condos
June-24	4	229	4000 Royal Marco Way-
July-24	4	170	San Marco Villas-65
Aug-24	0	0	****NOTE NO PRECAUTIONARY BOIL WATER NOTICES FOR AUG
Sept-24	4	307	Marco Villas-68 Twice, and Seabreeze 120
Oct-24	5	320	Aquarius 50, Marco Villas-68, 6000 Royal Marco Way-78, Seawatch-80
Nov-24	6	383	6000 Royal marco Way-78, Tradewinds-204
Dec-24	3	160	1771 Mainsail 100, 901 South Collier 52.



Treatment Plant Data

Starting Date: **11/1/2024** Rain Fall for Time Period **0.50** Inches
 Ending Date: **11/30/2024**

Aquifer Storage & Recovery				Average Daily Flow (ADF)			
ASR - Injection Avg. Daily Flow 6.64 MGD				Nov-24			
ASR - Recovery Avg. Daily Flow 0.00 MGD				"U" Undetected - results below detection limit			
Marco Island Drinking Water							
				Max Day	Max Day	Flow	
Combined Consumer ADF 10.82 MGD				11/25/2024	11.91	MGD	
NWTP Consumer ADF 3.97 MGD				11/4/2024	4.64	MGD	
SWTP Consumer ADF 6.85 MGD				11/25/2024	7.74	MGD	
Finished Water Testing							
Minimum Chlorine Residual 3.50 mg/L							
		Maximum	Minimum			Maximum	Minimum
Turbidity	0.01	0.01	NTU	Chlorides	121	109	mg/L
Total Dissolved Solids	288.00	119.00	mg/L	Color	9	1	mg/L
P-Alkalinity	8.00	4.00	mg/L	Phosphate	0.86	0.52	mg/L
M-Alkalinity	43.00	37.00	mg/L	Ammonia	0.96	0.52	mg/L
Cal-Hardness	260.00	76.00	mg/L	Aluminum	0.12	0.05	mg/L
Total Hardness	280.00	96.00	mg/L	pH	8.88	8.63	SU
Nov-24 Wastewater - RWPF				Monthly Testing			
		Average Flow	Monthly Max Day			Influent	Effluent
Influent	2.21	MGD	11/2/2024	2.40	BOD	139.5	1.25 mg/L
Reuse	2.13	MGD	11/6/2024	2.64	TSS	129.5	0.6 U mg/L
Deep Well	0.112	MGD	11/9/2024	0.433	Total N	NA	8.75 mg/L
					Total P	5.75	4.95 mg/L