



# City of Marco Island

Meeting Date: April 8, 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.

## **North Marco Water Main Replacement**

The North Marco area's water infrastructure comprises a mix of 4-inch and 8-inch asbestos cement (AC) pipes in conjunction with a 10-inch PVC pipe. The aging 8-inch and 4-inch asbestos water pipes are approaching the end of their operational lifespan, necessitating replacement.

Anticipating redevelopment in the area, in August 2023, the City Council authorized the engineering design for the replacement of this aging infrastructure. These improvements include replacing both the 8-inch and 4-inch asbestos water pipes. Currently, the project's design phase is underway, with the engineering firm having furnished 90%-design drawings. These drawings are presently under review by the water and sewer department staff.

In April 2024, we expect to wrap up the design phase of the project. At this juncture, our staff will have the engineer's cost estimate for construction at their disposal. Subsequently, the project will be ready for the public bidding process.

Upon conclusion of the bidding phase, our team will present an award of contract for construction of this project to the City Council for consideration.

## **Spill Event Summary**

On March 21, 2024, at around 9:15 a.m., a malfunction occurred in the air relief valve situated on the force main system along Collier Blvd just north of the Jolley Bridge. This malfunction resulted in the inadvertent release of approximately 14,000 gallons of untreated sewage onto the roadside swale adjacent to the mangrove area.

Prompt action was taken, and by approximately 9:45 a.m., the malfunctioning valve was isolated and then replaced with a new one. In response to the spill, dehydrated lime was promptly applied in the affected area to disinfect the affected area and mitigate potential environmental impacts.



Following standard protocols, the incident was immediately reported to the appropriate regulatory authorities, including the Florida Department of Environmental Protection and State Watch Office, to ensure proper oversight and management of the situation.

Moving forward, we remain committed to implementing preventative measures and conducting thorough assessments to minimize the risk of similar incidents in the future. Staff will be inspecting the other air relief valves in our system to help ensure proper operation.

**Membrane Bioreactor (MBR) Wind Retrofit**

The wastewater membrane bioreactors (MBRs) are housed within a roof structure currently vulnerable to windstorms, posing a significant risk. With five MBR units housed within, the potential loss of this equipment would lead to a cessation of raw sewage treatment, resulting in catastrophic spills for the city. To mitigate this risk and ensure continuous operational capacity at full efficiency, it's imperative to reinforce the MBR building against environmental threats.



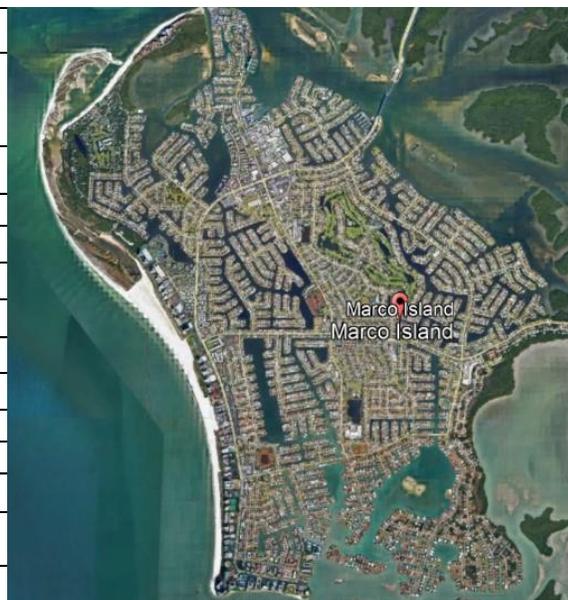
During previous hurricanes, the existing synthetic fiber system (Kevlar) proved inadequate, succumbing to damage, and rendering it an unreliable safeguard for the multimillion-dollar infrastructure. Recognizing the urgency for a durable, long-term solution, the City engaged an engineering firm to design a permanent protective structure.

The proposed design entails fortifying the existing pre-engineered structures covering the equipment skid and crane structure with steel brace frames. Additionally, steel siding perimeter walls with impact-rated louvers will enclose the structures, enhancing resilience. Integration of rated overhead doors equipped with electrical operators further bolsters defense against potential windstorm damage, safeguarding critical machinery.



Completion of the wind retrofit and hardening structure design marks a pivotal milestone. With construction bids solicited and three bids obtained, the lowest bid is presently under review by FEMA. Upon FEMA's approval of the submittal and draft contract, the Water & Sewer department will present the project to the City Council for consideration. This proactive approach ensures the protection of vital infrastructure and minimizes the risk of environmental harm from sewage spills.

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
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
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	



# Treatment Plant Data

Starting Date: **2/1/2024**  
 Ending Date: **2/29/2024**

Rain Fall for Time Period **4.40** Inches

<b>Aquifer Storage &amp; Recovery</b>	<b>Average Daily Flow (ADF)</b>
ASR - Injection Avg. Daily Flow <b>0.00</b> MGD	<b>Million Gallons per Day (MGD)</b>
ASR - Recovery Avg. Daily Flow <b>0.42</b> MGD	"U" Undetected - results below detection limit

Marco Island Drinking Water			
	Max Day	Max Day	Flow
Combined Consumer ADF <b>9.58</b> MGD	2/28/2024	<b>11.00</b>	MGD
NWTP Consumer ADF <b>3.92</b> MGD	2/8/2024	<b>4.68</b>	MGD
SWTP Consumer ADF <b>5.66</b> MGD	2/17/2024	<b>6.82</b>	MGD

Finished Water Testing							
Minimum Chlorine Residual		<b>3.10</b> mg/L					
	Maximum	Minimum		Maximum	Minimum		
Turbidity	<b>0.01</b>	<b>0.01</b>	NTU	Chlorides	<b>131</b>	<b>118</b>	mg/L
Total Dissolved Solids	<b>316.00</b>	<b>304.00</b>	mg/L	Color	<b>9</b>	<b>2</b>	mg/L
P-Alkalinity	<b>8.00</b>	<b>3.00</b>	mg/L	Phosphate	<b>0.67</b>	<b>0.43</b>	mg/L
M-Alkalinity	<b>39.00</b>	<b>30.00</b>	mg/L	Ammonia	<b>0.93</b>	<b>0.54</b>	mg/L
Cal-Hardness	<b>102.00</b>	<b>84.00</b>	mg/L	Aluminum	<b>0.13</b>	<b>0.06</b>	mg/L
Total Hardness	<b>134.00</b>	<b>118.00</b>	mg/L	pH	<b>8.9</b>	<b>8.62</b>	SU

Feb-24 Wastewater - RWPF				Monthly Testing			
Average Flow		Monthly Max Day		Influent	Effluent		
Influent	<b>2.84</b> MGD	2/18/2024	<b>4.04</b>	BOD	<b>245.3</b>	<b>1.00</b> mg/L	
Reuse	<b>1.63</b> MGD	2/1/2024	<b>2.31</b>	TSS	<b>223</b>	<b>0.6 U</b> mg/L	
Deep Well	<b>1.157</b> MGD	2/18/2024	<b>2.619</b>	Total N	<b>NA</b>	<b>9.04</b> mg/L	
				Total P	<b>5.6</b>	<b>4</b> mg/L	