

Meeting Date: To: From: Through: Re: September 5, 2023 City Council Jeffrey E. Poteet, General Manager- Water & Sewer Mike McNees, City Manager Water and Sewer (W&S) Departmental Report

City of Marco Island

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.

## Annual Temporary Modification to the Drinking Water Disinfection Process

The City of Marco Island (City) will temporarily change the disinfection process for the potable (drinking) water supply of the Marco Island and Marco Shores service areas. From 9/1/23 through 9/30/23, the water will be disinfected with free chlorine rather than chlorine combined with ammonia (chloramines). This conversion to free chlorine (a stronger disinfectant) from chloramines allows the city to perform an annual water distribution system purge as recommended by the Florida Department of Environmental Protection for water utilities using chloramines as their primary disinfectant. The process will begin on 9/1/23.



### **Biologically Activated Filters Project**

The design of the source water facility biologically active filter improvement project has been completed and permits have been obtained. This project public bid is scheduled to be posted on 8/27, and the bid opening is scheduled for 10/5. Once the bidding process is completed, the award for construction will be presented to City Council for consideration on 10/16.



## North Water Treatment Plant (NWTP) High Service Pump (HSP) Repair

The NWTP HSP station has three 200-horsepower HSPs, each pumping 1/3 of the peak hourly flow, however it is designed for an additional HSP. Recently, one of the 200horsepower HSPs failed. The W&S maintenance team removed the pump, which was then sent out for repairs. Once the pump was repaired, the maintenance team reinstalled the pump and placed it back into operation. The pump was out of operation for 14 days. During this short time, the peak water demand was met by using the existing South Water Treatment Plant's (SWTP) West HSP station. The SWTP West HSPS is scheduled to be replaced



beginning in April 2024. That station will be out of service for approximately 1 year.

To meet the firm pumping capacity as outlined in F.A.C. 62-550, a fourth pump is required at the NWTP HSP station. Therefore, the purchase of the fourth NWTP HSP will be on the next City Council meeting agenda for consideration. It is staff's intention to install the new pump and necessary piping utilizing inhouse staff.

# South Water Treatment Plant (SWTP) Rezone

The rezoning permit to rezone the City's property at 415 Lily Court from residential use to public use is in progress. This is the City's property where the SWTP is located. Currently, the SWTP operations staff, the Collection and Distribution team and the City's Public Works department work from this location. The W&S staff has been working to obtain all the necessary paperwork for the rezoning process and has submitted the permit application to the Growth Management Department (GMD) for their review. Staff answers and satisfies the GMD permit application questions, the W&S staff will proceed with the following requirements:

 <u>Prepare and Coordinate the Neighborhood Information Meeting (NIM)</u>: This meeting is required to be held 30 days prior to the Planning Board Hearing. Notice of the NIM must be advertised in the newspaper and mailed (via certified mail, return receipt requested) to surrounding property

owners within 300 feet of property lines at least 15 days prior to the Planning Board Hearing.

Prepare and compile the paperwork for the Planning Board Hearing - meets only 1<sup>st</sup> Friday of the month: – Planning needs to be satisfied that the application meets requirements at least 2 weeks prior to the Planning Board Hearing to be placed on its agenda. Notice of the public hearing advertised, mailed must be (certified/return receipt), and sign posted on a sign at the site at least 15 days prior to the hearing.



<u>City Council Meeting – meets 1<sup>st</sup></u>
<u>Monday and 3<sup>rd</sup> Monday of the month:</u> Requires the same procedure as the Planning Board Hearing.



### Aquifer Storage and Recovery System – City of Marco Island

Aquifer Storage and Recovery (ASR) is a process of storing water in an underground aquifer so it can be recovered (withdrawn), in the future as needed. The primary purpose of the City's ASR system is to help sustain the City's fresh water supply. This is accomplished by capturing fresh surface water when it is plentiful, storing it in the ground until that water is needed, and then recovering the water to supplement the City's water supply. Furthermore, should something happen to the City's primary surface water source, like pollution or extreme drought, the City can use this alternative water supply to continue water production. Our ASR system consists of 7 ASR





Injection prefilters

Injection Well #5

wells, 3 monitoring wells, 6 pressure filters, a pump house with two 400 HP pumps and chemical tanks with chemical feeding equipment.

ASR Systems have two phases of operation, a storage phase where water is injected into the aquifer and a recovery phase where water is withdrawn from the aquifer. The storage phase of the ASR System occurs during the rainy season, roughly July to November, when water is abundant, and the recovery phase occurs January to June, during the dry season. ASR storage involves filtering lake water, adjusting the injection water's pH and disinfecting the water with Chlorine. These chemical adjustments are to protect the porous rock formation in the well, so that solids or calcium precipitation do not hinder the formation's ability to inject or withdraw water from the 7 ASR wells. Recovery is achieved by simply turning on a pump in each of the 7 wells to withdraw the treated water from the aquifer. Staff anticipates storing over 300,000,000 gallons of recoverable water in this year's injection cycle.

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 Interuptions 50 Customer or More						
Aug-22	2	32							
Sept-22	4	91							
Oct-22	422	4	Lamplighter-294						
Nov-22	0	0							
Dec-22	3	59							
Jan-23	5	248	M imosa-85/ Royal Marco Way						
Feb-23	3	116	Stone Court-51						
March-23	4	71	Marco Academy						
A pril-23	1	16							
Мау-23	2	47							
June -23	2	117	Seaview-220						
July-23	7	564	Somerset-122, Shalimar -247						



Treatment Plant Data												
Starting Date: 7/1/2023				Rain Fall for	Time Period	5.30	Inches					
Ending Date: <b>7/31/2023</b>					Average Da		ily <b>F</b> low (ADF)					
Aquifer Storage & Recovery						Million Gallons per Day (MGD)						
ASR - Injection Avg. Daily Flow		<b>1.23</b> MGD		Jul-23	"U" Undete	etected - results below						
ASR - Recovery Avg. Daily Flow		0.00	<b>0.00</b> MGD		detection limit							
Marco Island Drinking Water												
					Max Day	Max Day	Flow					
		Combined Consumer ADF	9.89	MGD	7/15/2023	11.29	MGD					
NWTP Consumer ADF		3.76	MGD	7/12/2023	4.53	MGD						
		SWTP Consumer ADF	6.13	MGD	7/30/2023	7.19	MGD					
Finished Water Testing												
Minimum Chlorine Residual 3.40 mg/L												
		Maximum	Minimum			Maximum	Minimum					
Turb	idity	0.01	0.01	NTU	Chlorides	136	124	mg/L				
Total Disso	lved Solids	374.00	313.00	mg/L	Color	7	2	mg/L				
P-Alka	linity	6.00	3.00	mg/L	Phosphate	0.8	0.56	mg/L				
M-Alka	alinity	39.00	33.00	mg/L	Ammonia	0.98	0.7	mg/L				
Cal-Ha	rdness	100.00	78.00	mg/L	Aluminum	0.08	0.03	mg/L				
I otal Ha	ardness	130.00	104.00	mg/L	рН	9	8.8	ISU				
Jul-23 Wastewater - RWPF			Monthly Testing									
Average Flow		Monthly Max Day		Influent Effluent		1						
Influent	2.02	MGD	7/2/2023	2.38	BOD	113.5	1.00	mg/L				
Reuse	2.36	MGD	7/28/2023	2.79	TSS	118	0.6 U	mg/L				
Deep Well	0.024	MGD	7/8/2023	0.287	Total N	NA	6.82	mg/L				
					Total P	5	3.85	mg/L				