



City of Marco Island

Meeting Date: August 19, 2019
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 are in compliance with 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.

Annual Water Treatment Process Disinfection Change

The City of Marco Island (City) will be temporarily changing the disinfection process for the potable (drinking) water supply for the Marco Island Drinking Water Service Area. From 9/1/19 through 9/30/19, 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.

Source Water Facility Electrical Feed Replacement

The electrical feed replacement at the source water pumping facility has been completed. The FP&L transformer that supplies power to the facility exploded in January. The electrical feed busway connecting the FP&L transformer to the facility electrical switchgear arced and burned a hole in the busway and the exterior wall of the building. This resulted in loss of half of the power capacity supplied to the facility. The power to the facility has been fully restored.



Collier Blvd. Roadway Improvements

FDOT is planning roadway improvements on Collier Blvd. (SR 951), from Tower Rd south to Manatee Rd. These improvements will impact the City of Marco Island's 24" raw water main. FDOT's utility review has identified six potential conflicts with the City's 24" raw water main. Staff's review has identified other areas that may require additional utility modifications, due to limited pipeline cover depths. Valve height adjustments may be needed as well to accommodate the proposed roadway construction. FDOT has not set a schedule for the proposed roadway construction.

W&S Backpack Collection for Shelter Children

Members of the Water & Sewer (W&S) Department participated in the "Back to School Essentials" for the Shelter for Abused Women and Children. The W&S staff was able to deliver 24, fully supplied backpacks to the cause.



Marco Shores Alternative Water and Sewer Improvements Project

The horizontal directional drilling of two 16" diameter High Density Polyethylene (HDPE) sanitary forcemains from Capri Blvd to the new master pump station on Collier Blvd. is complete. The contractor has installed the 12" diameter force main on Collier Blvd., south of Capri Blvd. Work continues on the restoration of the sod, driveways, sidewalks and the installation of the air release valves on 6th avenue and E. Elcam Circle. The 20" diameter water main crossing Collier Blvd at the north landing of the Jolley Bridge has been installed via directional drill. In August, there will be intermittent lane closures in the outside northbound lanes on Collier Blvd between McIlvane Bay Bridge and Mainsail Drive. A lane closure is expected in September on Capri Blvd for the installation cut of the 12" diameter force main. Final project completion is expected at the end of January 2020.



NWTP Membrane Softening

For the last few years, the W&S Department has been conducting a small-scale preliminary study to evaluate the feasibility, costs (operating and capital), membrane performance, and design considerations to switch the NWTP treatment process from lime softening to membrane softening. The preliminary study has obtained enough information for the design. In March 2019, the City sent out a Request for Qualifications (RFQ) for professional engineering consulting firms with significant current experience in the design of municipal low-pressure reverse osmosis. The RFQ was advertised in March of 2019. One firm, Jacobs Engineering responded to the request. Jacobs is qualified and staff negotiated a contract that is commensurate with the level of effort for this task. Although the design contract award is ready for City Council's consideration, additional funding for construction is required based on updated construction estimates. Therefore, the award of contract for design will be deferred.

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
July-18	6	131	3 Condos-57 Units
Aug-18	4	115	2 Condos-74 Units
Sept-18	4	432	1 Condo-256 Units
Oct-18	6	287	1 Condo-120 Units
Nov-18	2	44	0 Condo
Dec-18	2	69	1 Condo
Jan-19	3	87	1 Condo
Feb-19	4	70	1 Condo-Owners Request
Mar-19	4	1023	All Mainsail and 1 Condo-988 Units
Apr-19	2	950	2 Condos-(950 Units)Both Condos Requested Service Interruption
May-19	5	138	0 Condo
June-19	11	853	2 Condos-605 Units



Treatment Plant Data

Starting Date: **6/1/2019**
Ending Date: **6/30/2019**

Rain Fall for Time Period **12.40** Inches

Aquifer Storage & Recovery			Average Daily Flow (ADF) in Million Gallons per Day (MGD)
ASR - Injection Avg. Daily Flow	0.00 MGD	Jun-19	
ASR - Recovery Avg. Daily Flow	2.68 MGD		

Marco Island Drinking Water			
		Max Day	Max Day Flow
Combined Consumer ADF	7.93 MGD	6/8/2019	10.37 MGD
NWTP Consumer ADF	3.38 MGD	6/8/2019	4.20 MGD
SWTP Consumer ADF	4.55 MGD	6/5/2019	6.44 MGD

Finished Water Testing							
Minimum Chlorine Residual		3.10 mg/L					
	Maximum	Minimum		Maximum	Minimum		
Turbidity	0.05	0.03 NTU	Chlorides	165	106 mg/L		
Total Dissolved Solids	382.00	288.00 mg/L	Color	8	1 mg/L		
P-Alkalinity	6.00	2.00 mg/L	Phosphate	0.78	0.51 mg/L		
M-Alkalinity	41.00	33.00 mg/L	Ammonia	0.99	0.69 mg/L		
Cal-Hardness	122.00	85.00 mg/L	Aluminum	0.04	0.01 mg/L		
Total Hardness	152.00	115.00 mg/L	pH	9.06	8.63 SU		

Jun-19 Marco Shores Drinking Water Purchase			
Monthly Flow - MGD		CL2 Residual - Minimum 2.0 mg/L	
ADF	Total Flow	Monthly Max Day	
0.174	5.2	6/25/2019	0.252

Jun-19 Wastewater - RWPF							
Average Flow		Monthly Max Day		Monthly Testing			
Influent	2.20 MGD	6/18/2019	4.048	Influent	Effluent		
Reuse	1.65 MGD	6/4/2019	2.9	BOD	131	1.99 mg/L	
Deep Well	0.661 MGD	6/18/2019	2.936	TSS	139.3	0.6 U mg/L	
				NO3	NA	8.64 mg/L	

Jun-19 Wastewater - Marco Shores WWTP							
Average Flow		Monthly Max Day		Monthly Testing			
Influent	0.070 MGD	6/15/2019	0.103	Influent	Effluent		
				BOD	100.2	1.90 mg/L	
				TSS	108.5	0.85 mg/L	