

***PEACE RIVER MANASOTA REGIONAL WATER SUPPLY AUTHORITY  
BOARD OF DIRECTORS MEETING  
October 1, 2021***

**ROUTINE STATUS REPORTS  
ITEM 1**

**Hydrologic Conditions Report**

## MEMORANDUM

**Project:** Hydrologic Conditions Report  
**Date:** September 9, 2021  
**TO:** Mike Coates, Executive Director  
**Developed By:** Samuel Stone, Land & Environmental Services Manager

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This memorandum summarizes rainfall, surface water conditions, and the Authority's current water storage and supply conditions for the month of August, and the preceding 12-month period.

### Rainfall Conditions & Projections

Rainfall in the Peace River Basin for the past 12-months is 4.5-inches below normal. This data covers the 12-months through August 31, 2021 (see Table 1). Rainfall for the month of August 2021 totaled 6.3 inches while the historical average rainfall for August is 7.7 inches.

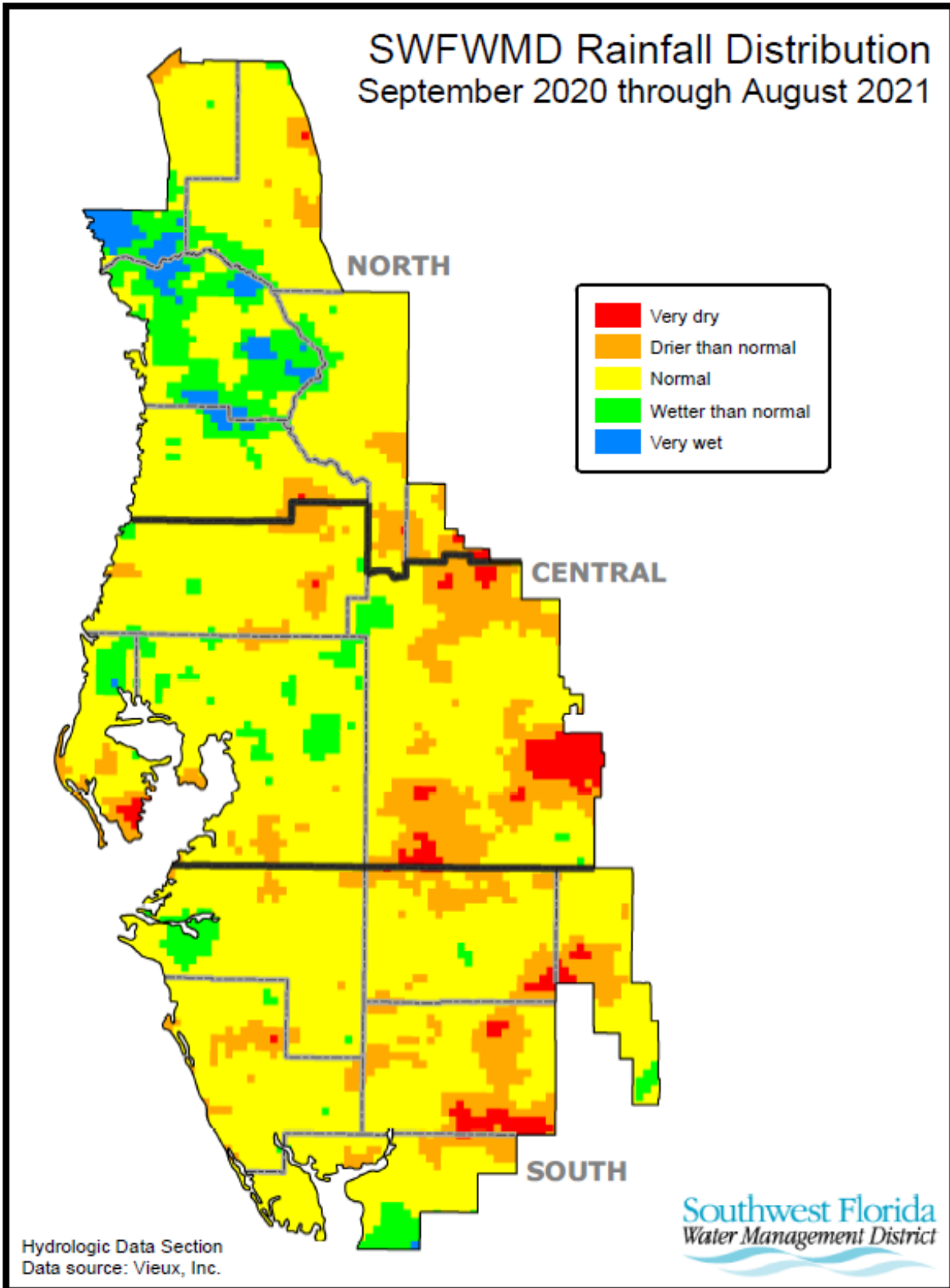
Region-wide rainfall conditions reported by SWFWMD for the 12-month period ending July 31, 2021 are shown in Figure 1 (this map is the most up-to-date map available). Data shown for the Authority's 4-county service area on Figure 1 indicate normal rainfall conditions for most of the service area with some dry conditions along the coast. The Peace River Basin indicates mostly normal conditions with some wetter conditions in the upper basin.

Projections for the next three months (September-November) from NOAA shows a probability of temperatures to be above-normal with near-normal rainfall for southwest Florida. The NOAA extended forecast shows a probability of La Nina conditions to emerge during August-October and persisting through the winter. La Nina development in the fall and winter typically brings warmer drier conditions to the Florida Peninsula.

Table 1 (Peace River Basin Rainfall - Inches)

Month	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	12 Mo Total
Hist. Avg Rainfall	7.7	7.3	3.1	1.7	1.9	2.2	2.5	2.9	2.5	4.0	8.4	8.1	7.7	52.2
Actual Rainfall	7.9	7.8	3.2	2.9	2.3	0.3	3.6	0.5	3.7	0.6	7.0	9.4	6.3	47.6
Diff. Hist. vs Actual	0.2	0.6	0.0	1.2	0.4	-1.9	1.2	-2.4	1.1	-3.3	-1.4	1.3	-1.4	-4.5

Figure 1 (SWFWMD Rainfall Conditions Map)



## River Flow Conditions

The locations of two U.S. Geological Survey gages, one in the upper portion of the basin “Peace River at Fort Meade” and one in the lower portion “Peace River at Arcadia” are shown in Figure 2, and flow conditions at these gages are discussed below:

Flow at Fort Meade gage (see Figure 3) and flow at Arcadia gage (see Figure 4), both locations are below the seasonal historical average for the month of August 2021. Flow at Arcadia gage (about 15 miles upstream of the Authority’s intake) is one of the gages used to calculate daily river water the Authority can withdraw.

Figure 2 (Peace River Basin showing selected gage locations)

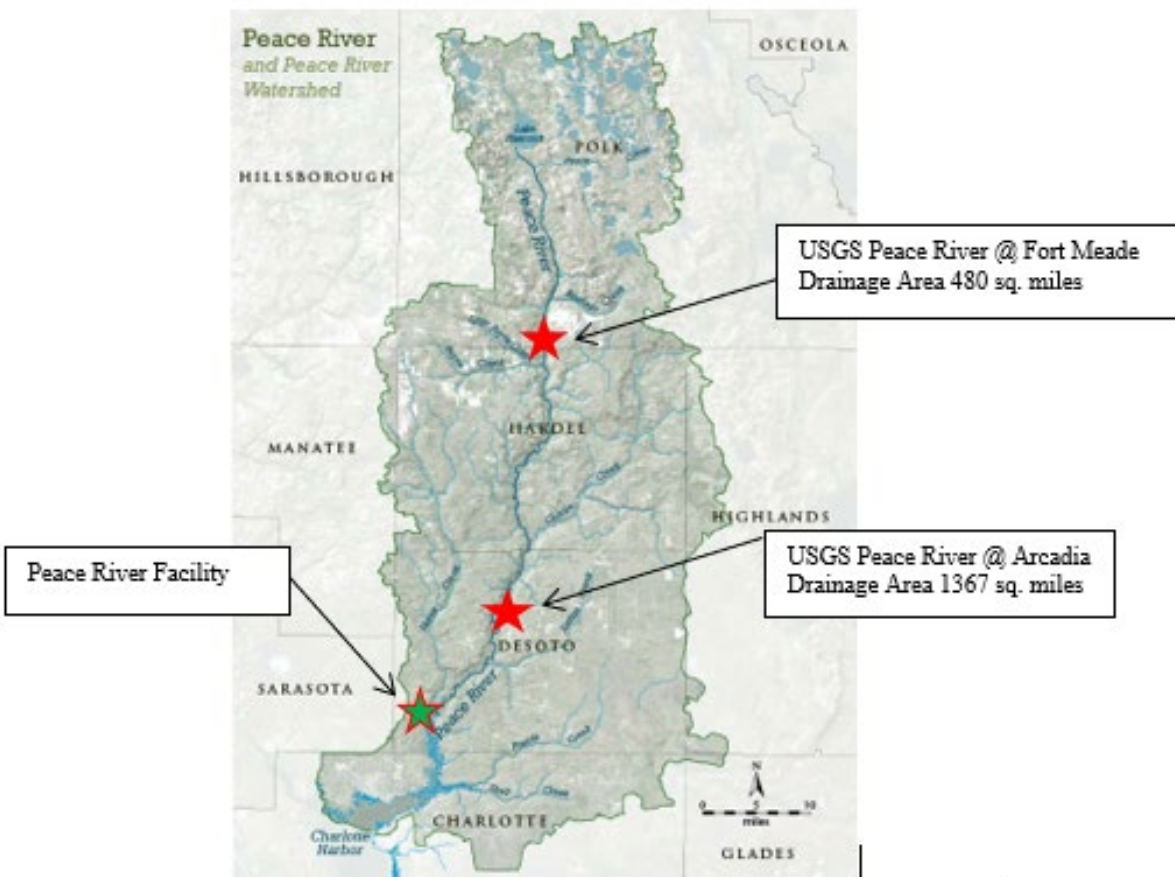


Figure 3 (Peace River Flow @ Fort Meade)

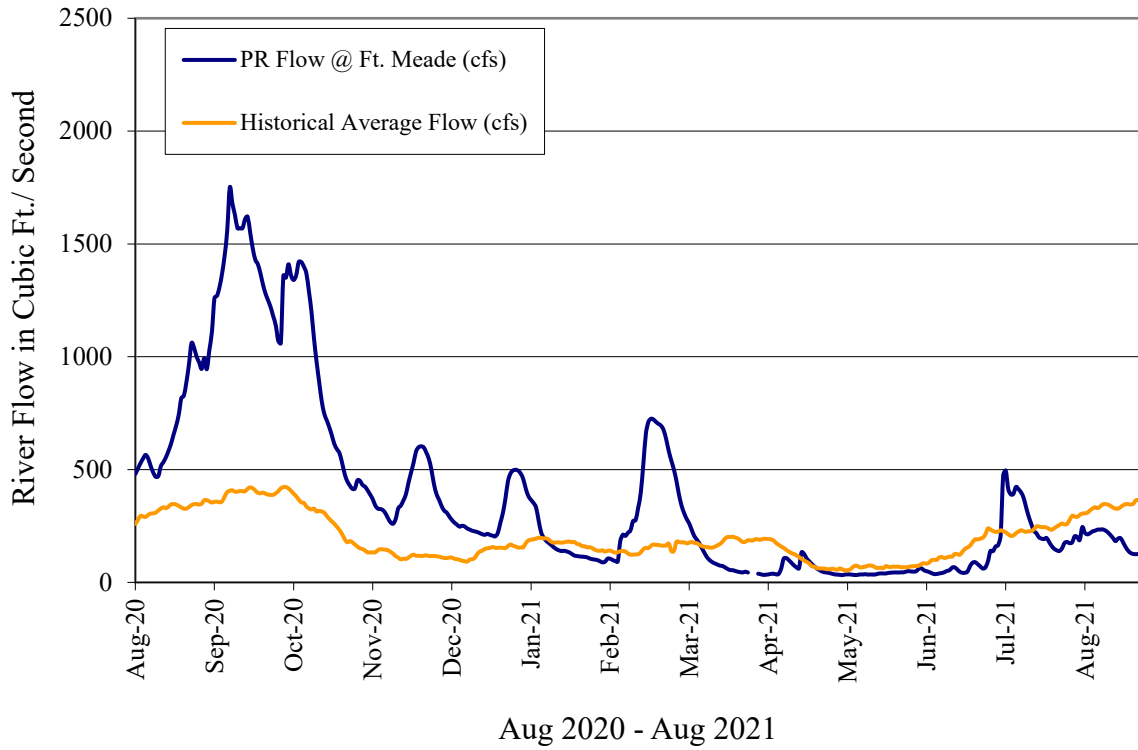
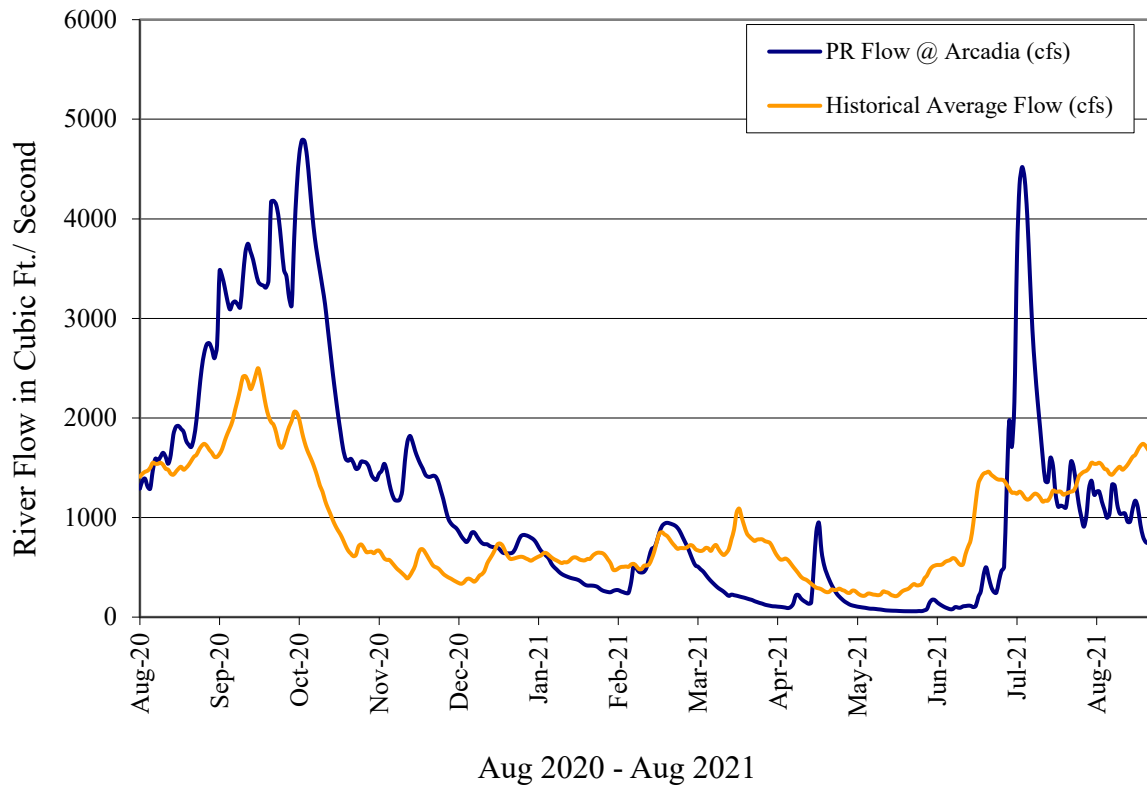


Figure 4 (Peace River Flow @ Arcadia)



### River Withdrawals, Finished Water Production & Demand (Aug 2020-Aug 2021)

Fig 5 shows river withdrawals by the PRF. Expected low river withdrawals occurred from the Peace River during May and June due to low rainfall and resulting low river flows. River flow improved in July as expected. Withdrawals for August 2021 continued with an average of 50.8 MGD, higher than August 2020 at a rate of 45.9 MGD.

Figure 5 (PR Facility Withdrawals from Peace River)

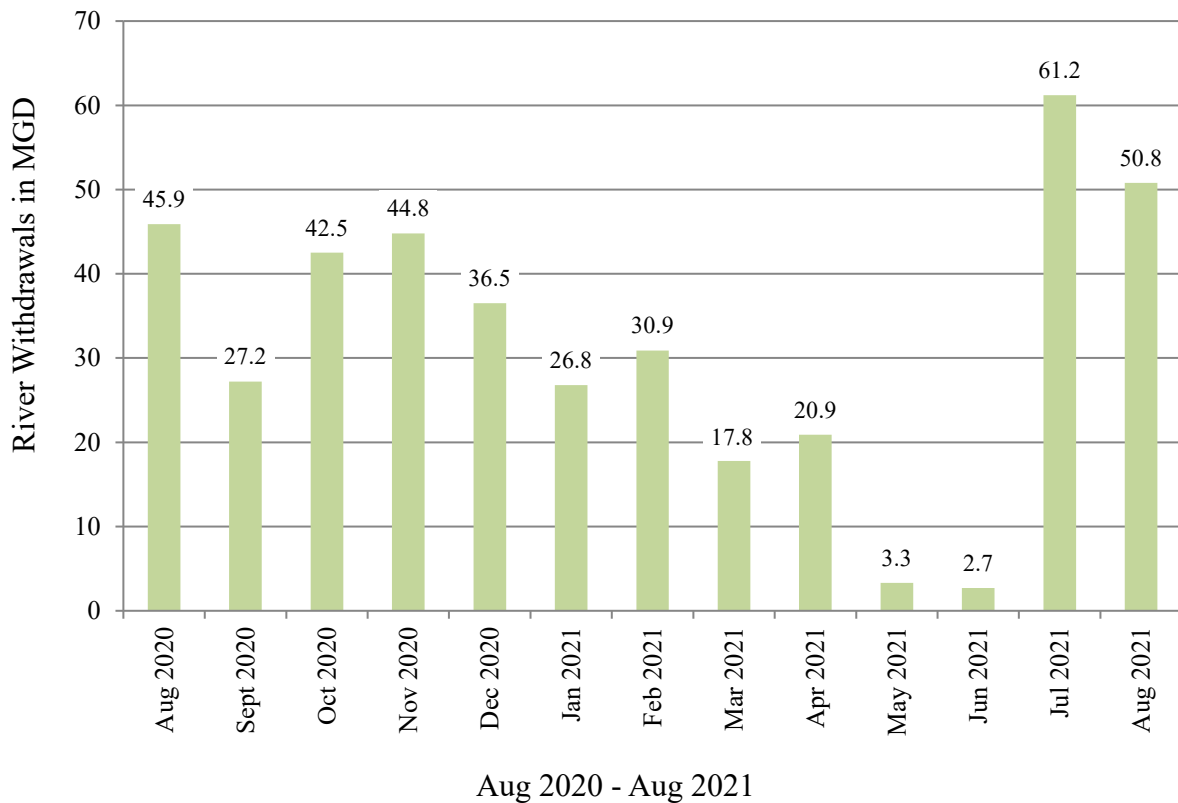
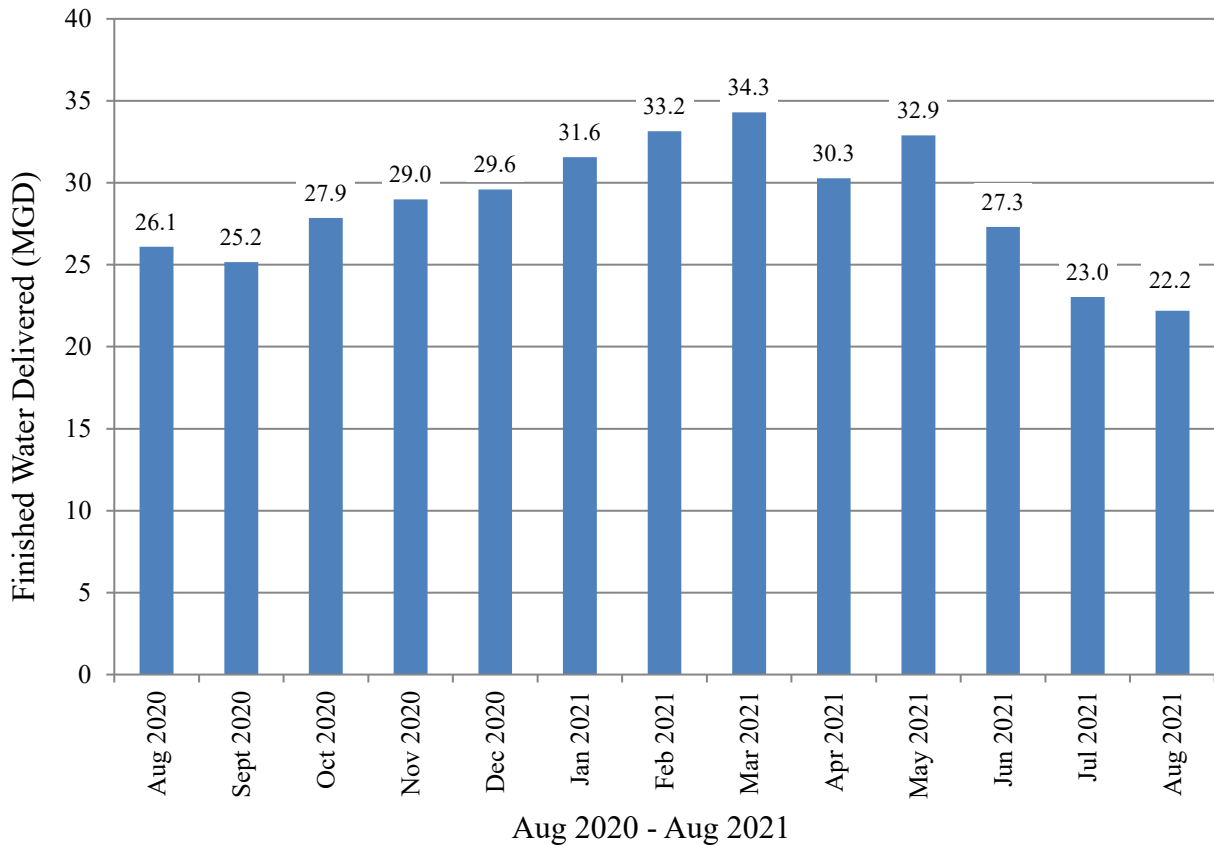


Figure 6 shows monthly finished water deliveries to Customers for the 12-month period ending August 2021. Finished water delivery to Customers during August 2021 averaged 22.2 MGD. This is about 4 MGD lower than deliveries in August 2020, in large part due to the Carlton Water Treatment Facilities coming back in service this spring which reduced demand on the Peace River Facility.

The routine exchange of water with the City of Punta Gorda is ongoing – with deliveries from the Region to the City south through the Phase 1 Pipeline on US 17 and return of flow from the City to the region north through the Phase 1A Pipeline. The exchange of water through regional pipelines maintains these facilities in a “ready-to-serve” condition at all times.

Figure 6 (Peace River Facility Deliveries to Customers)



### Stored Supplies at the PRF

The Authority maintains two large capacity off-stream storage systems at the PRF. The primary storage is raw river water stored in Reservoir No. 1 and No. 2. When flow in the River is high enough, a small percentage of that flow is harvested at the Authority’s river intake pumping facility on the Peace River and stored in Reservoirs 1 and 2. This storage is designed to be completely refilled each wet season. Total raw-water storage capacity varies with seasonal rainfall and resulting river flows. During the hurricane season the permitted total raw water storage capacity is 6.5 billion gallons (BG). Outside of hurricane season, additional water can be safely stored to a level of 6.8 BG. The maximum allowed raw water storage capacity in August 2021 is 6.5 BG. **Actual raw water stored as of August 2021 totaled about 6.4 BG.**

The secondary storage at the PRF is treated water stored in the Aquifer Storage and Recovery (ASR) system. While the original design capacity of the ASR system was approximately 6.3 BG, a much greater volume can actually be stored in this system. Because this supply must be fully treated to drinking water standards before storage, it can’t be stored as rapidly as water in the raw-water reservoirs. Filling ASR storage is done incrementally each year during the wet season as excess treatment capacity and hydrologic conditions allow. The ASR system is recharged with fully treated drinking water produced by the water treatment facility. Water recovered from ASR during the dry season is discharged to the surface reservoir system and undergoes full treatment again with the rest of the raw-water stream before delivery to Authority Customers. The ASR

system is currently in storage – which means water is neither being injected nor recovered from storage in ASR. **Treated water stored in ASR as of August 2021 totaled 8.9 BG.**

Stored raw water supplies (combined storage in Reservoir No. 1 and No. 2) and stored water in the ASR system for the past year are shown in Figure 7. **The total water in storage as of August 2021 was about 15.3 BG.** This is about 0.7 BG higher than total storage in August 2020.

Figure 7 (Stored Water Supplies)

