

***PEACE RIVER MANASOTA REGIONAL WATER SUPPLY AUTHORITY
BOARD OF DIRECTORS MEETING
June 1, 2022***

**ROUTINE STATUS REPORTS
ITEM 1**

Hydrologic Conditions Report

MEMORANDUM

Project: Hydrologic Conditions Report
Date: June 1, 2022
TO: Mike Coates, Executive Director
Developed By: Daniel Roberts, Environmental Specialist II

This memorandum summarizes rainfall, surface water conditions, and the Authority's current water storage and supply conditions for the month of April, and the preceding 13-month period.

Rainfall Conditions & Projections

Table 1 summarizes rainfall conditions for the 13-month period from April 1, 2021 through April 30, 2022. Rainfall in the Peace River Basin for the past 12-months totaled 45.16 inches, 7.14 inches below the long-term historical average of 52.30 inches. Rainfall for the month of April 2022 totaled 3.53 inches, a value 1.03 inches above the historical monthly average of 2.50 inches for April.

Figure 1 provides region-wide rainfall conditions as reported by SWFWMD for the 12-month period ending April 2022. Data shown for the Authority's 4-county service area indicate very dry conditions in most of Sarasota, DeSoto and Charlotte Counties with near normal conditions in Manatee County. 12-month rainfall conditions in the Peace River Basin from Polk through DeSoto Counties were very dry & drier than normal.

NOAA projections for the next three months (May-July) are for above-normal temperatures and above-normal rainfall for Southwest Florida. The NOAA extended forecast suggests La Nina conditions are favored to continue into the summer (59% chance during June-August 2022) and a 50-55% chance of La Nina through the fall.

Table 1 -Peace River Basin Rainfall (Inches)

Month	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	12 Mo Total
Historical Avg Rainfall ¹	2.50	4.00	8.40	8.10	7.70	7.30	3.10	1.70	1.90	2.20	2.50	2.90	2.50	52.30
Actual Rainfall ²	3.66	0.63	7.00	9.40	6.31	7.78	1.57	3.40	0.78	1.20	0.66	2.91	3.53	45.16
Diff. Historical vs Actual	1.16	-3.37	-1.40	1.30	-1.39	0.48	-1.53	1.70	-1.12	-1.00	-1.84	0.01	1.03	-7.14

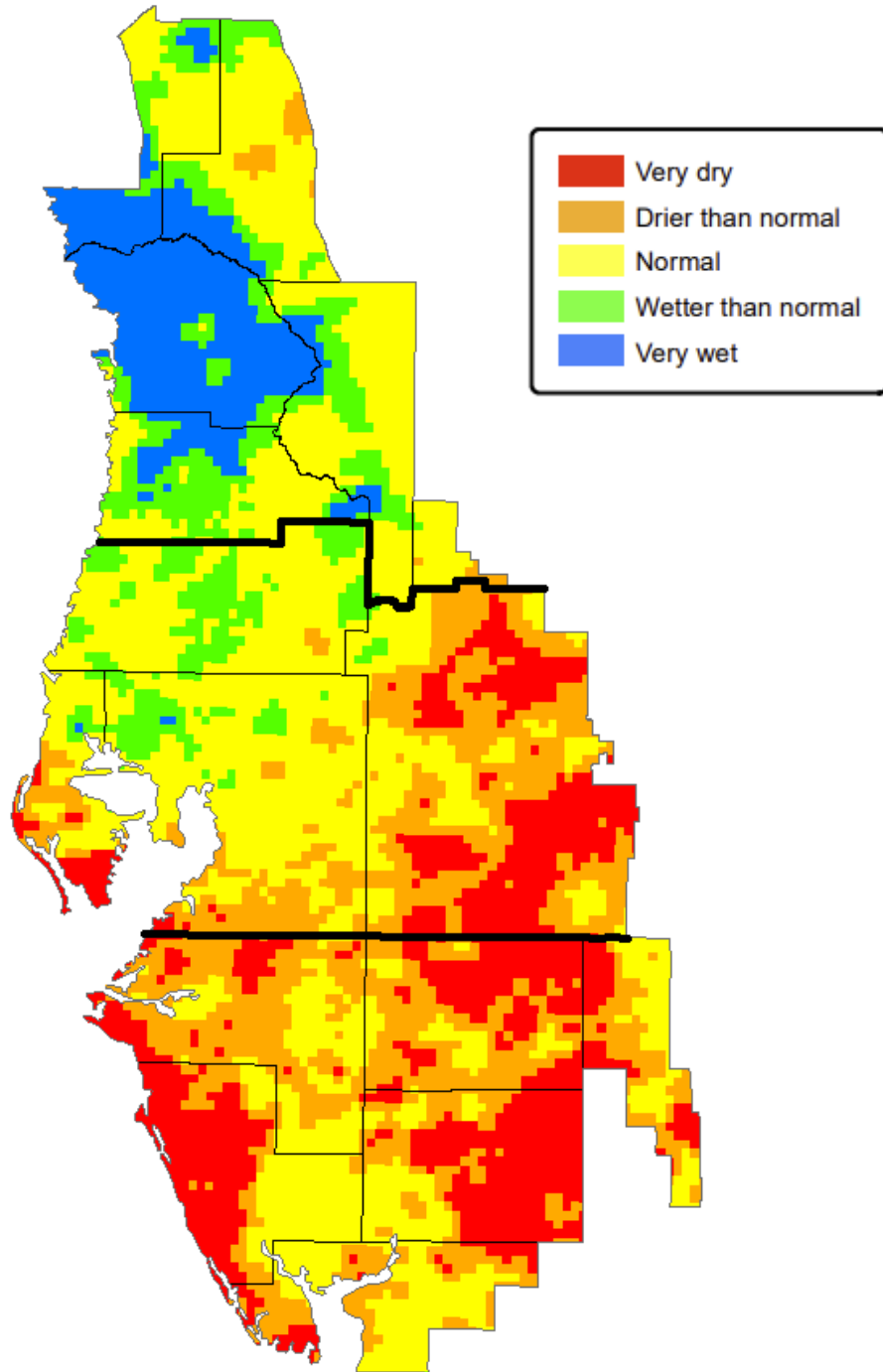
¹ Historical rainfall data are the long-term average of the Winter Haven, Bowling Green, and Joshua at Nocatee Rainfall Stations.

² Actual rainfall data are average values for the Winter Haven, Bowling Green, and Joshua at Nocatee Rainfall Stations.

Figure 1 - SWFWMD Rainfall Conditions Map

Rainfall Distribution

May 2021 through April 2022



River Flow Conditions

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

Flow at Fort Meade gage (**Figure 3**) dipped below the historical average around July 2021 and had not yet recovered to historical monthly averages as of May 2022. The flow at Arcadia gage (**Figure 4**), dropped below the seasonal historical average around December 2021 and had also not yet recovered to historical monthly averages as of early May 2022. The Arcadia gage is located about 15 miles upstream of the Authority’s intake and is one of the gages used to calculate the quantity of water that can be withdrawn on a daily basis by the Authority.

Figure 2 (Peace River Basin Showing Selected Gage Locations)

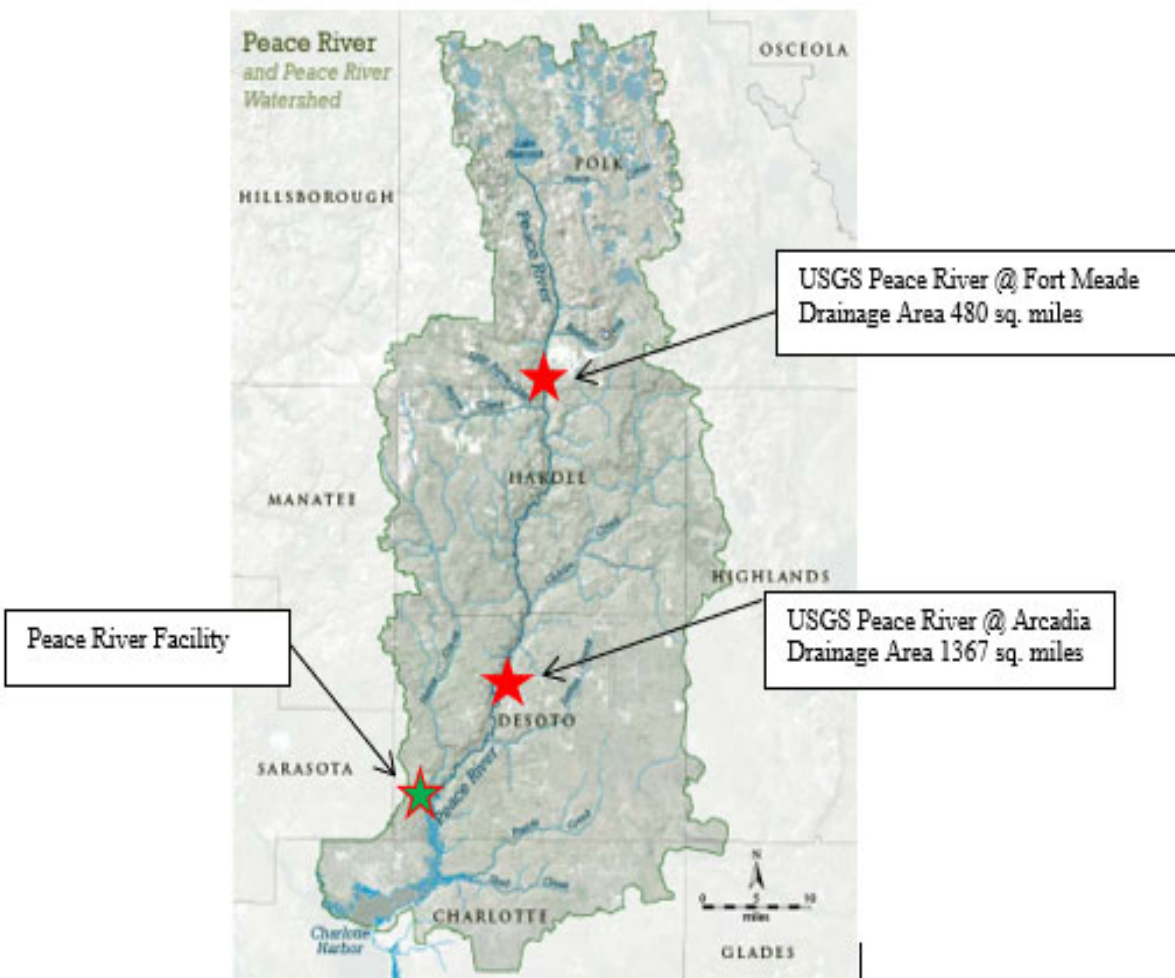


Figure 3 - Peace River Flow @ Fort Meade (cfs)

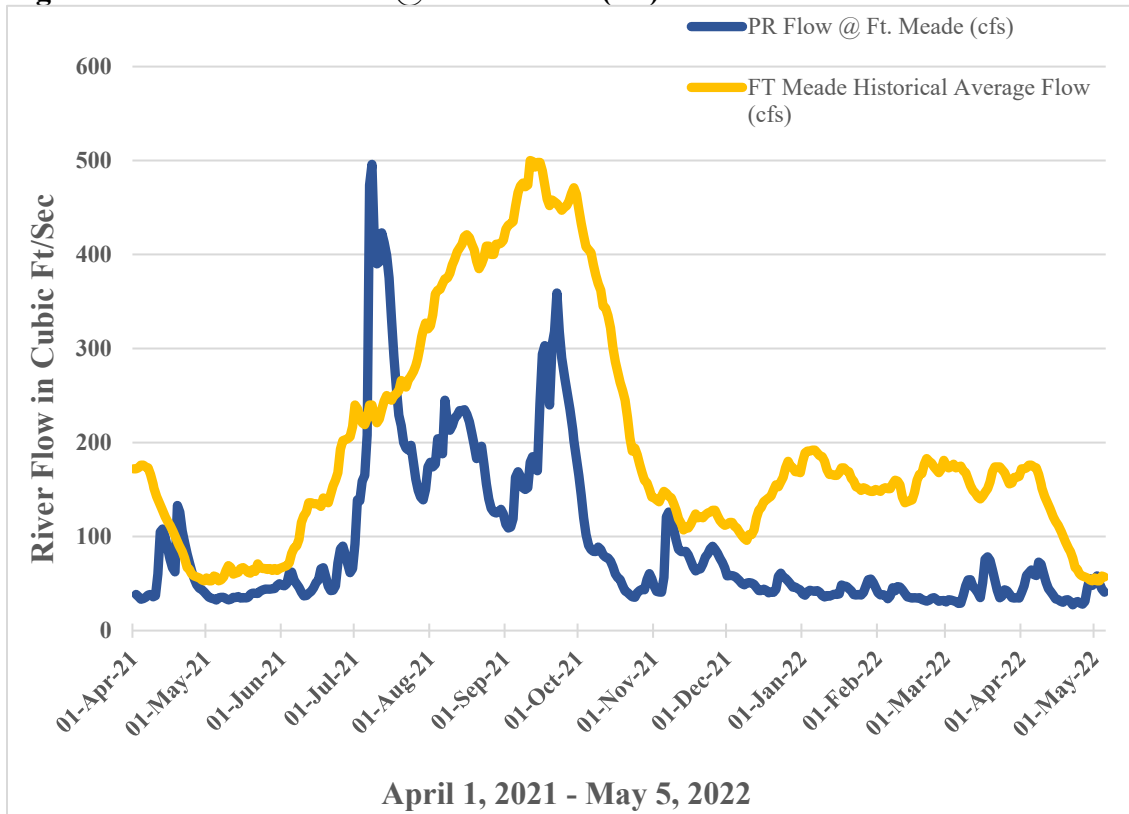
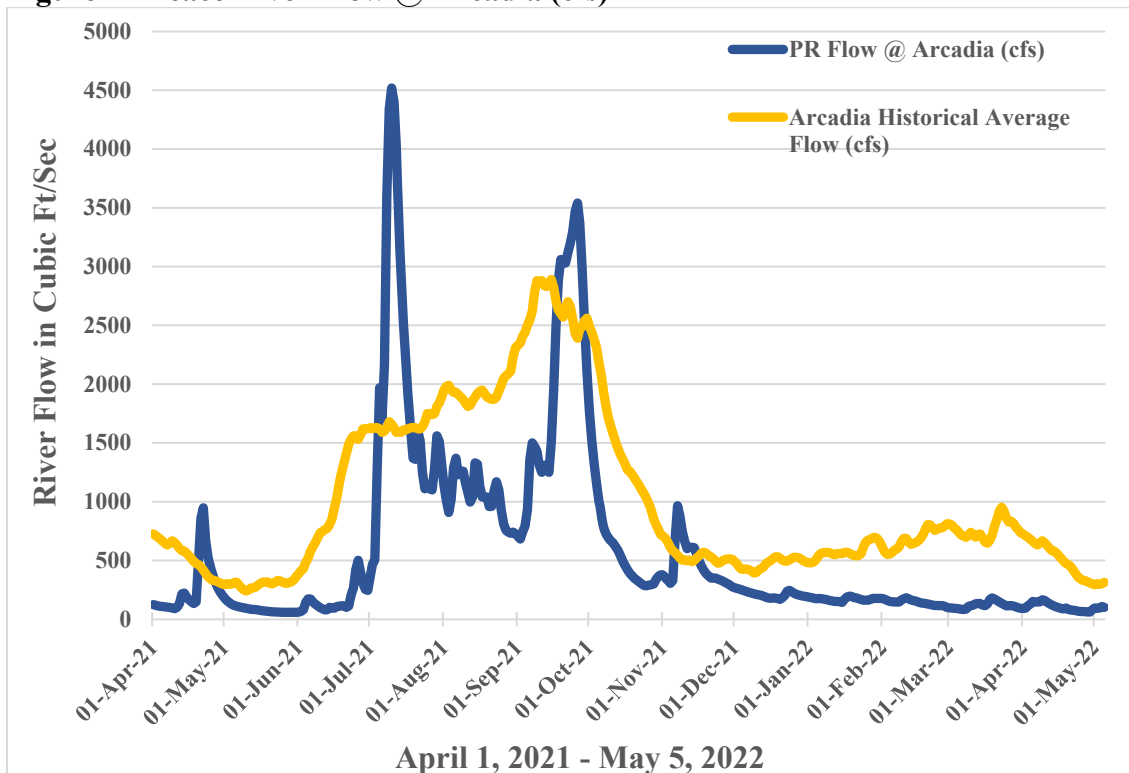


Figure 4 - Peace River Flow @ Arcadia (cfs)



River Withdrawals, Finished Water Production & Demand (Apr 2021 - Apr 2022)

Figure 5 provides average daily river withdrawals for each of the last 13 months at the Peace River Facility in million gallons per day (MGD). River withdrawals decreased from April through June 2021 as a result of lower rainfall and corresponding lower river flow. River flow and withdrawals increased in July 2021 with the onset of the wet season/summer. Flows and withdrawals decreased through the fall and winter months. Withdrawals ceased in April 2022. Average withdrawals for April 2022 (2.5 MGD) were 18.4 MGD lower than those that occurred in April 2021 (20.9 MGD).

Figure 5 - Peace River Facility Withdrawals from Peace River (MGD)

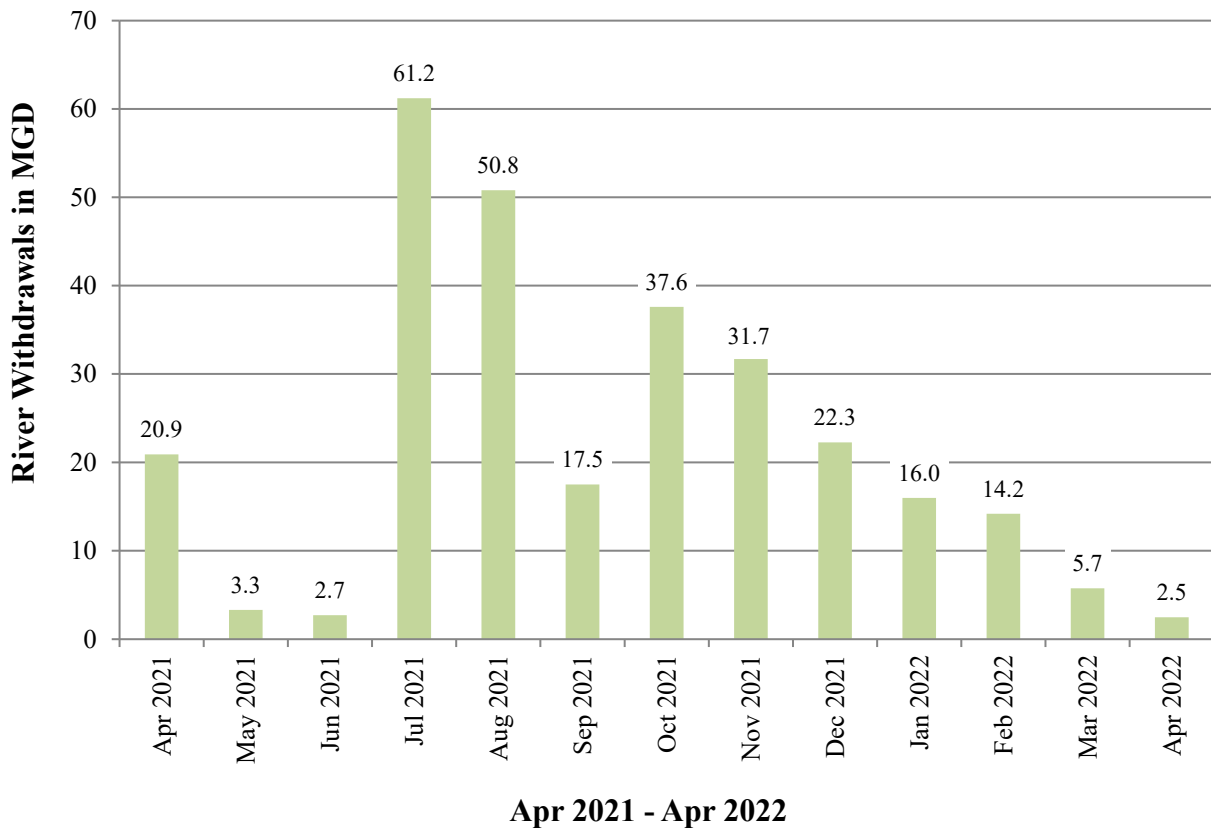
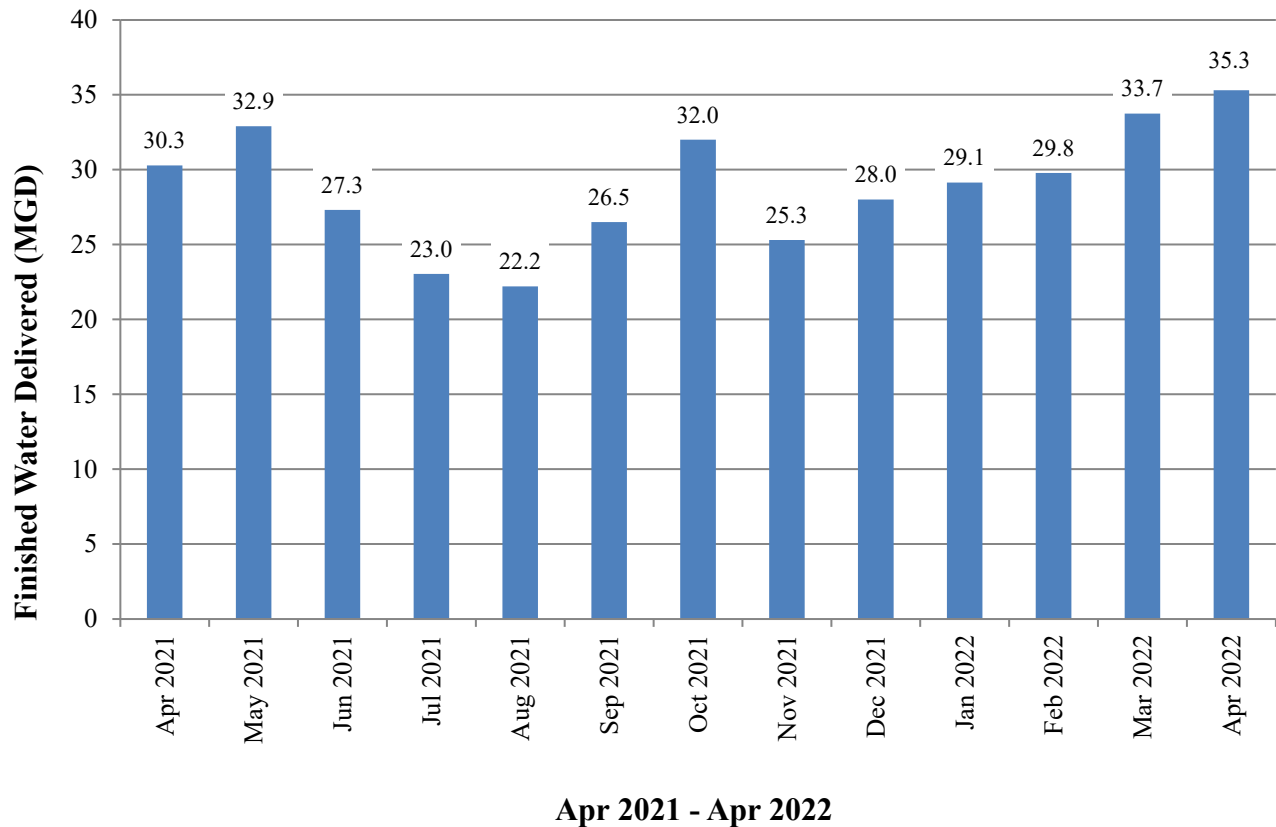


Figure 6 shows average daily finished water deliveries to Customers for each of the last 13-months in MGD. Finished water delivery to Customers during April 2022 averaged 35.3 MGD, approximately 5.0 MGD more than in April 2021. The increase in demand on the Peace River Facility this April can generally be attributed to the exceptionally dry conditions, increased deliveries to Sarasota County and City of North Port because their water production facilities are undergoing repair and rehabilitation work, and continued increases in regional water demands.

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 (MGD)



Stored Supplies at the Peace River Facility (PRF)

The Authority maintains two large capacity off-stream storage systems at the PRF. The primary raw water storage facilities are Reservoir Nos. 1 and 2. When the flow in the River is high enough, a small percentage of that flow is harvested at the Authority’s intake pumping facility on the Peace River consistent with the permit-authorized diversion schedule and is stored in Reservoir Nos. 1 and 2. Storage volumes in the reservoirs generally decline in the dry season due to lower river flows and increase during the wet season as rainfall, flows and river diversions increase. During the hurricane season the permitted total combined raw water storage capacity in Reservoirs 1 and 2 is 6.5 billion gallons (BG). Outside of hurricane season, additional water can be safely stored up to 6.8 BG. **Total raw water stored as of April 30, 2022 was 4.03 BG, approximately 1.63 BG less than April 2021 (5.66 BG).**

The secondary storage option at the PRF is treated water stored in the Aquifer Storage and Recovery (ASR) system. The ASR system has a design storage capacity of 6.3 BG. However, practical storage capacity is substantially higher as evidenced by the 8.6 BG stored in the ASR system as of April 1, 2022. Because water stored in ASR must be fully treated to drinking water standards before injection, it can’t be stored as rapidly as it can 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. 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. **Recovery from the ASR system began on April 1, 2022. Total ASR system storage as of early April 30, 2022 was 8.33 BG, approximately 0.64 BG less than April 2021 (8.97 BG).**

Stored supplies in Reservoir Nos. 1 and 2 and in the ASR system for the past year are shown in **Figure 7. The total water in storage as of April 30, 2022 was about 12.36 BG, approximately 2.27 BG lower than total storage in April 2021 (14.63 BG).**

Figure 7 (Stored Water Supplies)

