

PEACE RIVER MANASOTA REGIONAL WATER SUPPLY AUTHORITY
BOARD OF DIRECTORS MEETING
April 3, 2024

ROUTINE STATUS REPORTS
ITEM 1

Hydrologic Conditions Report

MEMORANDUM

Project: Hydrologic Conditions Report
Date: April 3, 2024
TO: Mike Coates, Executive Director
Developed By: Shalina Odegard, Water Resources & Planning Manager

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

Rainfall Conditions & Projections

Table 1 summarizes rainfall conditions for the 13-month period from February 1, 2023, through February 29, 2024. Rainfall in the Peace River Basin for the past 12-months totaled 44.81 inches, which is 7.49 inches below the long-term historical average of 52.30 inches. Rainfall for the month of February 2024 totaled 1.86 inches, a value 0.64 inches below the historical monthly average of 2.50 inches for February.

Table 1 (Peace River Basin Rainfall - Inches)

| Month | Feb-23 | Mar-23 | Apr-23 | May-23 | Jun-23 | Jul-23 | Aug-23 | Sep-23 | Oct-23 | Nov-23 | Dec-23 | Jan-24 | Feb-24 | 12 Mo Total |
|--------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------------|
| Historical Avg Rainfall ¹ | 2.50 | 2.90 | 2.50 | 4.00 | 8.40 | 8.10 | 7.70 | 7.30 | 3.10 | 1.70 | 1.90 | 2.20 | 2.50 | 52.30 |
| Actual Rainfall ² | 0.90 | 0.35 | 2.71 | 5.19 | 6.45 | 5.02 | 7.98 | 6.55 | 1.62 | 1.53 | 2.08 | 3.47 | 1.86 | 44.81 |
| Diff. Historical vs Actual | -1.60 | -2.55 | 0.21 | 1.19 | -1.95 | -3.08 | 0.28 | -0.75 | -1.48 | -0.17 | 0.18 | 1.27 | -0.64 | -7.49 |

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 provides region-wide rainfall conditions as reported by SWFWMD for the 12-month period ending February 2024. Data shown for the Authority’s 4-county service area indicate very dry to normal conditions for most of Sarasota and Manatee Counties and very dry to very wet conditions for most of Charlotte and DeSoto Counties. The overall inland Peace River Basin indicates very dry to wetter than normal conditions from Polk to DeSoto Counties over the last 12 months.

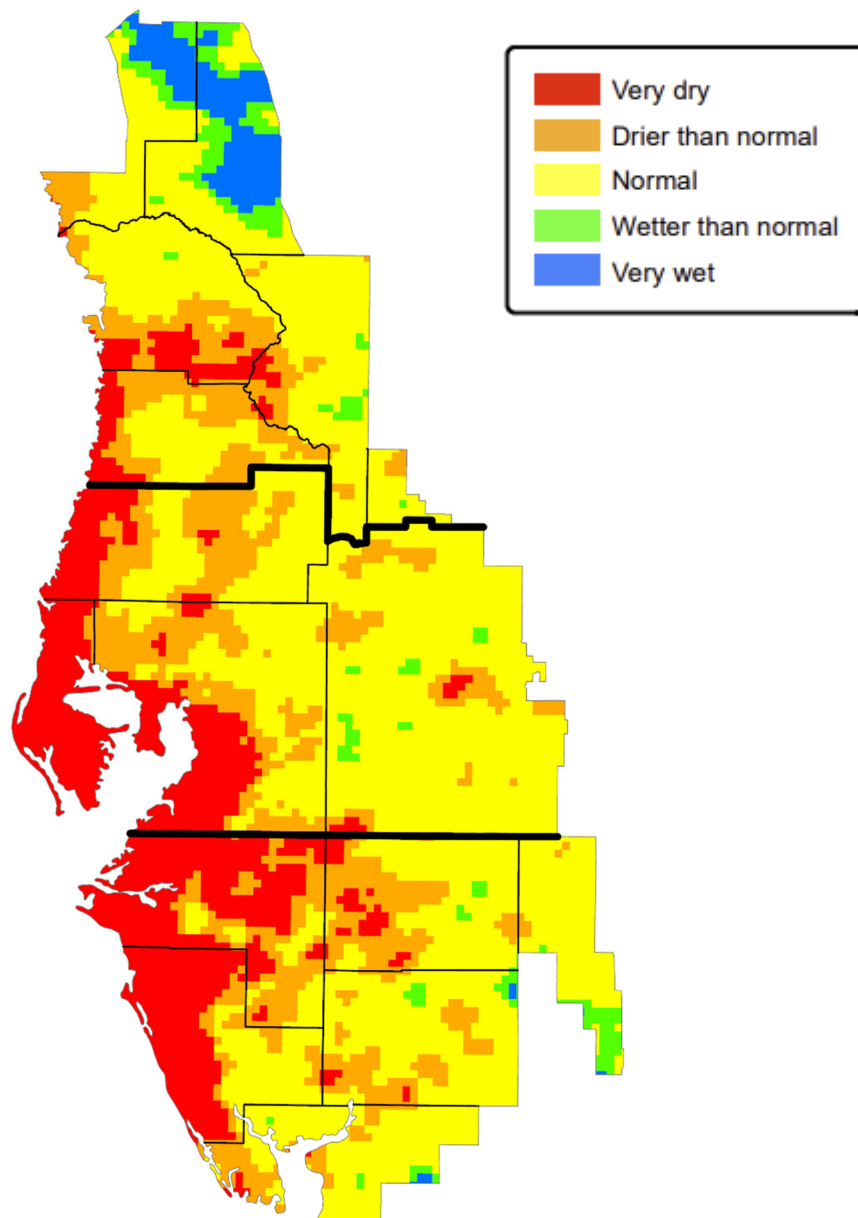
NOAA projections for the next three months (Mar 2024 – May 2024) are for leaning above normal temperatures and equal chances of rainfall for Southwest Florida. The NOAA/ENSO (El Nino/

La Nina) extended forecast indicates a transition from El Nino to ENSO-neutral is likely by April - June 2024 (79% chance), with increasing odds of La Nina developing in June - August 2024 (55% chance).

Figure 1 (SWFWMD Rainfall Conditions Map)

Rainfall Distribution

March 2023 through February 2024



River Flow Conditions

Figure 2 provides the locations of the three U.S. Geological Survey gauges that are used to regulate Authority withdrawals from the Peace River: 1) Peace River at Arcadia, 2) Horse Creek at Arcadia, and 3) Joshua Creek at Nocatee. Flow conditions at these gauges are discussed below:

The combined flow at the three gauges listed above increased above the historical average in early January 2024 and then decreased below the historical average in early February 2024. Mid-February 2024, the combined flow increased above the historical average. Late February 2024, the combined flow decreased below the historical average and remained below until the end of February 2024. **Figure 3** provides a hydrograph of combined flows plotted against the historical average and the 130 cfs lower limit for withdrawals.

Figure 2 (Peace River Basin Showing Selected Gauge Locations with ★)

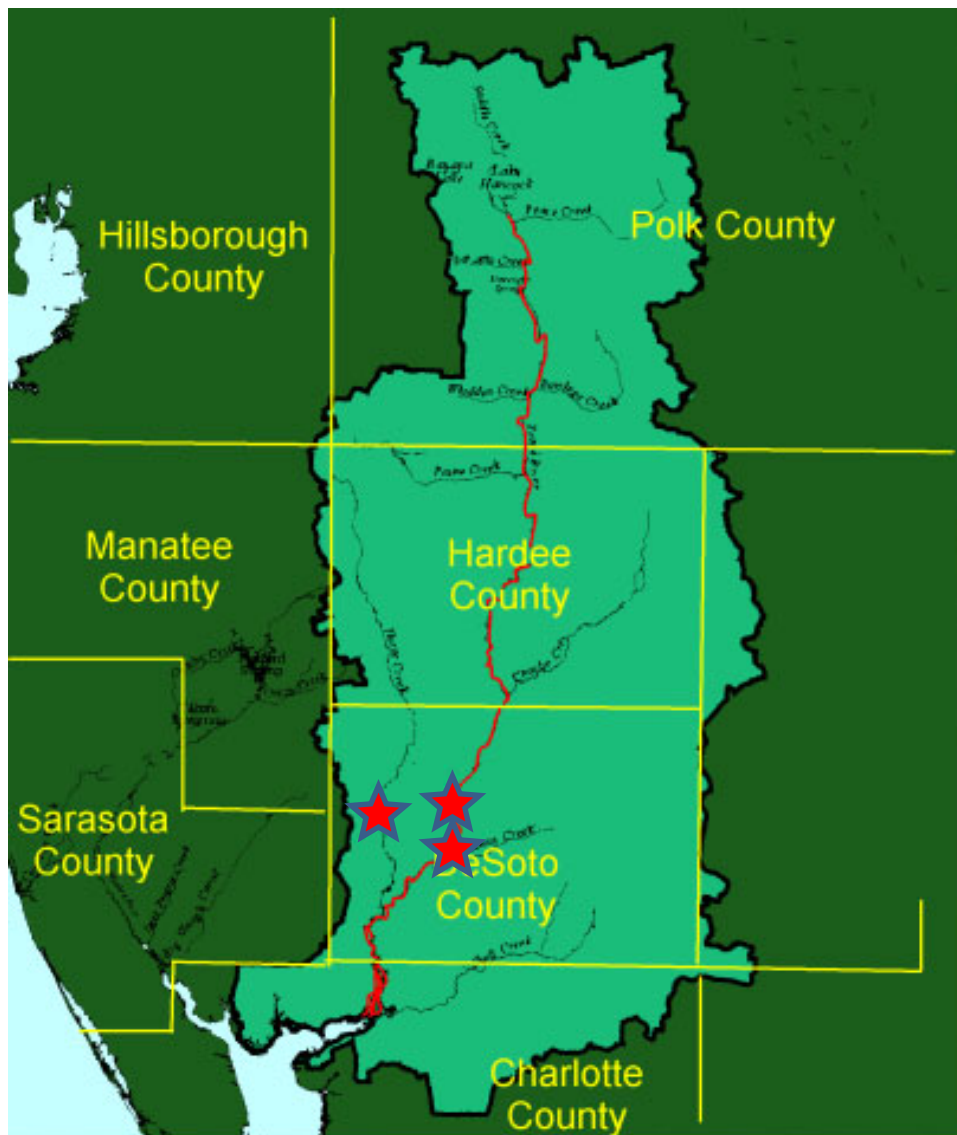
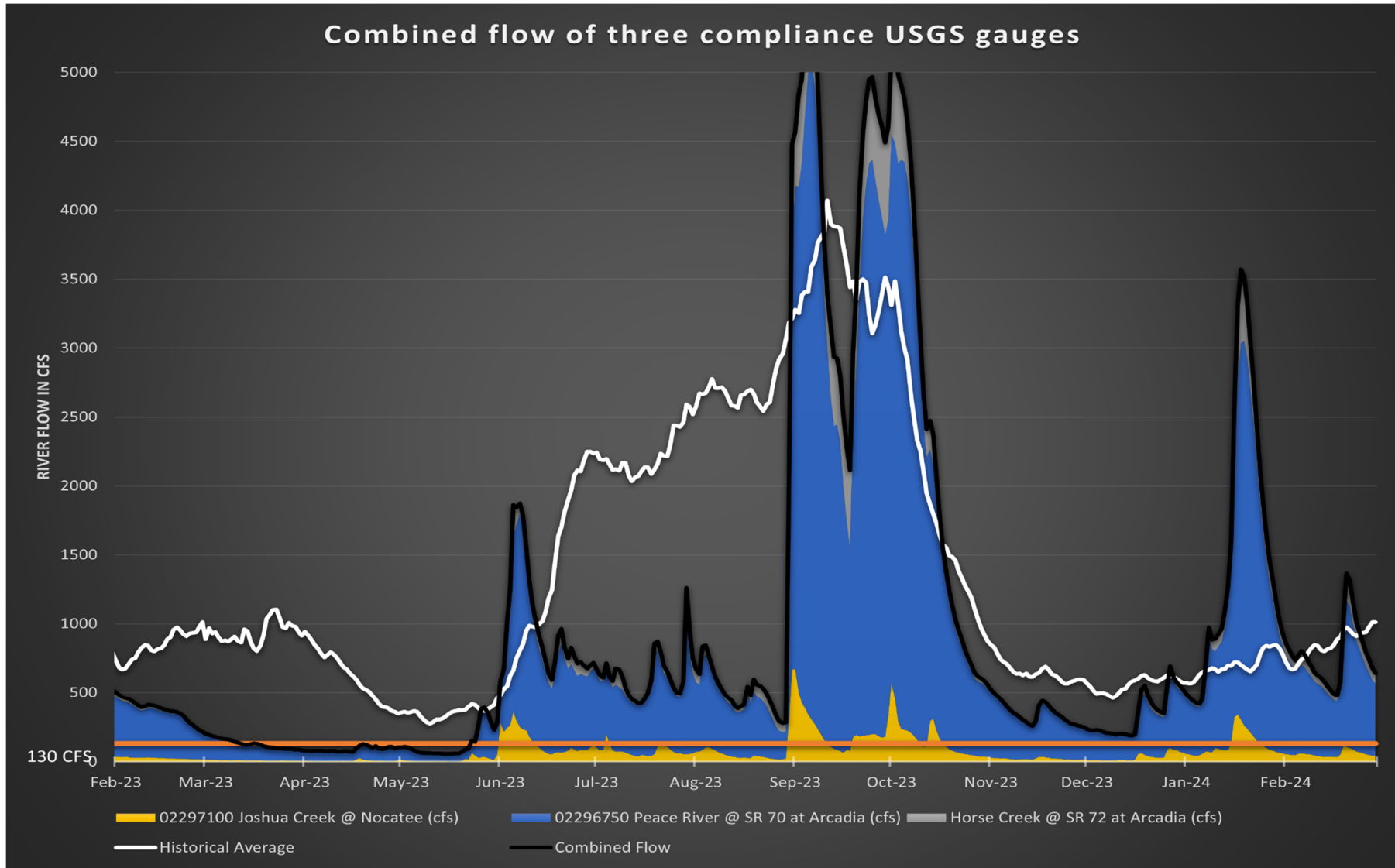


Figure 3 – HYDROGRAPH OF COMBINED FLOWS OF THREE STATIONS

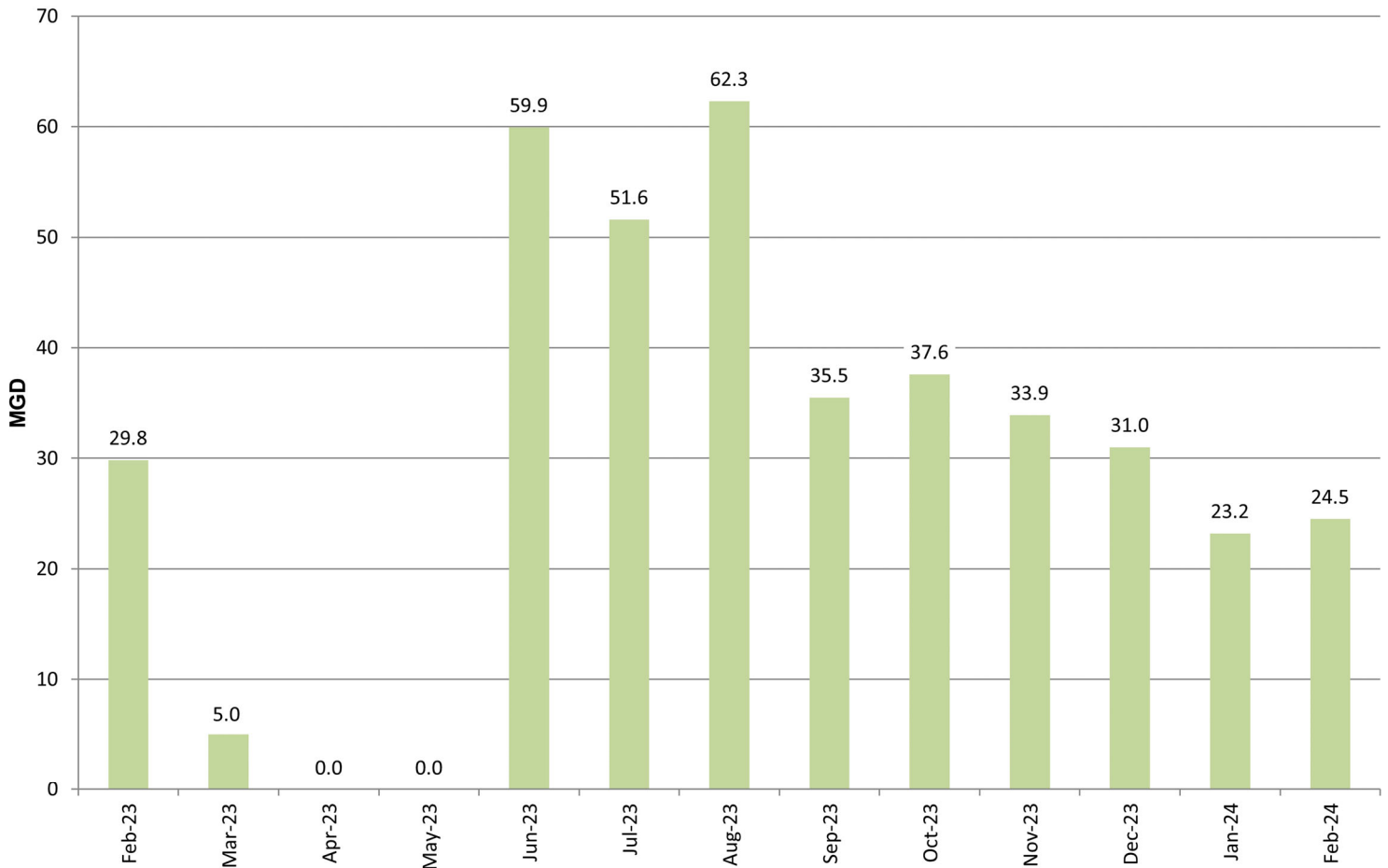


River Withdrawals, Finished Water Production, & Demand (February 2023 – February 2024)

Figure 4 provides average daily river withdrawals for each of the last 13 months at the Peace River Facility in million gallons per day (MGD). Average withdrawals for February 2024 (24.5 MGD) were 5.3 MGD lower than those that occurred in February 2023 (29.8 MGD).

Figure 4

Monthly Avg PRF Withdrawals from the Peace River (MGD)



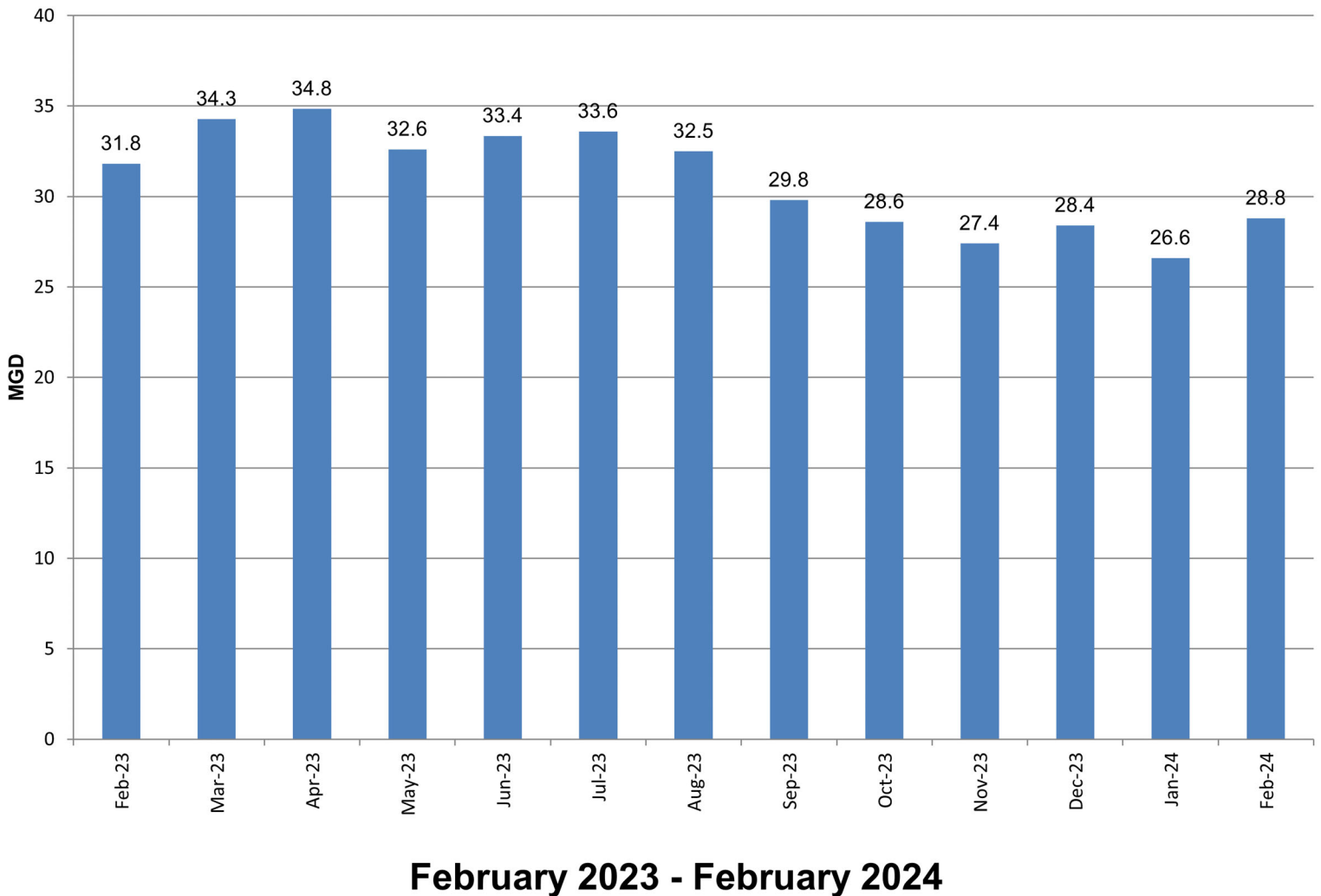
February 2023 - February 2024

Figure 5 shows average daily finished water distributed to the regional network for each of the last 13-months in MGD. Finished water distribution averaged 28.8 MGD in February 2024, approximately 3.0 MGD less than in February 2023.

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 5

Regional Distribution from the PRF



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 the 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 consistent with the permit-authorized diversion schedule and is stored in Reservoirs 1 and 2. Storage volumes in the reservoirs generally decline in the dry season due to lower 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 in the reservoir system as of February 29, 2024, was 6.718 BG, which was 0.007 BG more than February 2023 (6.711 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 8.722 BG stored in the ASR system as of February 29, 2024. Because this supply must be fully treated to drinking water standards before storage, it cannot 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 (due to lower public water supply demand) 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.

In 2023, recovery from the ASR system began April 3 and ended May 30 for a total of 432 MG. **Total ASR system storage as of February 29, 2024, was 8.722 BG (2.422 BG greater than design storage capacity), and 0.06 BG less than February 2023 (8.782 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 6**. **The total water in storage as of February 29, 2024, was approximately 15.44 BG, approximately 0.053 BG less than total storage in February 2023 (15.493 BG).**

Figure 6

Stored Water Supplies

