

DATE: February 3, 2020
TO: Matt Jordan, General Manager
FROM: Kenneth R. Herd, Chief Science & Technical Officer *KRH*
SUBJECT: Regional Water Supplies and Member Demands - *Status Report*

SUMMARY

This item provides the status of our water demand and water supply conditions including hydrologic conditions, surface water and reservoir management, and source rotation. Water Shortage Mitigation Plan status and an outlook for the upcoming winter season are also included.

RECOMMENDATION

Receive Status Report

COST/FUNDING SOURCE

N/A

DISCUSSION

Since the beginning of the fiscal year, Tampa Bay Water has delivered an average of 176.4 million gallons per day (mgd) to meet the member governments' (members') demands. **This is 8.3 mgd (5.0%) more water delivered than for the same period last year.** Hydrologic conditions are expected to be normal for water year 2020, although large rainfall fluctuations were observed in the in the current water year. The region received 6.48 inches rainfall in October 2019, which was significantly above average rainfall of October (2.71 inches). Regional rainfall in December 2019 was 1.0 inches above its long-term average, while January 2020 rainfall was 2.05 inches below its long-term average. Daily river flows were above normal in December 2019 and slightly dropped in January 2020. The Regional Reservoir was full in the first three months in the fiscal year and it is at 14.7 Billion Gallon (BG) of storage by the end of January 2020. A summary of conditions is highlighted below:

- Total rainfall across Tampa Bay Water's service area was 4.0 inches and 0.83 inches, respectively, in December 2019 and January 2020.
- Daily flows in both the Alafia and Hillsborough Rivers were above normal in December 2019 and decreasing percentiles of flow conditions were observed for both Rivers in January 2020.
- The Tampa Bay Water Desalination Facility produced 9.8 mgd and 12.3 mgd, respectively, in December 2019 and January 2020.

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- The 12-month running average Consolidated Wellfield pumpage is 83.68 million gallons per day (mgd) through January 2020.
- Delivery of water to the members year to date (October 1, 2019 through January 31, 2020) is 8.3 mgd more than during the same period last year.
- The City of Tampa Hillsborough River Reservoir is full at an elevation of 23.0 ft. at the end of January 2020.
- Delivery to the City of Tampa started on January 6, 2020 and averaged 9.30 mgd for January 2020.

Climate Outlook

El Niño/Southern Oscillation (ENSO)-neutral conditions are present. Many of the model predictions issued during mid-January 2020 show that ENSO-neutral conditions for the spring and summer 2020. Although ENSO neutral conditions are expected for the rest of the water year, month-to-month hydrologic fluctuations may occur as have been observed in the past few months.

The 90-day climate outlook (February -March 2020) issued on January 15, 2020 shows an equally likely precipitation but higher than normal temperature. This is projected for much of the Southern United States including Florida.

Hydrologic Conditions

Water Year 2020 (October 2019 through September 2020) started with above average rainfall in October (3.7 inches greater than normal) and November was slightly below average (0.5 inches less than normal). The region received 4.0 inches rainfall in December 2019 (1.0 inches greater than normal) and January 2020 was 2.0 inches below average (Figure 1).

Overall, the Tampa Bay area continues to have relatively normal flow condition following a robust summer rainfall and Tampa Bay Water does not expect drier than normal conditions in the next few months. Monthly flows in the Alafia and Hillsborough Rivers were 119.7 mgd and 139.3 mgd (67th and 85th percentiles), respectively, in December 2019. Flows in January 2020 were average at 119.4 mgd (55th percentile) for the Alafia River and above average at 140 mgd (74th percentile) for the Hillsborough River. Note that an average flow condition is defined when the flow falls into the range of 34th and 67th percentiles.

Permitted available flows in the Alafia River averaged 16.89 mgd for December 2019 and 16.24 mgd in January 2020. In December, daily withdrawal of water from the Tampa Bypass Canal averaged 47.75 mgd, whereas withdrawal in January 2020 averaged 38.56 mgd.

Water Demand and Supply Summary

Tampa Bay Water's budgeted delivery for Water Year 2020 is 180.8 mgd. This includes an average annual delivery to the City of Tampa of 6.0 mgd. Total delivery to the members in December 2019 and January 2020 was 167.90 mgd and 181.44 mgd, respectively, which is higher than last year for both December 2019 and January 2020. Tampa Bay Water's average total delivery for October 2019

through January 2020 is 176.4 mgd which is 8.35 mgd or 5.0% above delivery for the same period last year (Figure 2). This includes delivery of 9.34 mgd to the City of Tampa in January 2020.

Aggregate groundwater production from the 13 Tampa Bay Water wellfields totaled 99.15 mgd and 109.4 mgd in December 2019 and January 2020, respectively. Production from the Consolidated Wellfields totaled 73.99 mgd and 82.31 mgd in December 2019 and January 2020, respectively. The 12-month running average Consolidated Wellfields production stands at 83.68 mgd through January 31, 2020 (Figure 3).

Treated surface water totaled 59.62 mgd and 61.14 mgd in December 2019 and January 2020, respectively. The Desalination Facility started production in December and produced 9.84 mgd and 12.26 mgd for December 2019 and January 2020, respectively.

Currently, 14.7 billion gallons of water is stored in the regional reservoir. The amount of stored water used to supplement river flows sent to the Surface Water Treatment Plant averaged at 12.3 mgd in January. The proportion of reservoir use is expected to increase as the winter season progresses and into the spring dry season.

Water Shortage Mitigation Plan

The Board approved the updated Water Shortage Mitigation Plan (WSMP) in April 2017. The Water Shortage Mitigation Plan uses rainfall, stream flows, and reservoir storage as indicators of the health of the region's water supplies.

The cumulative rainfall in the region is at a 3.10-inch surplus at the end of January 2020 (compared to a 6.63-inch surplus in December 2019). Stream flow is at a 78.08 mgd surplus in January 2020 (Compared to 95.48 mgd surplus in December 2020). The storage of Regional Reservoir was at 14.7 billion gallon, close to its full storage. Tampa Bay Water is under a normal WSMP Stage and does not expect to reach a shortage condition for the rest of the winter.

Currently, it is ENSO-neutral for the region and such condition is expected to continue through spring 2020. Climate models indicate a 68% chance of staying as such for the months of February, March and April 2020.

Staff continues to work with the members in collecting watering restrictions and conservation information, discussing and exploring various short-term and long-term demand management alternatives, implementing a consistent public awareness campaign throughout the region, and identifying additional opportunities to optimize existing water resources.

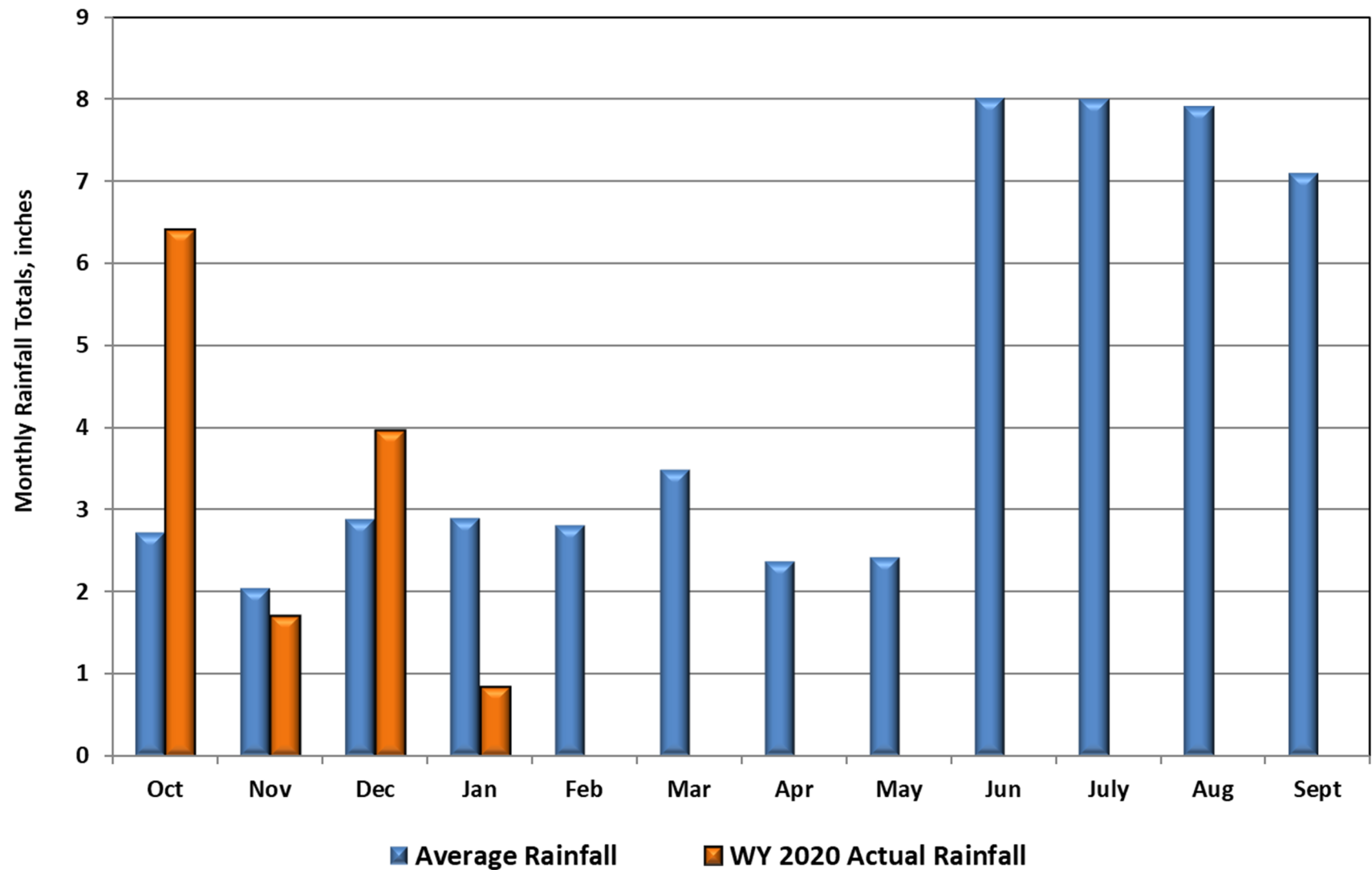
BACKGROUND

Data collection, analysis, and interpretation as well as decision-making are ongoing for a multitude of factors that influence and constrain Tampa Bay Water's operations. These include hydrologic and environmental conditions, supply and demand conditions, treatment plant parameters, water quality constituents, along with equipment/machinery and infrastructure variables. A summary of monthly

information is compiled and provided to the Board in each Board Agenda Packet and is supplemented as necessary. A summary of highlights is presented annually.

Attachments

Figure 1. Water Year 2020 Monthly Rainfall vs. Average Monthly Rainfall



**Figure 2. Tampa Bay Water Delivery Through January
Water Year 2020 Compared To Water Year 2019**

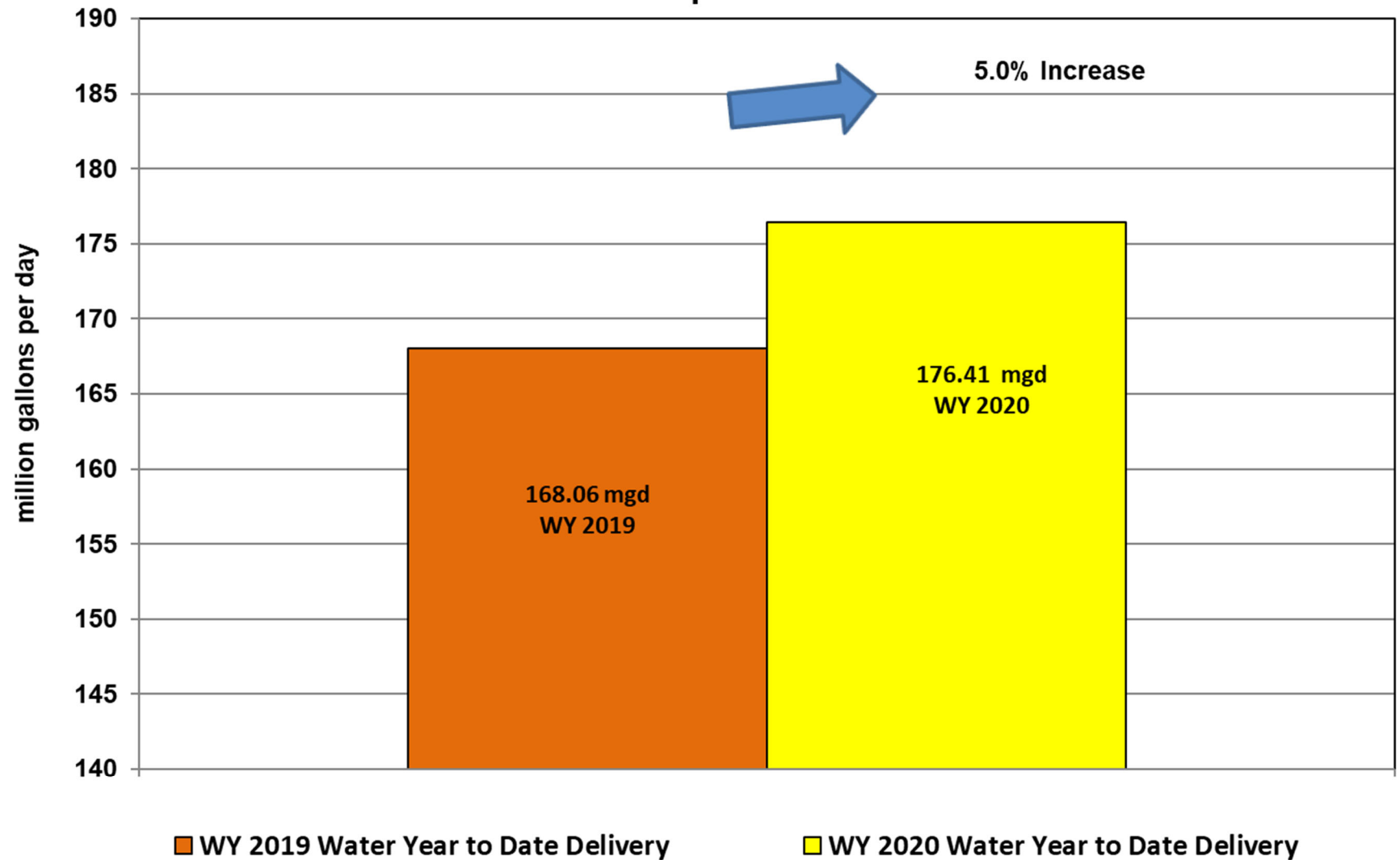


Figure 3. Consolidated Wellfield Production

