

DATE: December 2, 2019
TO: Matt Jordan, General Manager
FROM: Kenneth R. Herd, Chief Science & Technical Officer *KRH*
SUBJECT: Regional Water Supplies and Member Demands - *Receive 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 178.1 million gallons per day (mgd) to meet the member governments' (members') demands. **This is 3.7 mgd (2.1%) 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 October and November 2019. Regional rainfall in October was 3.7 inches above its long-term average, while November rainfall was 0.3 inches below its long-term average. Daily river flows were above normal in both October and November. This rainfall enabled filling the Regional Reservoir and provided enough water to sustain surface water production with minimal use of the Reservoir to supplement river flows. The Reservoir is at 15.0 Billion Gallon (BG) of storage. A summary of conditions is highlighted below:

- Total rainfall across Tampa Bay Water's service area was 6.4 inches and 1.7 inches, respectively, in October and November 2019.
- Daily flows in both the Alafia and Hillsborough Rivers were above normal in October and November 2019.
- The Tampa Bay Water Desalination Facility is in the process of starting-up for the season.
- The 12-month running average Consolidated Wellfield pumpage is 82.12 million gallons per day (mgd) through November 2019.

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- Delivery of water to the members year to date (October 1, 2019 through November 30, 2019) is 3.7 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 November 2019.

Climate Outlook

El Niño/Southern Oscillation (ENSO)-neutral conditions are present. Many of the model predictions issued during mid-October 2019 show that ENSO-neutral conditions for the winter 2019 and spring 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 (December 2019-February 2020) issued on November 15, 2019 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) (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 267 mgd and 217 mgd (73rd and 76th percentiles), respectively, in October. Flows in November were also above average at 138 mgd and 166 mgd (70th and 90th percentiles), respectively, for the Alafia and Hillsborough Rivers.

Permitted available flows in the Alafia River averaged 27.66 mgd for October and 18.44 mgd in November. In October, daily withdrawal of water from the Tampa Bypass Canal averaged 54.05 mgd, whereas withdrawal in November averaged 56.15 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 October and November was 180.25 mgd and 176.04 mgd, respectively, which is higher than last year for both October and November. Tampa Bay Water's average total delivery for October through November is 178.1 mgd which is 3.7 mgd or 2.1% above delivery for the same period last year (Figure 2).

Aggregate groundwater production from the 13 Tampa Bay Water wellfields totaled 117.5 mgd and 116.1 mgd in October and November, respectively. Production from the Consolidated Wellfields totaled 88.41 mgd and 88.26 mgd in October and November, respectively. The 12-month running average Consolidated Wellfields production stands at 82.12 mgd through November 30, 2019 (Figure 3).

Treated surface water totaled 63.6 mgd and 60.1 mgd in October and November, respectively. The Desalination Facility is scheduled to produce in December and is expected to produce 8.6 mgd averaged through the Water Year.

Currently, 15.0 billion gallons of water is stored in the regional reservoir. A small amount of stored water was used to supplement river flows sent to the Surface Water Treatment Plant in November. 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 11.46-inch surplus at the end of November 2019 (compared to a 11.33-inch surplus in October 2019). Stream flow is at a 130.90 mgd surplus in November (the same as in October). The Regional Reservoir is operationally full. 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 64% chance of staying as such for the months of January, February and March 2020.

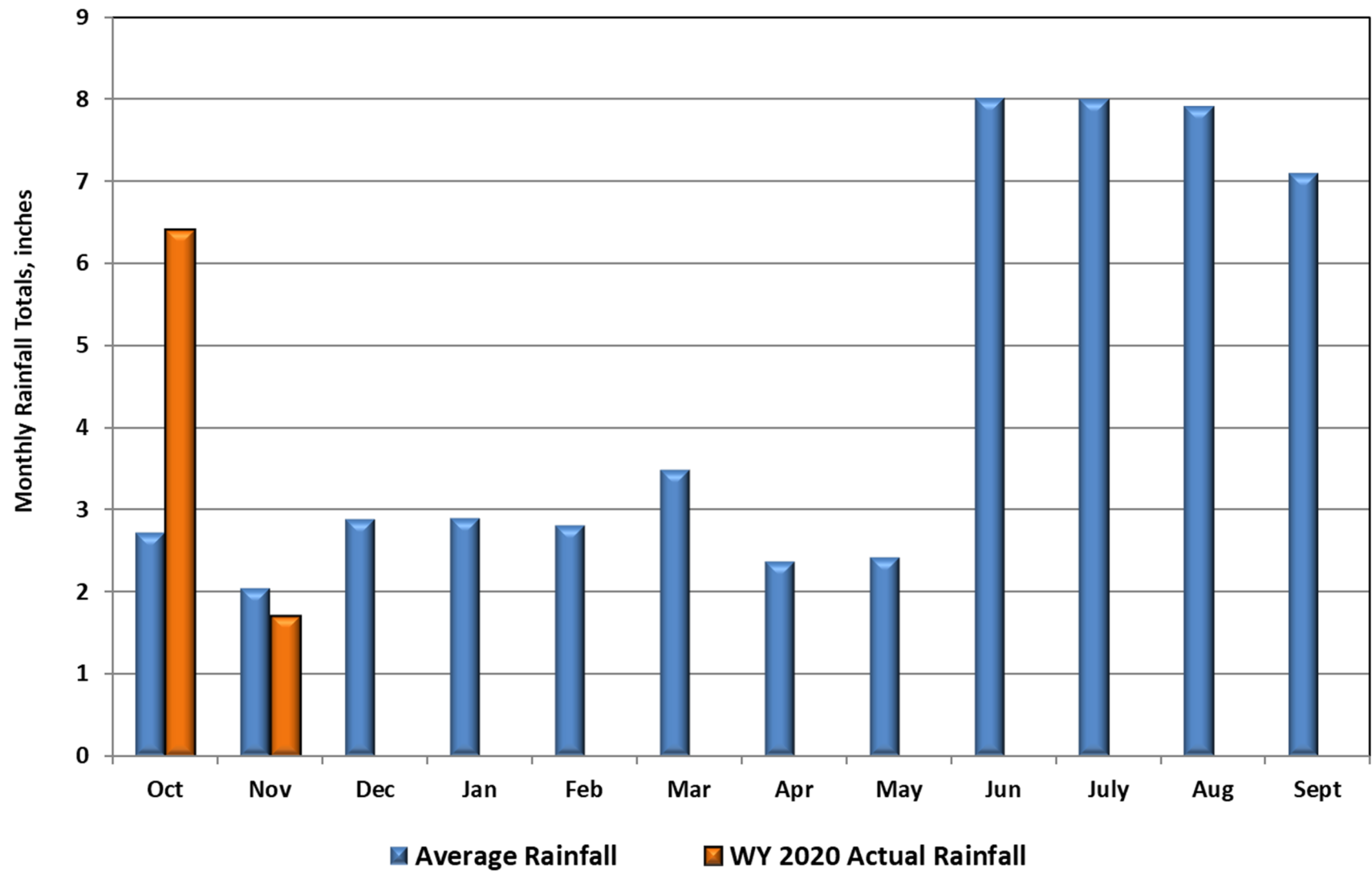
Staff continues to work with the members in collecting watering restrictions and conservation information, discussing and exploring various short-term and long-term demand management alternatives, implementing a consistent public awareness campaign throughout the region, and identifying additional opportunities 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 November
Water Year 2020 Compared To Water Year 2019**

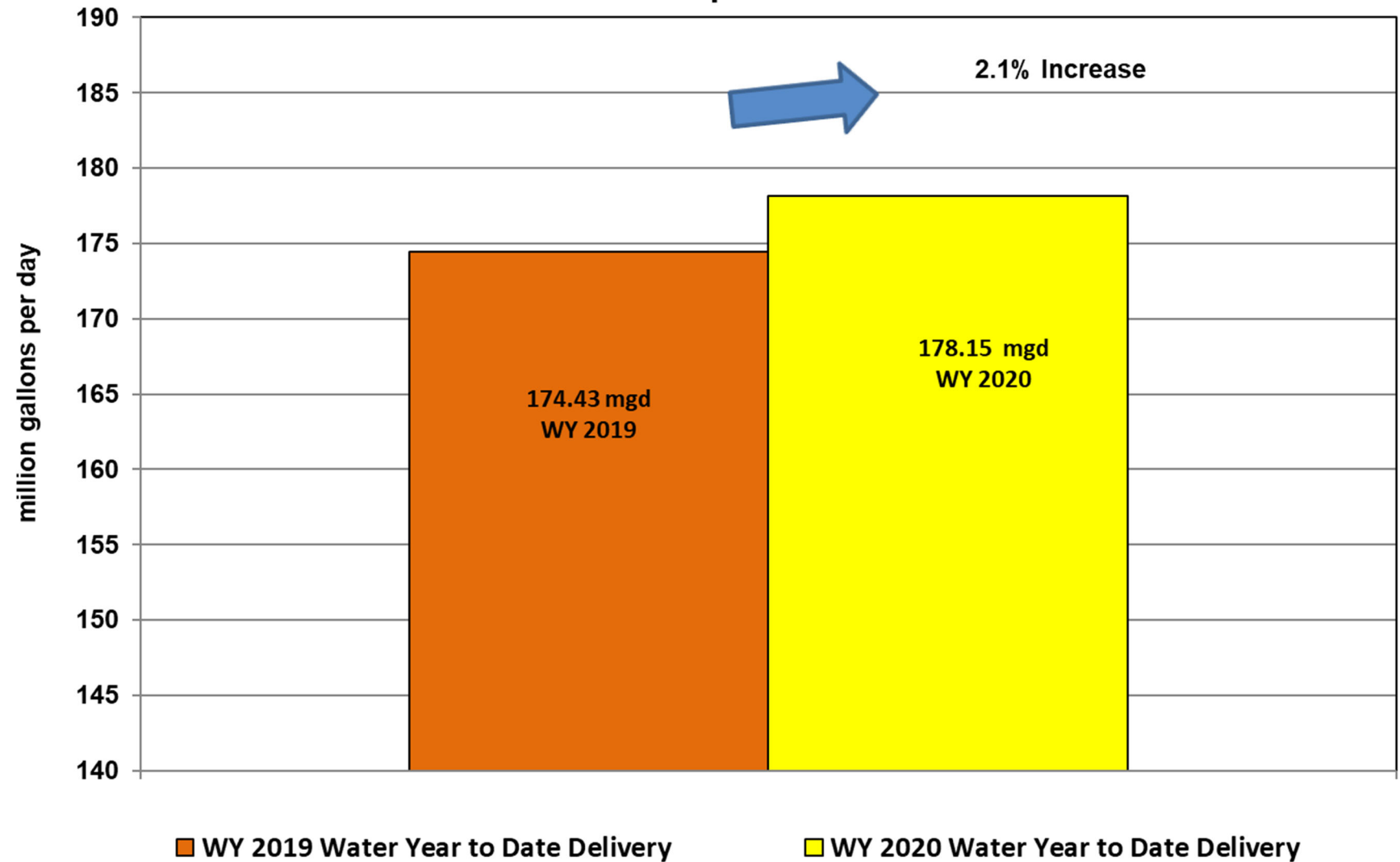


Figure 3. Consolidated Wellfield Production

