

# BOLINAS COMMUNITY PUBLIC UTILITY DISTRICT

BCPUD      BOX 390 270 ELM ROAD BOLINAS CALIFORNIA 94924      415 868 1224



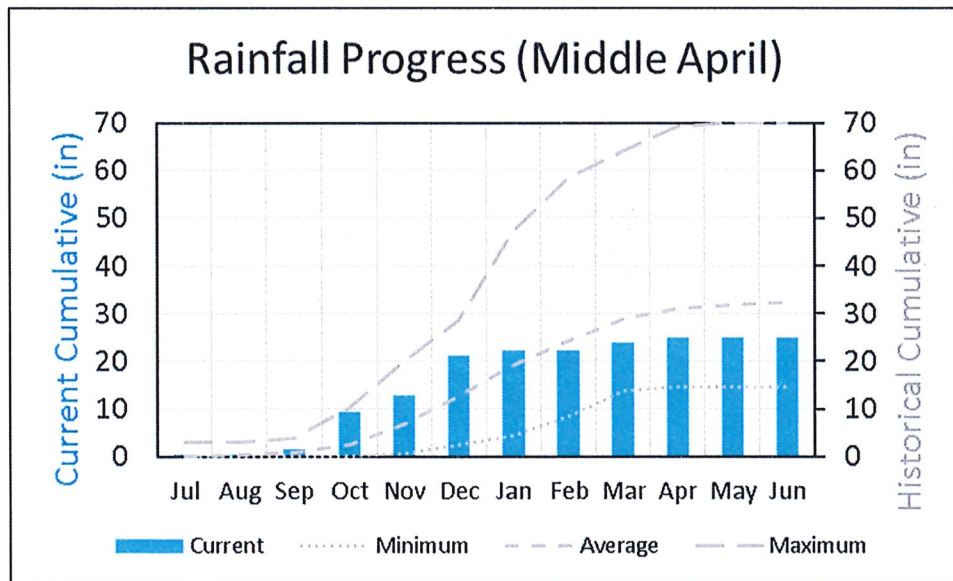
## MEMORANDUM

TO: Board of Directors  
FROM: Jennifer Blackman *JMB*  
RE: Update on Water Supply  
DATE: April 18, 2022

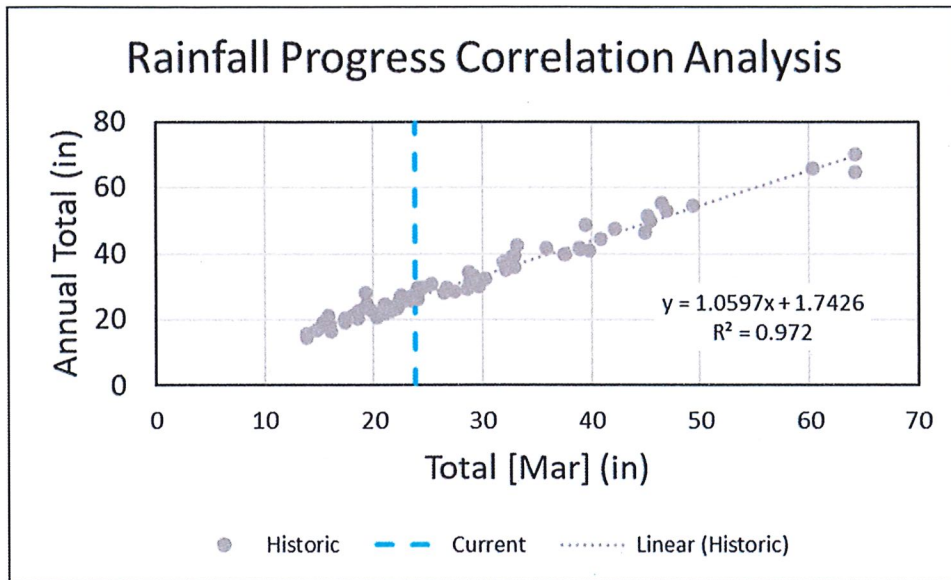
This memorandum provides a summary of the status of the District's water supply and related data and projections since the last memorandum to the Board dated March 14, 2022.

- Rainfall:** We have seen some welcome rain in recent days! Since my last memo to the Board dated March 14, 2022 and as of April 17, 2022, the district has received an additional 2.33 inches of rain, bringing our year-to-date total to 24.99 inches. Last year, as of the end of April 2021, the district had received only 16.25 inches of rain, so rainfall to-date remains well above last year's rainfall. As of the preparation of this memo, additional rainfall is predicted for April 20-21, 2022.

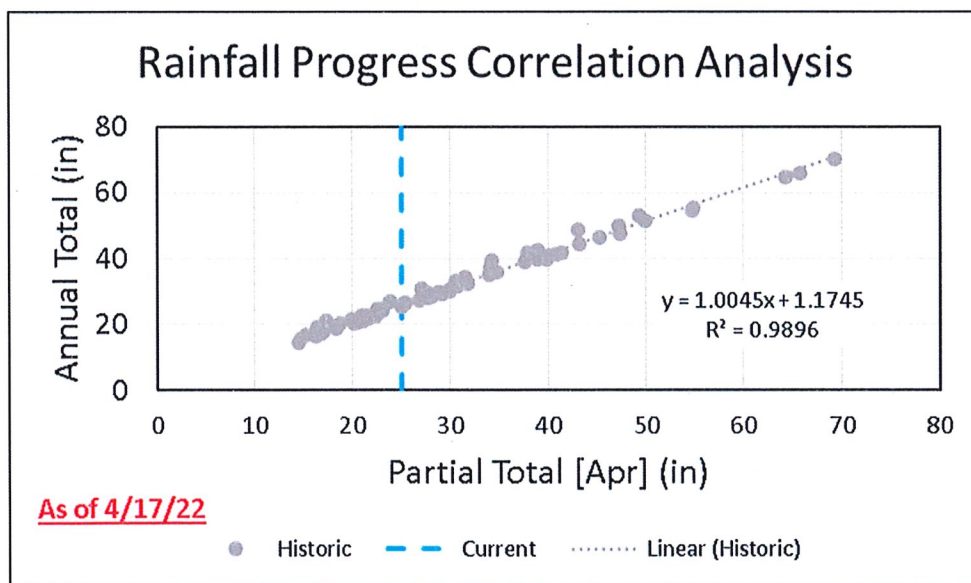
As depicted in the graph below, the cumulative precipitation as of April 17<sup>th</sup> remains below average:



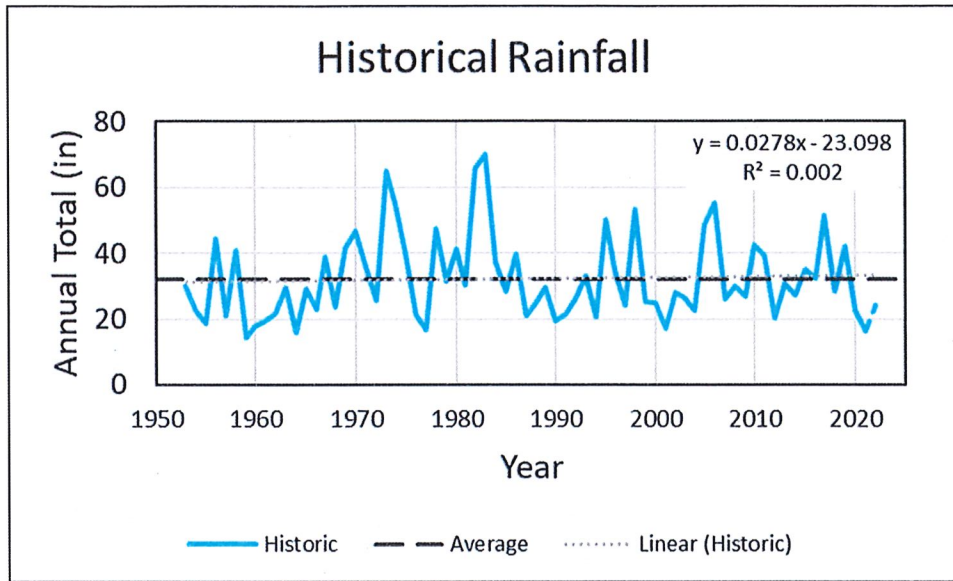
As for what the current rainfall total suggests for the full rain year total, the current forecast and seasonal trend suggest that the district will not receive its average annual rainfall this year (see graph on top of next page). This graph indicates via a "best fit" correlation analysis, based on rain data through the end of March 2022, that the district will receive 26.99 inches of rain in total for the 2021-22 rain year.



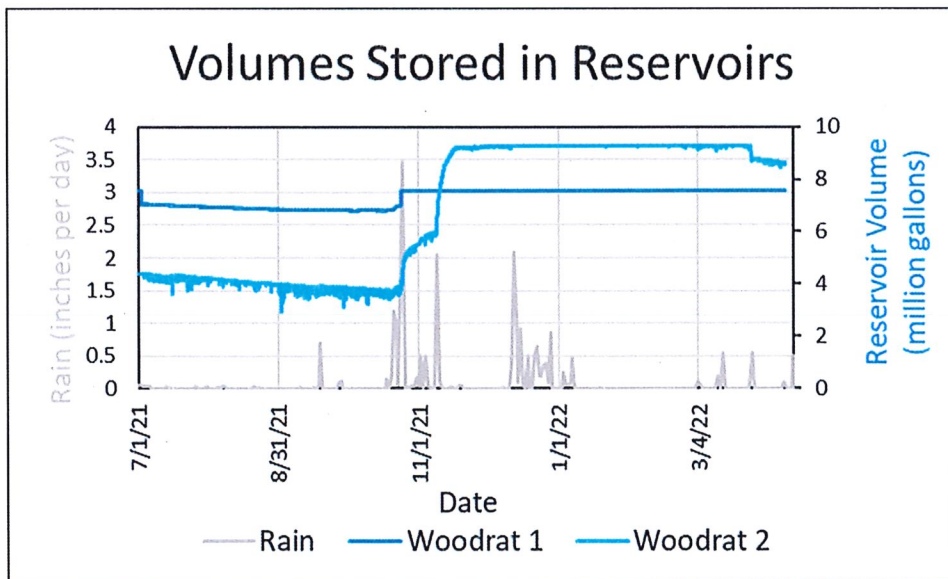
The graph below correlates the rainfall progress for April (assuming pessimistically that there will be no more rain for this month) with total annual rainfall for the available historical record (preceding 68 years). During that time, the district has experienced 26 other years where the rainfall received was 24.99 inches or less as of the end of April. Those rain years generally turned out to be somewhat drier than normal years with a minimum total rainfall received of 14.49 inches, a maximum of 26.85 inches, an average of 20.89 inches and a line of best fit projection of 26.28 inches.



It therefore appears at this time that the 2021-22 rain year will be a third consecutive year of below average rainfall in the district (see graph on the top of the next page), but not as dry as last year.



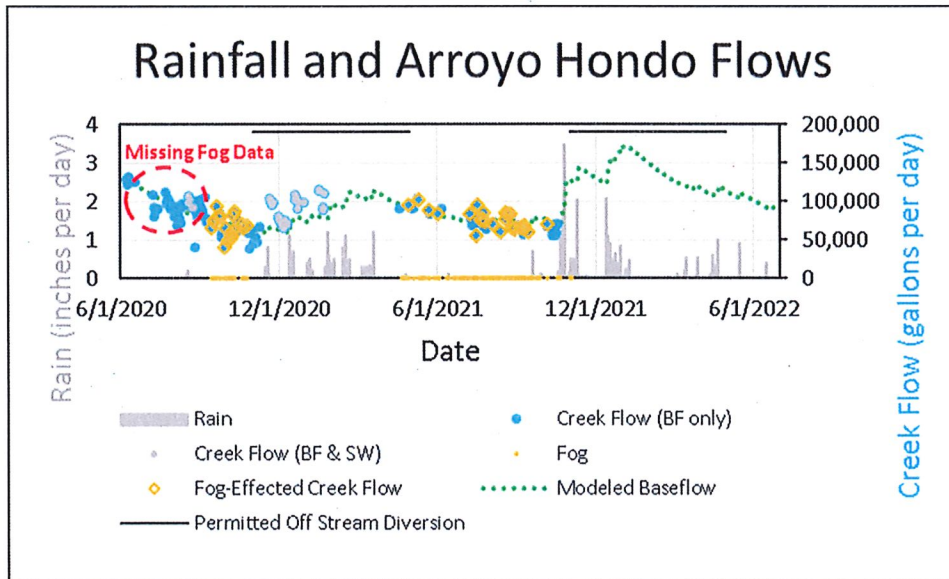
2. Water Production and Consumption: From March 15, 2022 – April 17, 2022, water *production* averaged 63,126 gallons per day (GPD) or approximately 107 GPD per connection, which is a decrease of approximately 8% as compared to the last reporting period, when production averaged 68,798 GPD, or approximately 116 GPD per connection. Water *consumption* during this same timeframe averaged 63,829 GPD, which is approximately 108 GPD per connection, and a decrease of approximately 3% as compared to the last reporting period, when consumption averaged 65,852 GPD, or approximately 111 GPD per connection.
  
3. Water in Storage:



The updated graph on the preceding page depicts the volumes of water stored in each of the district’s reservoirs (Woodrat 1 and Woodrat 2) from July 1, 2021 through mid-April 2022, with the rain events also shown.<sup>1</sup> Our stored usable water supply in the two reservoirs as of April 11, 2022 (combined), plus the amount of treated water in storage, is estimated to be 16,293,552 gallons. Both reservoirs are full; Woodrat 1 is spilling and Woodrat 2 is at the lip of the spillway.

4. Updated Models:

The next two graphs are the district’s base flow (BF) recession model for the Arroyo Hondo Creek, updated to depict predictions about creek flows for the remainder of the rain year.<sup>2</sup> The first graph shows actual conditions through April 17, 2022 and assumes another inch of rain in April; this graph then *assumes average monthly rainfall for Bolinas for May – June 2022*. An additional somewhat pessimistic assumption is that there will be no fog during the spring. If the district does receive average rainfall in May – June (and an additional inch in April), the model predicts that creek flows will be approximately 88,200 GPD by June 30, 2022, whereas flows were approximately 75,000 GPD on June 30, 2021.



The second graph (on the final page) shows actual conditions through April 17<sup>th</sup> and assumes an additional inch of rain for this month, but it then *assumes the same amount of rainfall we received last year for May – June 2022 and no fog in the spring*. If that lower amount of rainfall occurs, the model predicts creekflows on June 30, 2022 will be approximately 80,800, whereas (as noted above) flows were approximately 75,000 GPD on June 30, 2021.

<sup>1</sup> The water level reading as measured by the transducer in the Woodrat 2 Reservoir adjusted down by nearly half of a foot on the afternoon of March 27, 2022 (with no apparent explanation) and has remained at that level since, whereas the water level as measured at the staff gauge has remained the same. Staff is investigating why this occurred. The drop in water level as measured by the transducer is depicted in lighter blue line in the “Volumes Stored in Reservoirs” figure on page 3.

<sup>2</sup> It has not been possible for staff to collect actual creek flow data per our existing methods since the October rains when the gate at the lower diversion point was raised in anticipation of the “atmospheric river” rain storm. As such, staff is using this model to assess creek base flow response to rains, but we currently are unable to check the model against actual flow data. Staff is working to develop a means by which to measure creek flows at the upper diversion point.

