

# BOLINAS COMMUNITY PUBLIC UTILITY DISTRICT

BCPUD

BOX 390 270 ELM ROAD BOLINAS CALIFORNIA 94924

415 868 1224



## MEMORANDUM

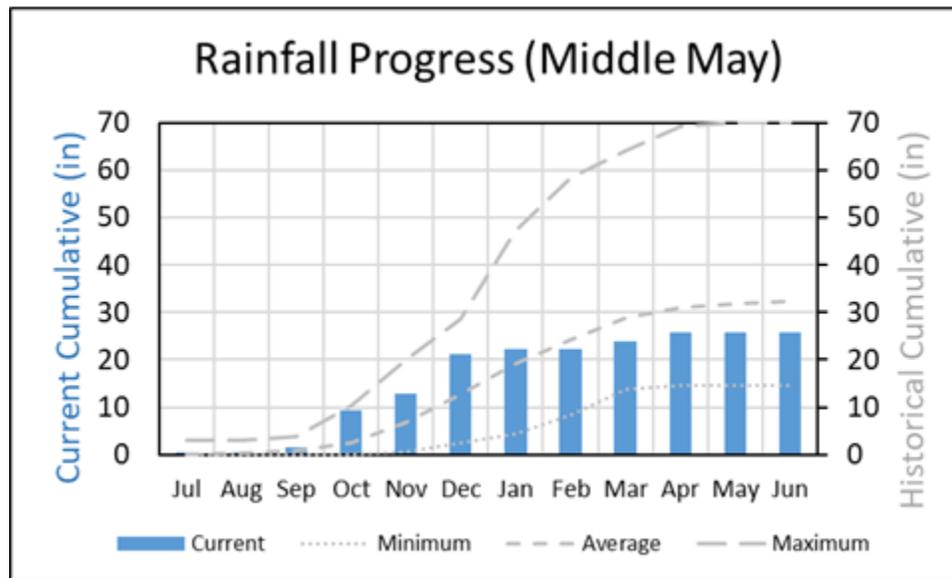
TO: Board of Directors  
FROM: Jennifer Blackman  
RE: Update on Water Supply  
DATE: May 17, 2022

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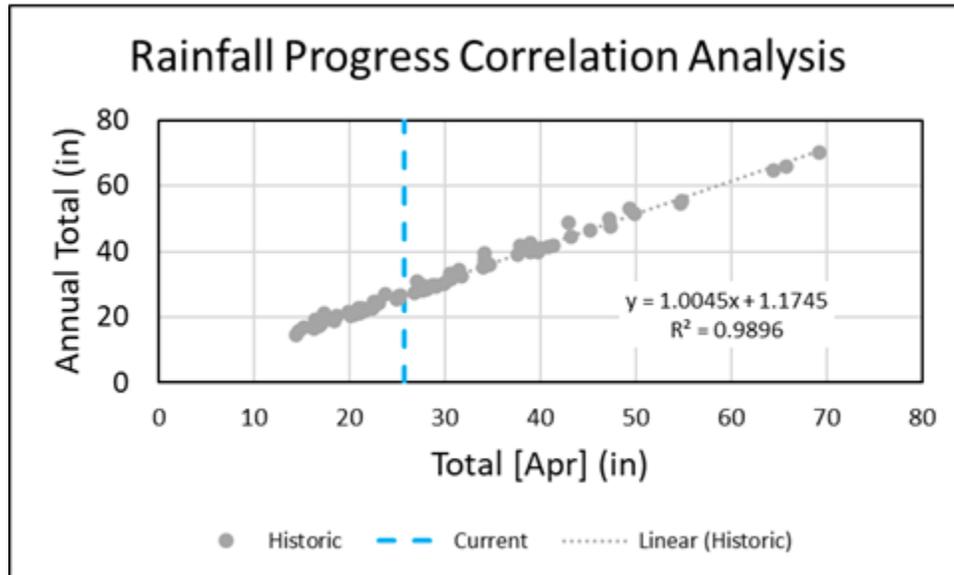
This memorandum provides a summary of the status of the District's water supply and related data and projections since the last memorandum to the Board dated April 18, 2022.

- Rainfall:** Since my last memo to the Board dated April 18, 2022 and as of May 13, 2022, the district has received an additional 0.86 inches of rain, bringing our year-to-date total to 25.85 inches. Last year, as of the end of May 2021, the district had received only 16.3 inches of rain, so rainfall to-date remains well above last year's rainfall. As of the preparation of this memo, however, no additional rainfall is predicted in the near or longer-term forecasts.

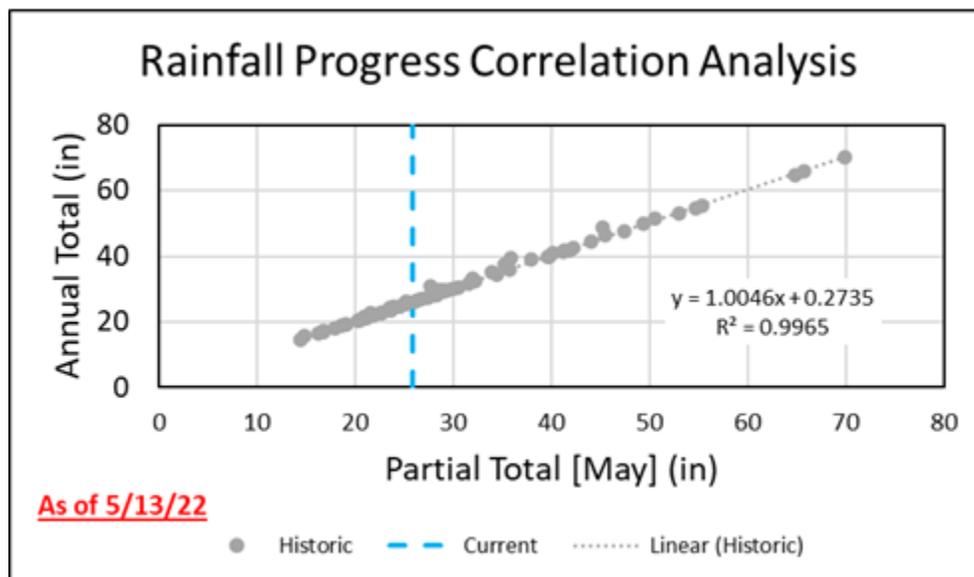
As depicted in the graph below, the cumulative precipitation as of May 13th remains well below average:



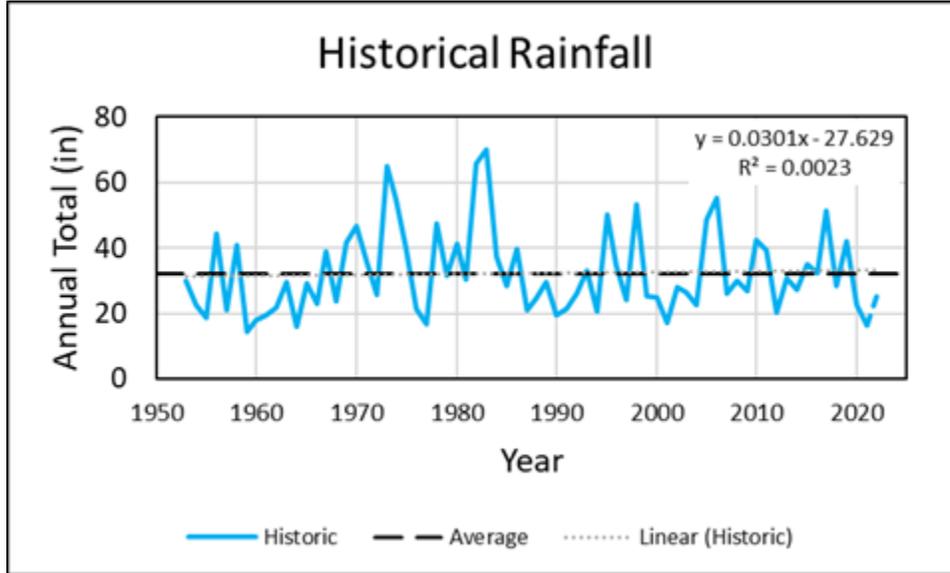
As for what the current rainfall total suggests for the full rain year total, the current forecast and seasonal trend suggest that the district will not receive its average annual rainfall this year (see graph on top of next page). This graph indicates via a "best fit" correlation analysis, based on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



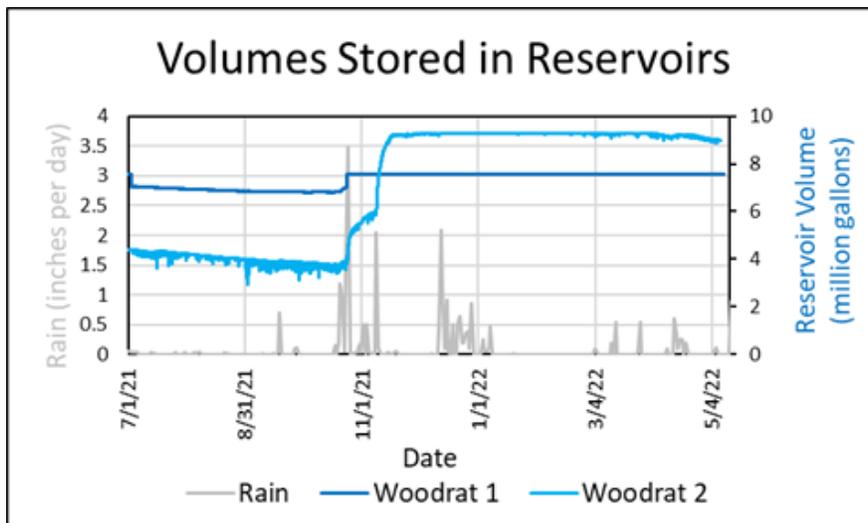
The graph below correlates the rainfall progress for May (assuming pessimistically that there will be no more rain for this month) with total annual rainfall for the available historical record (preceding 68 years). During that time, the district has experienced 27 other years where the rainfall received was 25.85 inches or less as of the end of May. 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 26.26 inches, an average of 21.04 inches and a line of best fit projection of 26.24 inches.



Based on a statistical analysis of historical data, it seems likely that we will only receive another 0.5 – 1 inch of rain during this rain year (which ends on June 30<sup>th</sup>); as such, it is virtually certain 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), albeit not as dry as last year.



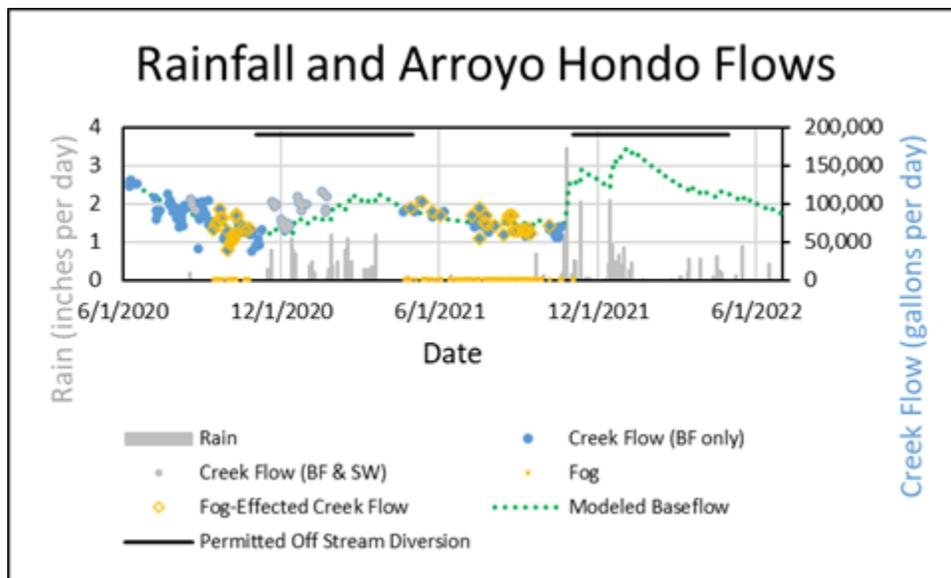
2. Water Production and Consumption: From April 18, 2022 – May 17, 2022, water *production* averaged 69,283 gallons per day (GPD) or approximately 118 GPD per connection, which is an increase of approximately 11% as compared to the last reporting period, when production averaged 63,126 GPD, or approximately 107 GPD per connection. Water *consumption* during this same timeframe averaged 69,116 GPD, which is approximately 118 GPD per connection, and is also an increase of approximately 11% as compared to the last reporting period, when consumption averaged 63,829 GPD, or approximately 108 GPD per connection. Consumption has increased significantly since May 1st: between May 1, 2022 and May 17, 2022, consumption averaged 73,981 GPD, or 126 GPD per connection, which is an increase of approximately 17% as compared to the last reporting period.
  
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-May 2022, with the rain events also shown. Our stored usable water supply in the two reservoirs as of May 9, 2022 (combined), plus the amount of treated water in storage, is estimated to be approximately 16.3 gallons. Both reservoirs are full.

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>1</sup> The first graph shows actual conditions through May 13, 2022; this graph then *assumes average monthly rainfall for Bolinas for the remainder of 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 during the rest of May – June, the model predicts that creek flows will be approximately 87,500 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 May 13<sup>th</sup>, but it then *assumes the same amount of rainfall we received last year for the rest of 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 80,200, whereas (as noted above) flows were approximately 75,000 GPD on June 30, 2021.

<sup>1</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 now in the process of developing a means by which to measure creek flows at the upper diversion point.

