

BOLINAS COMMUNITY PUBLIC UTILITY DISTRICT

BCPUD

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MEMORANDUM

TO: Board of Directors

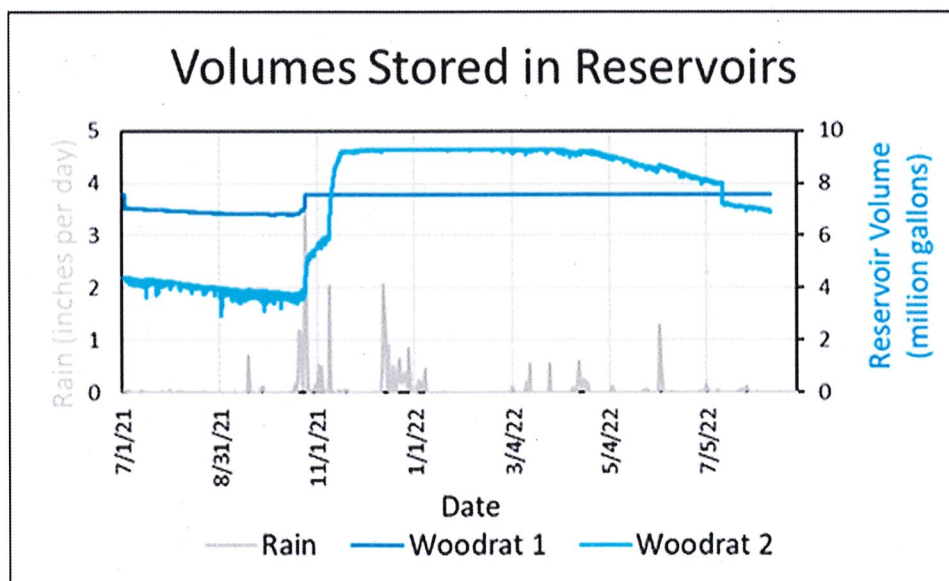
FROM: Jennifer Blackman *JB*

RE: Update on Water Supply

DATE: August 16, 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 July 19, 2022.

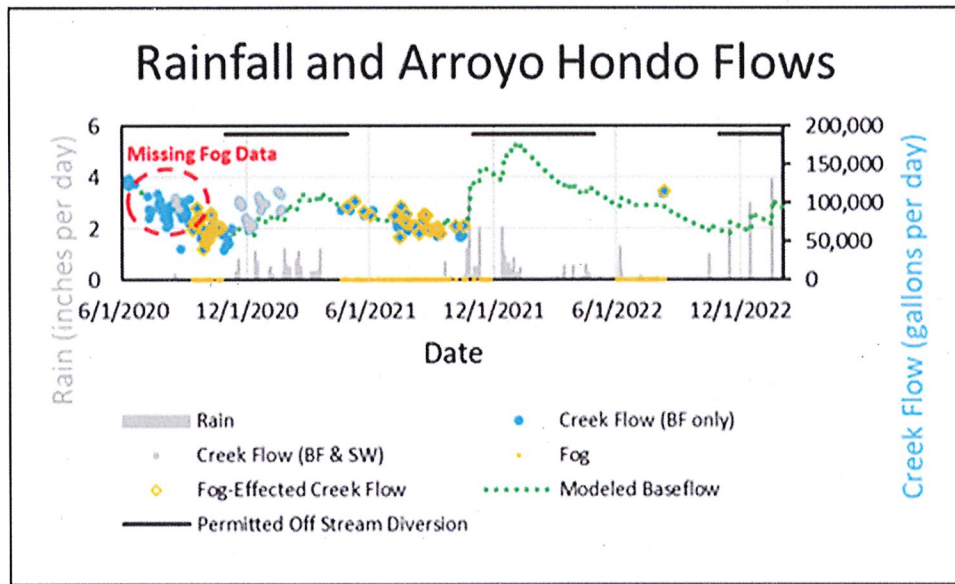
1. Rainfall: Thus far in the 2022-23 rain year, the district has received 0.75 inches rain; 0.7 inches of rain were received in July and 0.05 inches of rain have been received thus far in August.
2. Water Production and Consumption: From July 19, 2022 – August 15, 2022, water *production* in the district averaged 79,650 gallons per day (GPD), which is a decline of approximately 5% as compared to the last reporting period, when production averaged 83,650 GPD. The decline in production is due largely to the fact that the water treatment plant was off for two days during this period for maintenance and repairs. *Water consumption* during this same timeframe averaged 82,762 GPD (approximately 141 GPD per connection), and is a decline of approximately 2% as compared to the last reporting period, when consumption averaged 84,707 GPD, or approximately 144 GPD per connection. Note that this consumption figure includes two major water system distribution leaks totaling approximately 150,000 gallons of water loss. If those gallons are subtracted from the consumption figures, then water consumption during this timeframe averaged 77,405 GPD (approximately 132 GPD per connection), which is a decline of approximately 9% as compared to the last reporting period.
3. Water in Storage:



The updated graph on the prior 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-August 2022, with the rain events also shown. Our stored usable water supply in the two reservoirs as of August 15, 2022 (combined), plus the amount of treated water in storage, is estimated to be approximately 14 million gallons. The Woodrat 1 Reservoir is essentially full (7.6 million gallons, 6.9 million of which are usable) and the Woodrat 2 Reservoir is approximately 75% full (6.9 million gallons, 6.3 million of which are usable).¹ Losses from evaporation and seepage are evident in the Woodrat 2 Reservoir, which is more exposed to wind and has a larger surface area than the Woodrat 1 Reservoir; the loss rate is approximately 400,000 gallons per month during the summer/longest days of the year. Some loss also occurs at the Woodrat 1 Reservoir, but more favorable conditions (this reservoir is more protected from the wind) result in smaller losses which are not evident as a result of ongoing operations (i.e., water from filter backwashing is returned to reservoir).

4. Updated Base Flow Recession Model:

The graph below is 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 calendar year. The district moved from its upper diversion point on the Arroyo Hondo Creek to the lower diversion point earlier this month and staff was able to obtain its first measurements of creek flow since last October. Between August 8th and August 11th, creek flows were estimated at approximately 105,000 GPD.² The base flow recession model conservatively under-predicted the estimated flow as depicted by the dotted green line below the grey dot representing actual creek flow measurement last week.



¹ The decline in storage depicted in the graph for Woodrat 2 storage in mid-July (approximately 700,000 gallons) is a result of correcting the transducer datum (i.e., adjusting the reference water level); the district has experienced issues with the transducer in this reservoir, leading to some uncertainty in the estimated volume of water.

² Staff measured an initial rate of flow past/around the gate of 15 GPM and efforts are underway to reduce this flow rate. Last year, staff was able to achieve a reduction in the rate of flow past/around the gate to approximately 5 GPM. The recoverable creek flow therefore is less than the 105,000 GPD described above at present due to this seepage.

5. Scenario Summaries:

The graph below is an updated Scenario Summary reflecting the actual data recorded as of August 15, 2022 (the two black diamonds in the upper left corner) and the “fork” of projections as to how much stored water the district will have available through January 2023 and beyond based on differing rates of overall community water consumption and based on an assumed (but hypothetical) receipt of 9.9 inches of rain during October 2022 through January 2023, as well as assumptions about evaporative loss in the reservoirs (400,000 gallons per month) and predictions of available creek flows. The most recent seven-day running average community consumption is approximately 75,500 GPD placing the district in between the light blue and dark blue lines. This graph indicates that if consumption stays close to current levels *and* the 9.9 inches of hypothetical rainfall occurs by January 31, 2023 (a relatively conservative assumption), the district will have just under 11 million gallons of water in storage through January 2023. Results would be less favorable if less/no rain occurs since creek flows would continue to drop and no reservoir inflows from runoff would occur.

