

**SPECIAL MEETING REGARDING POSSIBLE  
EXCEPTIONS TO ANTICIPATED MANDATORY  
RATIONING MEASURES**

**BOLINAS COMMUNITY PUBLIC UTILITY DISTRICT**



February 8, 2021



# MEETING OUTLINE

- Purposes of Meeting
- Underlying Water Supply Facts and Limitations
- Presentation of BCPUD Staff's Recommended Rationing Approach
- Consider Implications of Alternative Rationing Approaches
- Discussion



# MEETING OUTLINE

- **Purposes of Meeting**
- Underlying Water Supply Facts and Limitations
- Presentation of BCPUD Staff's Recommended Rationing Approach
- Consider Implications of Alternative Rationing Approaches
- Discussion



# PURPOSES OF MEETING

- Present the BCPUD Board of Directors and the Bolinas community with important context about Bolinas' underlying water supply limitations
- Provide recommendations for additional conservation and elimination of opportunities for water waste
- Present BCPUD's staff's **previously recommended per connection per day water rationing approach**\*, updated with limited exceptions for businesses, public-serving and multi-use entities only

\* as stated at the February 3, 2021 special BCPUD Board meeting -- the daily ration amount previously was anticipated by staff to be *no more than 100 GPD per connection*



# PURPOSES OF MEETING

- Present alternative rationing approaches and explain the consequences of a significant number of residential exceptions on the available water supply
- Present BCPUD's staff's **revised recommendation for per connection per day water rationing approach\***, with limited exceptions for businesses, public-serving and multi-use entities only *at this time*
- **Please hold questions until the presentation is complete**

\* as will be explained tonight, staff's currently anticipates a revised daily ration amount of *125 GPD per connection*



# MEETING OUTLINE

- Purposes of Meeting
- **Underlying Water Supply Facts and Limitations**
- Presentation of BCPUD Staff's Recommended Rationing Approach
- Consider Implications of Alternative Rationing Approaches
- Discussion



# UNDERLYING WATER SUPPLY FACTS AND LIMITATIONS

- Bolinas has been under a *declared water shortage emergency* since the 1970's due to the well-documented limited nature of our water supply
- Our limited water supply is why there is a *moratorium on new connections* to the water system



# UNDERLYING WATER SUPPLY FACTS AND LIMITATIONS

- Our limited water supply is why the BCPUD Board considers customer building projects and *limits water use via a permit process*
- Our limited water supply is why the BCPUD has taken action over the decades (and continues to this day) to *augment the water supply* (for ex., constructed reservoirs, upgraded the distribution system to reduce water loss, conducted conservation outreach and education to reduce demand, evaluated potential short-term and long-term supplemental sources)





# UNDERLYING WATER SUPPLY FACTS AND LIMITATIONS

- All of California, and much of the West, is currently experiencing (and regularly experiences) *severe drought conditions*
  - While drought conditions are a fact of life in the West, *climate change forecasts suggest that drought conditions may deepen* in coming decades
  - For example, in addition to extended drier periods in terms of rainfall, BCPUD staff's analysis to-date suggests that the relative *lack of fog in recent years may be impacting the current flows in the Arroyo Hondo Creek*



# UNDERLYING WATER SUPPLY FACTS AND LIMITATIONS

- Accordingly, because Bolinas has such a limited water supply, and because of the frequent drought conditions here, which are forecasted to be exacerbated by climate change, **water-intensive uses/activities** by BCPUD customers essentially are undertaken at the **customer's risk** that water may not be available from time to time for those uses/activities



# UNDERLYING WATER SUPPLY FACTS AND LIMITATIONS

- Water-intensive uses/activities include, but are not limited to:
  - Automatic irrigation systems\*
  - Lawns and/or other water-intensive gardens
  - Lengthy and/or multiple daily showers or baths
  - Multiple rental units on residential properties
  - Regular/frequent short-term residential property rentals
  - Homes without oversight\*\*
  - Inefficient or unnecessary appliance use
  - Car washing

\* without daily maintenance, these systems also are prone to significant leaks and they also regularly result in over-watering

\*\* high water losses frequently occur when owners are away from their homes (e.g., irrigation system leaks, toilet leaks, hoses used/left running)



# UNDERLYING WATER SUPPLY FACTS AND LIMITATIONS

- All Californians, and especially Bolinas residents, therefore should consider what they can do to be more water-resilient
  - Learn and employ water-efficient habits
  - Forego water-intensive planting in favor of xeriscape gardens
  - Install water-efficient appliances
  - Install water catchment systems
  - Install grey water systems
  - Purchase supplemental drinking water if needed temporarily (Costco: less than \$6 for five gallons + \$2.99/month rental fee for stand)



# UNDERLYING WATER SUPPLY FACTS AND LIMITATIONS

- Every month, customers on the BCPUD's water system experience significant leaks, resulting in unfortunate water waste, such as:
  - Hose bib in resident's yard was turned on and left running when resident was out of town – approximately 47,000 gallons wasted (1,505 gallons per day) – December 2020
  - While resident was on vacation, toilet flap failed – approximately 112,140 gallons wasted (3738 gallons per day) – November 2020



# UNDERLYING WATER SUPPLY FACTS AND LIMITATIONS

- Many leaks are avoidable
- Right now, all Bolinas customers should:
  - Turn off irrigation systems **and** disconnect those systems from hose bibs entirely to ensure against unintended water loss (leaks)
  - Lock out outdoor hose bibs to prevent water theft
  - Install house valves and shut off water to the house during extended absences (eliminate risk of long-term toilet leak)
  - Engage caretaker/ask neighbor to regularly inspect/check on your property for potential water waste when on vacation or away for extended periods
  - Implement a household water conservation plan



# MEETING OUTLINE

- Purposes of Meeting
- Underlying Water Supply Facts and Limitations
- **Presentation of BCPUD Staff's Recommended Rationing Approach**
- Consider Implications of Alternative Rationing Approaches
- Discussion



# PRESENTATION OF BCPUD STAFF'S RECOMMENDED RATION APPROACH

- BCPUD staff recommends that the Board enact a *per connection per day* mandatory water rationing program effective March 1, 2021 to ensure a reliable water supply for the community throughout 2021
- BCPUD staff further recommends the Board grant limited exceptions to specific businesses, public-serving and multi-use entities *only*





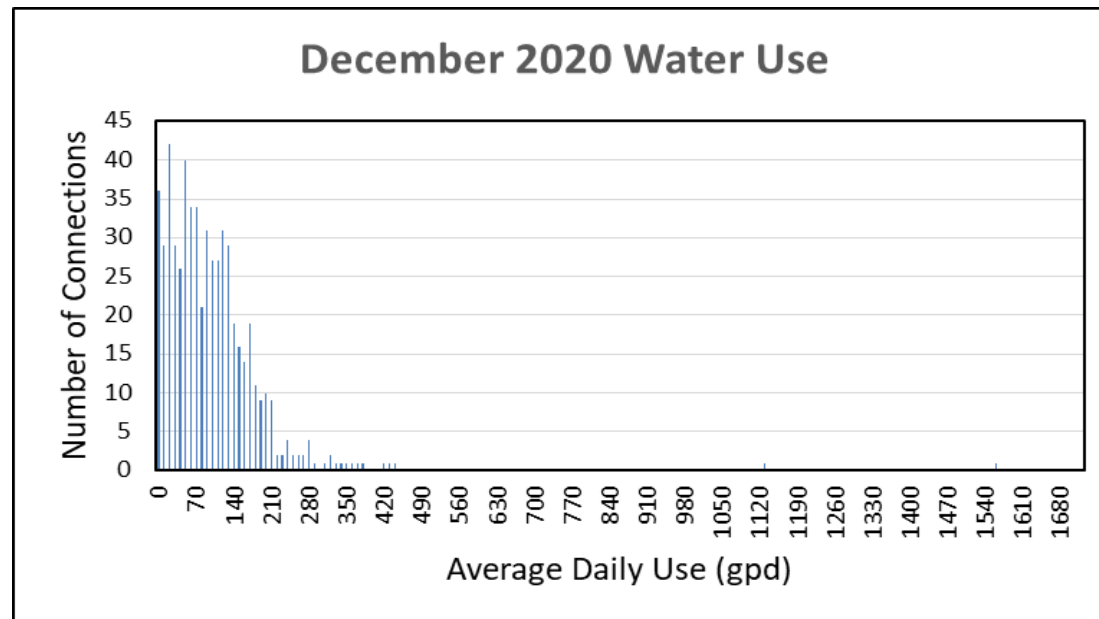
# PRESENTATION OF BCPUD STAFF'S RECOMMENDED RATION APPROACH

- BCPUD staff's recommendation is modeled on the rationing program the BCPUD Board enacted in 2009 in response to a multi-year drought (BCPUD Resolution 575)
- The per connection per day rationing program had broad community support as a reasonable approach that did not discriminate between types of customers or types of water uses



# PRESENTATION OF BCPUD STAFF'S RECOMMENDED RATION APPROACH

- Water use in Bolinas varies widely across the customer base





# PRESENTATION OF BCPUD STAFF'S RECOMMENDED RATION APPROACH

- In December 2020:
  - 358 customers, or 60% of the BCPUD's customers, used less than 100 gallons of water per day
    - These customers collectively used 26% of the available water supply
  - The remaining 234 customers, or 40% of the BCPUD's customers, used more than 100 gallons of water per day
    - These customers collectively used 74% of the available water supply



# PRESENTATION OF BCPUD STAFF'S RECOMMENDED RATION APPROACH

- Of the 234 customers who used more than 100 gallons of water per day, 14 were businesses or public-serving or multi-use entities
  - These 14 customers used a combined average of 341 gallons of water per day
- The 220 residential customers who used more than 100 gallons of water per day used a combined average of 174 gallons of water per day



# PRESENTATION OF BCPUD STAFF'S RECOMMENDED RATION APPROACH

- BCPUD staff believes that many of the 220 residential customers who used more than 100 gallons of water per day are capable of further reducing their water use
- For example:
  - One residential customer (family of five) used 273 gallons of water per day in December
  - Another residential customer (family of two) used 200 gallons of water per day in December
  - In contrast: another residential customer (two families, six people) used an average of 101 gallons per day throughout the last six months



# PRESENTATION OF BCPUD STAFF'S RECOMMENDED RATION APPROACH

- Given the disparity in water use in the community, and given the context of the District's extremely limited water supply conditions, BCPUD staff believes it is premature for the BCPUD Board to grant *any* residential exceptions (or divert staff time and district resources to implementing a per person per day rationing approach) at this time
- Instead, BCPUD staff recommends that the BCPUD Board defer establishing criteria for residential exceptions, if at all, until such time as all residential customers have demonstrated their best, sustained efforts to conserve water and achieve the mandatory ration amount



# PRESENTATION OF BCPUD STAFF'S RECOMMENDED RATION APPROACH

- Once the mandatory rationing requirements are enacted, customers finding it difficult to comply with the daily ration amount can contact the BCPUD and staff will be assigned to meet with them, conduct a water audit, and identify opportunities for conservation
- The customer will then be tasked with keeping a written record of their daily water use for at least the next 1-2 weeks – documenting how much water is used each day and for what purpose – as a requirement of eligibility to apply for an exception to the ration amount



# PRESENTATION OF BCPUD STAFF'S RECOMMENDED RATION APPROACH

- BCPUD staff recommends that the BCPUD Board grant specific limited exceptions from the mandatory daily ration amount to businesses, public-serving and multi-use entities *only*, as the Board did in 2009
- BCPUD staff has evaluated the recent (2020) and pre-pandemic (2017-2019) water use of such customers and recommends the following exceptions which, in each case, requires further conservation from these customers (*see next slide*)\*

\* BCPUD staff has not yet discussed these specific exception amounts with the affected entities





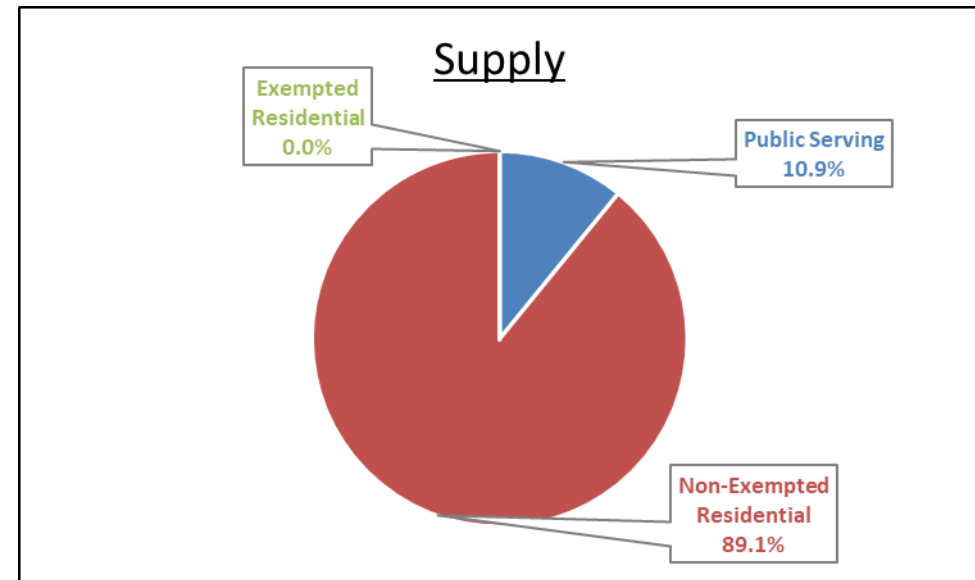
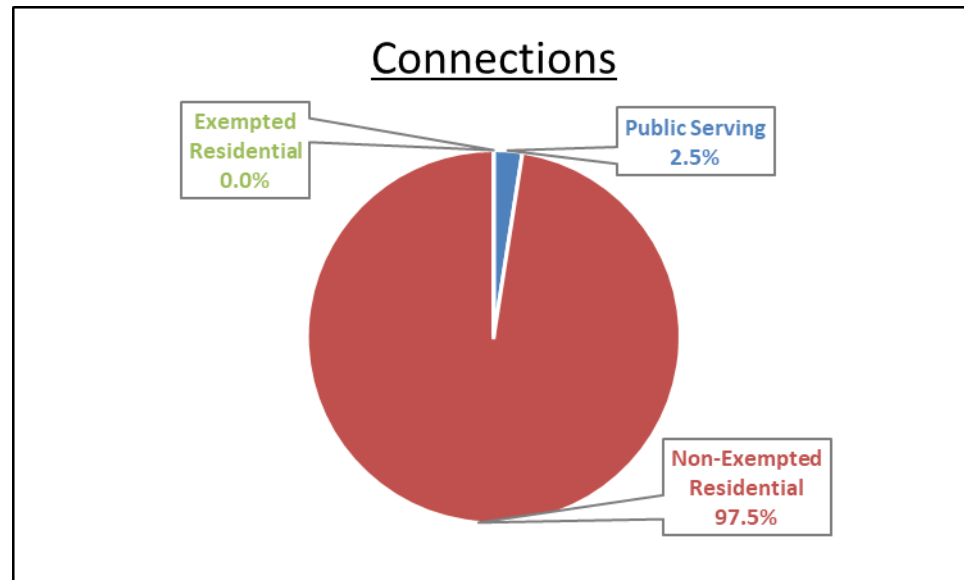
# PRESENTATION OF BCPUD STAFF'S RECOMMENDED RATION APPROACH

• Bolinas Laundromat	1,000 GPD
• Coast Café	1,200 GPD
• Smiley's Schooner Saloon	681 GPD
• Eleven	294 GPD
• Bolinas Community Center	300 GPD
• Commonweal	500 GPD
• Bolinas School	300 GPD
• Bolinas Market	150 GPD
• Gibson House (BCLT)	300 GPD
• Garage (BCLT)	500 GPD
• Open Space bathroom (tennis courts)	350 GPD
• Nisbet Orchids	527 GPD
• The Barn (52 Wharf)	193 GPD
• BCPUD (270 Elm)	272 GPD



# PRESENTATION OF BCPUD STAFF'S RECOMMENDED RATION APPROACH

These 14 businesses, public-serving and multi-use facilities represent 2.5% of the district's connections; if the recommended exceptions are granted, these customers will receive 10.9% of the available water supply





# PRESENTATION OF BCPUD STAFF'S RECOMMENDED RATION APPROACH

- *If the foregoing 14 business, public-serving and multi-use exceptions are granted, the resulting residential ration amount would be 97 gallons per day per connection*
- This calculation was derived using the following assumptions:
  - Current water usage in town needs to be held (per BCPUD staff's presentation on February 3, 2021) at current levels of approximately 62,000 gallons per day or 102 gallons per day per connection via mandatory rationing in order to ensure reliability of the district's water supply during 2021
  - The district will receive a total of 21 inches of rain this rain year
  - 0 usage for 24 active connections that had negligible if any use during the last four years



# MEETING OUTLINE

- Purposes of Meeting
- Underlying Water Supply Facts and Limitations
- Presentation of BCPUD Staff's Recommended Rationing Approach
- **Consider Implications of Alternative Rationing Approaches**
- Discussion



# CONSIDER IMPLICATIONS OF ALTERNATIVE RATIONING APPROACHES

- The BCPUD Board at the February 3, 2021 special meeting indicated an interest in considering a *per person per day rationing approach*, or otherwise granting *certain residential exceptions* from the mandatory ration amount
- However, granting exceptions is complex, time-consuming and resource-intensive for the district and has the potential to divide the community and/or significantly impact the remaining available water supply for other residential customers



# CONSIDER IMPLICATIONS OF ALTERNATIVE RATIONING APPROACHES

- BCPUD staff has received exception requests, thus far, from residential customers in the following categories:
  - Customers with multiple rental units on one residential property
  - Customers with “large” or extended families on one residential property
  - Customers with extensive gardens
  - Customers with medical needs
  - Customers who believe they cannot reduce their usage any further



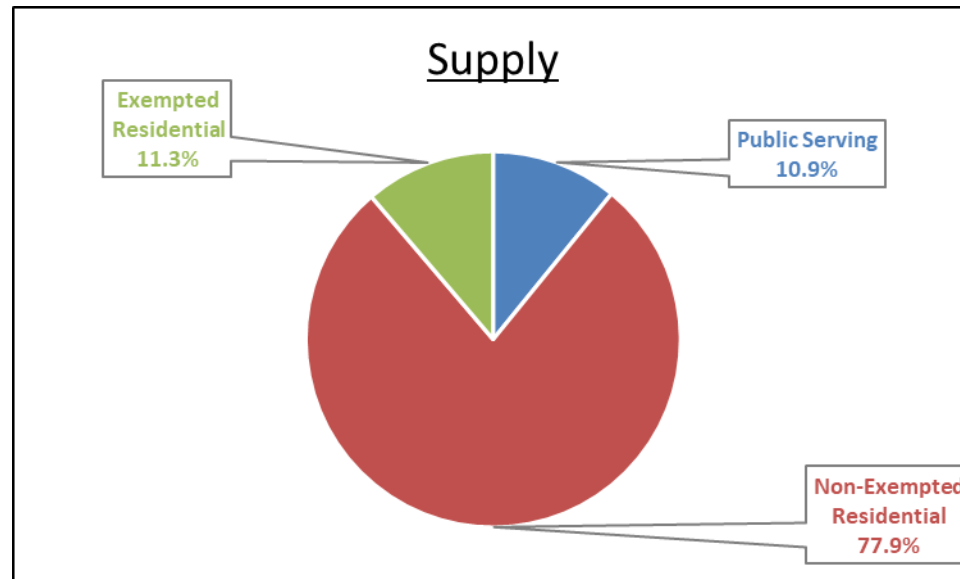
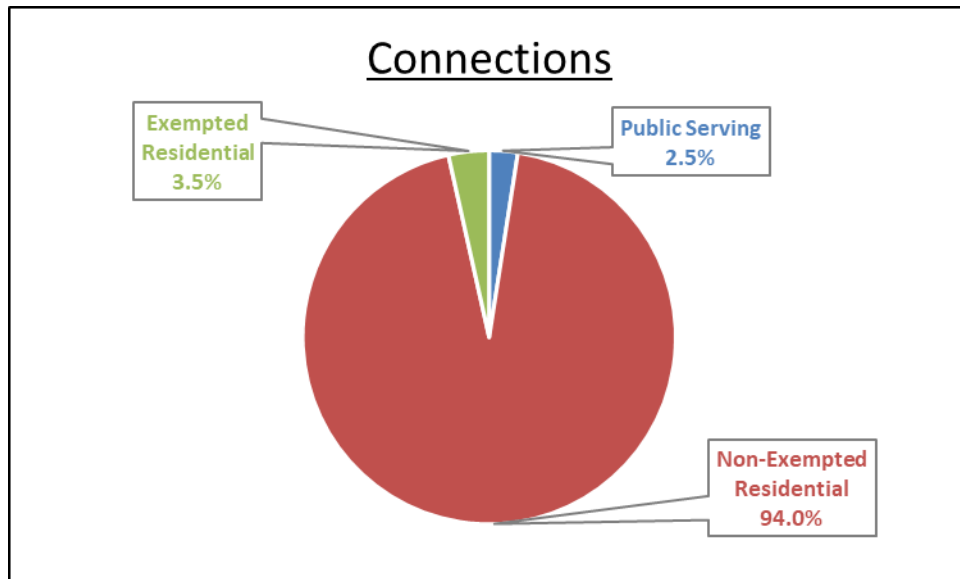
# CONSIDER IMPLICATIONS OF ALTERNATIVE RATIONING APPROACHES

- Granting exceptions based on any one or more of the foregoing “needs” inevitably involves value judgments because water use “needs” vary in the eye of the beholder
- Customers who enjoy long showers, or who are dedicated gardeners, for example, feel their water needs are as important as another customer’s need to rent multiple units, or another customer’s need to operate a vacation rental, or another customer’s need to provide housing to extended family



# CONSIDER IMPLICATIONS OF ALTERNATIVE RATIONING APPROACHES

For purposes of illustration, if the Board were to approve exceptions for the 20 highest residential water users in the community (allowing them to retain their current usage), those customers represent 3.5% of the district's connections and would receive 11.3% of the available water supply







# CONSIDER IMPLICATIONS OF ALTERNATIVE RATIONING APPROACHES

- If the foregoing exceptions were granted to the 20 highest water-using residential connections (in addition to the businesses, public-serving and multi-use entities), the resulting ration amount for the remaining residential connections would drop from 97 gallons per day per connection to **87** gallons per day per connection
- It is reasonable to assume that more than 20 residential customers will request exceptions from the mandatory ration amount, further depressing the amount of the remaining water supply for all other residential customers



# CONSIDER IMPLICATIONS OF ALTERNATIVE RATIONING APPROACHES

- In light of the complexities, time and costs to the district\* of endeavoring to implement a per person per day rationing system, or endeavoring to establish criteria for residential exemptions and then evaluate the resulting implications over the next two weeks, BCPUD staff decided to reevaluate the underlying water supply assumptions and projections presented to the BCPUD Board last week
- Specifically, BCPUD staff explored whether it would be possible to allow *some* increase in overall water consumption above December 2020 levels

\* Such as overtime and/or extra hires, as well as other work not accomplished



# CONSIDER IMPLICATIONS OF ALTERNATIVE RATIONING APPROACHES

- At the special BCPUD Board meeting on February 3, 2021, BCPUD staff said that mandatory rationing of water is necessary to ensure historical “seasonal demand increases” in water use do not occur
- BCPUD staff noted that if community water use were to increase consistent with historic seasonal demand, the district will run critically low on water and experience very poor water quality by early Fall (fire season), or run out of water entirely if rainfall is less than projected



# CONSIDER IMPLICATIONS OF ALTERNATIVE RATIONING APPROACHES

- BCPUD staff recommended that the Board enact a resolution effective May 1, 2021 to mandatorily ration water at December 2020 levels (approximately 62,000 gallons per day in the district, or 102 gallons per day per connection, on average), with specific limited exceptions that (as earlier explained) would reduce that daily use amount to 97 gallons per day
- BCPUD staff projected that **if** the district receives 20.7 total inches of rain (the historic dry-year average) **and** community water use stays at December 2020 levels via mandatory rationing, the district will not run out of water in 2021 and will be in a resilient position in terms of stored water at the end of 2021 when creek flows will be very low if rains do not resume before year-end



# CONSIDER IMPLICATIONS OF ALTERNATIVE RATIONING APPROACHES

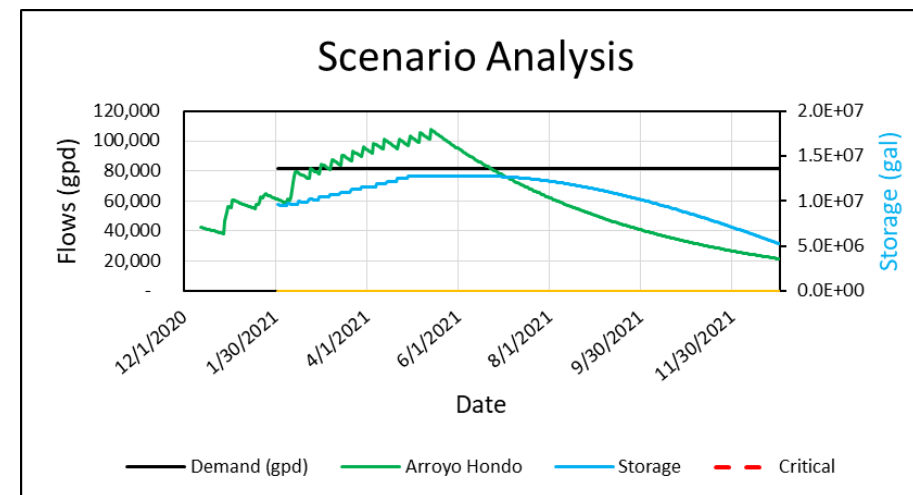
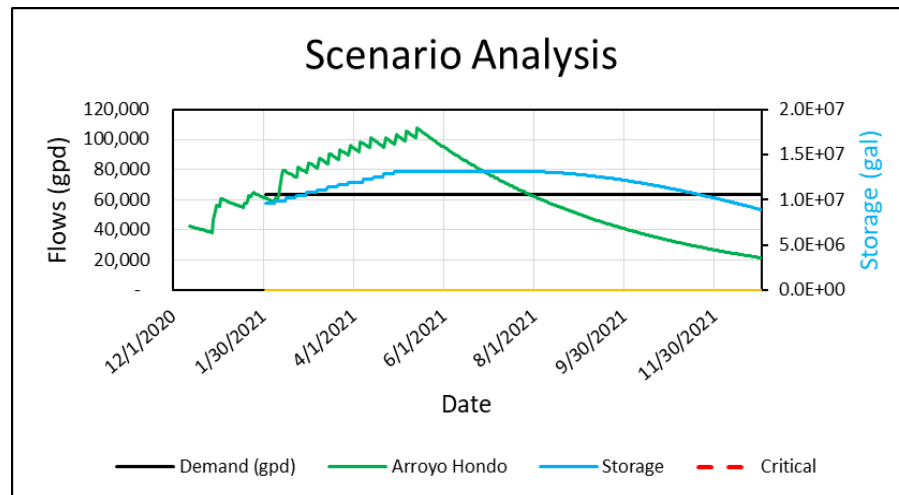
- BCPUD staff subsequently evaluated whether a modest increase in the district's overall water consumption would be sustainable in light of the projected available water supply conditions
- Specifically, BCPUD staff considered the implications for the district's water supply if the district receives 20.7 total inches of rain (the historic dry-year average) and community water use is limited to **76,000 gallons per day, or 125 gallons per day per connection** (via mandatory rationing)\*

\* business, public-serving and multi-unit exceptions included



# CONSIDER IMPLICATIONS OF ALTERNATIVE RATIONING APPROACHES

- *If the district receives 20.7 total inches of rain (the historic dry-year average) and community water use does not exceed 76,000 gallons per day via mandatory rationing, BCPUD staff projects that the town will not run out of water in 2021 but will be in a somewhat less resilient position in terms of stored water at the end of 2021 (5.3 million gallons – see graph below on the right) as creek flows drop than if water use was limited to 62,000 gallons per day (9 million gallons – see graph below on the left)*





# CONSIDER IMPLICATIONS OF ALTERNATIVE RATIONING APPROACHES

- *BCPUD staff concludes it is reasonable to revise its mandatory rationing recommendation to the BCPUD Board to enact a resolution effective March 1, 2021 establishing a maximum **76,000 gallons per day water usage in the community, or 125 GPD per connection,** subject to the 14 previously explained exceptions for businesses, public-serving and multi-unit entities*
- BCPUD staff will continue to monitor all available water supply indicators (including but not limited to rainfall and potential groundwater supplementation) and adapt its projections and rationing recommendations accordingly throughout 2021



# CONSIDER IMPLICATIONS OF ALTERNATIVE RATIONING APPROACHES

- Only 140 connections (including the 14 businesses, public-serving and multi-use entities) used more than 125 GPD in December 2020\*
- As such, 452 connections already are using less than the 125 GPD recommended ration amount
- BCPUD staff therefore believes the 125 GPD per connection ration amount is achievable by all, or nearly all, of the residential customers in the community
- As previously mentioned, exception requests can be later considered by the BCPUD Board after a customer demonstrates a meaningful and sustained effort to achieve the ration amount

\* in January 2021, the number of connections using more than 125 GPD dropped to 122; as such 470 connections used less than 125 GPD that month





# MEETING OUTLINE

- Purposes of Meeting
- Underlying Water Supply Facts and Limitations
- Presentation of BCPUD Staff's Recommended Rationing Approach
- Consideration Alternative Rationing Approaches
- **Discussion**