

URBAN WATER INSTITUTE NEWSLETTER



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In Focus: Statewide Drought Triggers Preparedness, Response In The Bay Area

Water managers are acutely aware that the Water Year in California begins on the first of October. For many water professionals the message in Figure 1 below, expressed by State of California Department of Water Resources Assistant Deputy Director, John T. Andrews, sums up their sentiments.



Figure 1: San Luis Reservoir Snapshot 2021

Source: John T. Andrews, DWR, Presentation, BPC October 5, 2021

Andrews was the lead off speaker at the October 5, 2021, Bay Planning Coalition's Energy Water Summit virtual workshop.

Even though the world of water policymaking statewide has involved some world-class debates over many decades, drought impacts have occurred without differentiation throughout the state. The image in the photo below taken in 1976 of the Nicasio Reservoir in Marin county is something many Bay Area residents can still recall. It is also an image many water utilities hope to never see again. But DWR's Andrews shared historical and immediate data in his presentation that reinforced the observable, measurable impacts that climate change has already had on our water supplies. He reminded participants that the more we plan for the future the more we are confronted with the ongoing, persistent impacts due to climate change factors.

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Figure 2: Nicasio Reservoir, Marin County, 1976
Source: John T. Andrews, DWR, Presentation, BPC October 5, 2021

Throughout John Andrews' presentation he noted the seriousness of the current drought and shared the State of California's comprehensive measures, summarized below:



Figure 3: California DWR Drought Response Program 2021
Source: John T. Andrews, DWR, Presentation, BPC October 5, 2021

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Four urban water utilities in the Bay Area were also part of the Bay Planning Coalition's (BPC) Energy Water Summit virtual workshop on October 5, 2021. San Francisco Public Utilities Commission (SFPUC), Marin Municipal Water District (Marin Water), Santa Clara Valley Municipal Water District (Valley Water), and East Bay Municipal Water District (EBMUD) shared their plans and actions underway in their respective service areas to mitigate drought impacts.

One example, East Bay Municipal Water District's (EBMUD) program, is the feature in this newsletter edition.

East Bay Municipal Water District Drought Response 2021

The East Bay Municipal Utility District (EBMUD), established in 1923 and headquartered in Oakland California, serves high-quality drinking water for 1.4 million customers in Alameda and Contra Costa counties. EBMUD's wastewater system serves 740,000 customers and helps protect the ecosystem of San Francisco Bay.

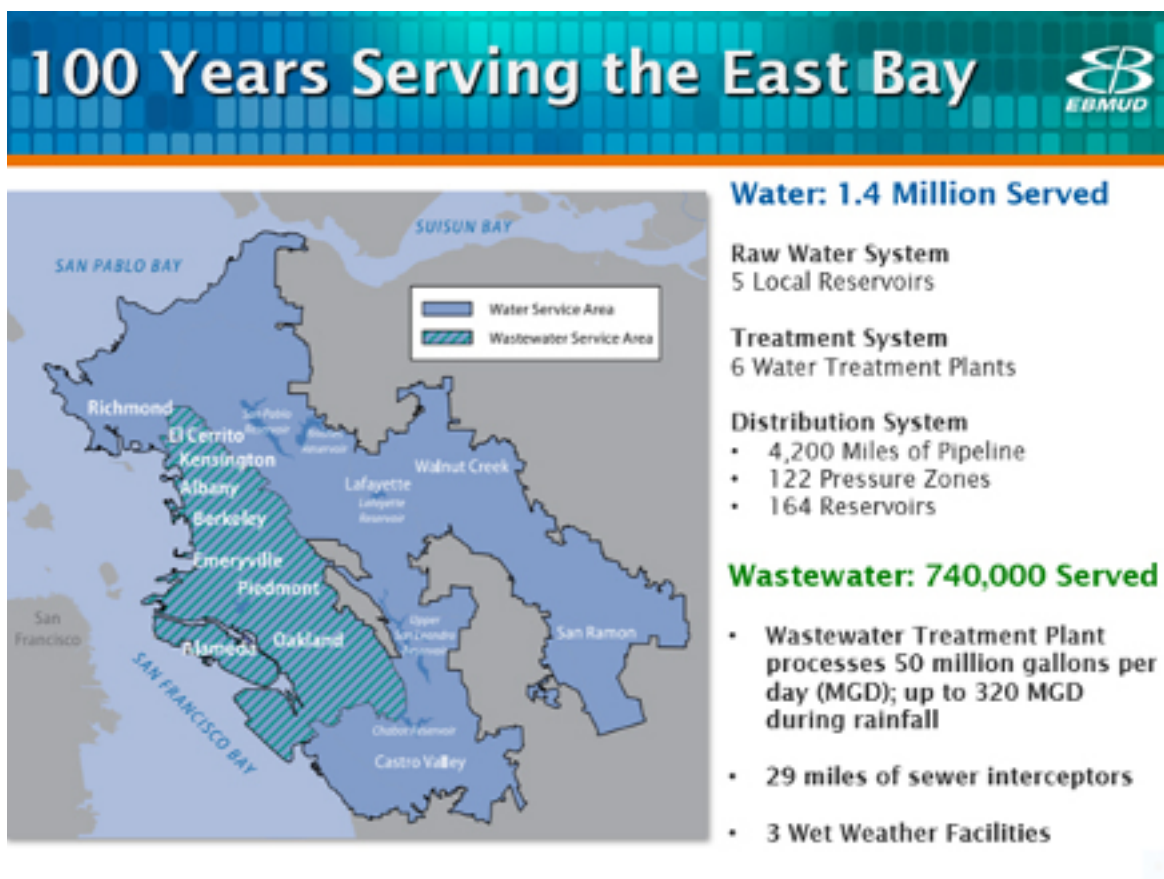


Figure 4: Overview of the EBMUD Service Area and System Components
Source: EBMUD Presentation, BPC Energy Water Summit, October 5, 2021

At the October 5, 2021 Energy Water Summit webinar for the Bay Planning Coalition, and summarized at the October 20, 2021 EBMUD Board meeting, General Manager Clifford Chan described the comprehensive and strategic drought preparedness and response program underway at EBMUD. The multifaceted program is based on, continuous updated assessments of water supplies; guidance from key district planning reports; collaboration with regional water entities; conservation declarations by the board of directors; outreach to the customers; development and initiation of drought response options; and implementation of a diversity of supply augmentation measures. It all begins with an understanding and awareness of the reliability of the district's water supplies.

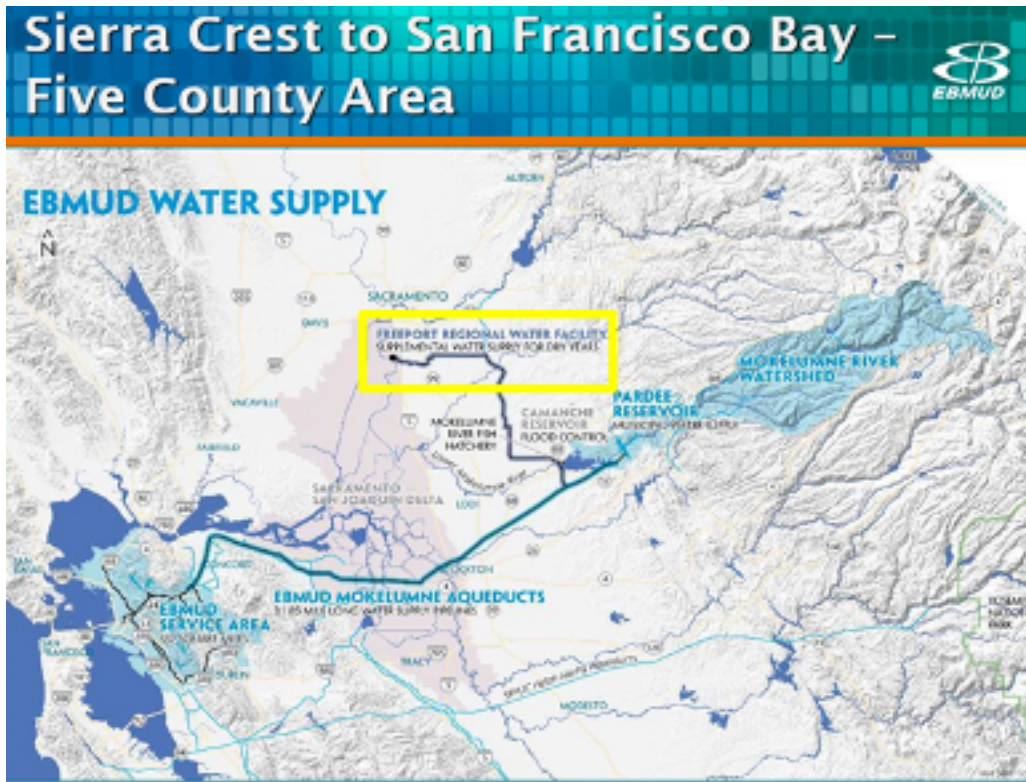


Figure 5: EBMUD Water Supply

Source: EBMUD Presentation, BPC Energy Water Summit, October 5, 2021

“We’ve planned and invested for decades to make our water supply resilient and now our plans are paying off,” said EBMUD Board President Doug Linney. “Ensuring reliable water supplies requires a diverse water supply portfolio including conservation, recycled water, and use of supplemental supplies – we’re doing it all.” (EBMUD website, news update)



Figure 6: EBMUD Water Supply Planning

Source: EBMUD Website

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The snow and runoff from the Mokelumne is the cornerstone of reliability for EBMUD, supplying 90% of the water supply. But those supplies are affected by drought. As a result, the district invested about \$500 million to construct the Freeport Regional Water Facility, completed in 2011. It is jointly owned with Sacramento County and was first used to augment supply during the historic 2014-2016 drought. Figure 7 below dramatically illustrates the value of diversifying supplies.

Investing nearly \$900 million over 50 years, including construction of the Freeport Project from the Sacramento River, visibly changed the water supply reliability picture for EBMUD. These actions help to prevent critically low water levels in their system.



Figure 7: Value of augmentation efforts to reduce critical low water levels in system reservoirs

Source: EBMUD Website

EBMUD staff members meticulously monitor and project available water supplies and their options, to guide and trigger implementation of their preparedness and response efforts. Known for their pro-active approach to water supply and reliability, at the April 27, 2021 meeting, the district Board of Directors voted to declare a Stage 1 drought shortage based on projections that runoff would fall below what is needed to refill EBMUD reservoirs this year. The board also voted to purchase supplemental water to complement the request for customers to achieve a 10% reduction in total water consumption district wide.

“This year has been the second driest year on record in our Mokelumne River watershed and the driest year on record in the East Bay,” said Board President Doug Linney. “Fortunately, we started last year well, and our customers continued saving water in our drought-prone region. However, we must take initial actions now to ensure we don’t face harder choices next year.” (EBMUD website, news update).

On October 4, 2021 EBMUD publicly announced, that as part of the drought response program the district would draw supplemental water from the Sacramento River, beginning that day. It was determined necessary to boost its Mokelumne River supplies for their customers.



Figure 8: Freeport Regional Water Facility

Source: EBMUD Presentation, BPC Energy Water Summit, October 5, 2021

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The district's plan is to pump 32,250 acre-feet (about 11 billion gallons) through the Freeport Regional Water Facility under its contract with the US Bureau of Reclamation (Bureau). The pumping will occur from October 2021 through February 2022. Even though the district contract with the Bureau is for 133,000 acre-feet, this year they only received a 25% allocation due to the dry conditions. Water conservation and regional partnerships are two of several components of the EBMUD drought preparedness and response program. The program is sensitive to and balances the demands for customer conservation with planned, strategic supply augmentations.

In addition to other regional supply augmentation options such as agreements with Contra Costa Water District and others, EBMUD adds to their water supply portfolio with recycled water. They have also embarked on a process of discovery regarding the potential feasibility for desalination options. The current EBMUD recycled water program is summarized in Figure 9. Plans to investigate and consider the future desalination potential are summarized in Figure 10.

- **Current capability: 9 million gallons per day**
- **Goal: 20 million by 2040**
 - Expansions
 - Additional refinery
 - Satellite plants
- **Focus on large irrigators and industrial uses**
- **Continue to evaluate advanced purification**

Project	Capability	Since
North Richmond	4.0	1996
Richmond Advanced Recycling Expansion	3.5	2010
San Ramon Valley	1.0	2006
East Bayshore	0.2	2008
Truck Program	0.01	2008



Key Takeaway

Continue to expand water recycling to offset drinking water use.

Figure 9: Summary EBMUD Recycled Water Program 2021
Source: EBMUD Website

- **2003: Regional partnership to study desalination**
- **Desalination limitations:**
 - High energy use
 - High operating cost
 - High salt brine disposal
- **Partners formed Bay Area Regional Reliability to consider other regional options before advancing desalination**



Key Takeaway

Continue to evaluate desalination as a long-term option but prioritize other water supply solutions with lower energy and operating costs.

Figure 10: Summary Investigation into Regional Desalination
Source: EBMUD Website

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Finally, the cost to purchase and deliver just this year's supplemental water for EBMUD is nearly \$15 million and is funded by budgeted operations costs. But the plans are in place for multiple management options with a diverse supply portfolio. EBMUD officials will continue pursuing additional water transfers for next year and will continue pursuing efforts to provide safe, reliable and sustainable water supplies to their service area, while supporting a healthy environment, and commitment to working collaboratively with their regional partners.

About the Bay Planning Coalition



The Bay Planning Coalition (BPC) is a broad coalition providing expert advocacy and facilitation to advance a strong economy that supports a sustainable environment within the San Francisco Bay and its watershed.

Founded in 1983, the Bay Planning Coalition is a non-profit, membership-based organization representing a broad spectrum of public and private entities collectively advocating for strong economic growth and environmental sustainability of the region. They work to navigate through the overlapping regulatory jurisdictions that touch the Bay to support sustainable growth, and they influence the development of sound regional policy and planning to build a more vibrant Bay Area.

John Coleman serves as Executive Director and CEO of the Bay Planning Coalition. He is a long-time elected member of the EBMUD Board of Directors and is a Past President of the Association of California Water Agencies (ACWA).



Ane Deister, Executive Director of UWI, is the Treasurer and member of the Board of Directors of the non-profit BPC organization. She is the author of this newsletter article.

Happy Thanksgiving From The Urban Water Institute

