EAST BAY MUNICIPAL UTILITY DISTRICT

DATE: November 6, 2025

MEMO TO: Board of Directors

THROUGH: Clifford C. Chan, General Manager CCC

FROM: Roberto C. Cortez, Manager of Water Operations RCC

SUBJECT: Follow-up Mokelumne Aqueduct Repairs

SUMMARY

In response to a request from the Planning Committee at its October 14, 2025 meeting this memorandum provides information on the District's resource requirements and capacity to respond to a potential failure of the Mokelumne Aqueducts.

DISCUSSION

The Mokelumne Aqueducts convey water supplies about 90 miles from Pardee Reservoir to the East Bay. On average, the aqueducts provide about 90 percent of the District's water supply. In droughts, the aqueducts also convey supplemental supplies from the Sacramento River from the Freeport Regional Water Project. The aqueducts are most vulnerable in the approximately 15-mile section spanning the Sacramento-San Joaquin Delta (Delta) because of geotechnical and flooding risks. The District has a number of strategies to mitigate an outage of the aqueducts including operational options, emergency response capabilities, and capital upgrades.

Operational Response to Mokelumne Aqueduct Failures

Alternative Source Water

A temporary loss of Mokelumne River supply can be mitigated with other sources. The District maintains up to six months of storage in local reservoirs (Briones, San Pablo, and Upper San Leandro) to provide an emergency supply (assuming 25 percent customer rationing). Additionally, there are ten intertie connections with the Contra Costa Water District (CCWD), Dublin San Ramon Services District, San Francisco Public Utilities Commission, and the City of Hayward. These interties can deliver up to 50 million gallons per day (MGD) of treated water to supplement supplies and help maintain service to customers. For raw water supply, the District and CCWD constructed a raw water intertie on Mokelumne Aqueduct No. 2 in the City of Brentwood (downstream of the Delta). The intertie can deliver up to 60 MGD of raw water from CCWD to the District's local reservoirs.

Mokelumne Aqueduct Interconnection Project

To strengthen operational flexibility and improve emergency preparedness, in 2013, the District constructed interconnections among the three aqueducts on both sides of the Delta. The interconnections allow the District to bypass segments of the aqueducts that may be damaged by a levee failure, earthquake, or other catastrophes. This allows for partial restoration of water supply while aqueduct repairs are completed.

Emergency Repair of Mokelumne Aqueducts

In 2006, the District completed the Aqueduct Emergency Response and Recovery Plan, which outlined initial response actions for repairing and restoring water flow following a major aqueduct failure in the Delta – potentially involving damage to all three aqueducts. If water supply from Pardee Reservoir to the service area is interrupted, the District's objectives are to:

1. Prioritize repair of Mokelumne Aqueduct No. 3 within six months
2. Repair the remaining aqueducts within 18 months

Recent emergency repairs on individual segments of Mokelumne Aqueduct Nos. 2 and 3 demonstrated that a broader repair spanning numerous segments is feasible within six months provided materials are available. Repairs to both buried and elevated sections of the aqueducts can generally be completed using standard pipeline repair and construction methods. Mokelumne Aqueduct No. 3 would be prioritized due to its newer construction, higher capacity, and superior seismic reinforcement. Similar repair methods would be utilized on Mokelumne Aqueduct Nos. 1 and 2 to achieve full restoration of water supply.

As part of its emergency preparedness practices, the District maintains an inventory of approximately 4,000 feet of large-diameter pipe and specialized fittings required for repairs. To expedite restoration, available materials from this inventory would be used to avoid procurement delays. However, certain components with unique sizes or configurations will need to be custom fabricated by vendors once the failure details are known. The lead time for fabrication of these specialized parts may be up to four weeks.

The District has the staff, expertise, and equipment to conduct most repairs. In the event of damage to one or more aqueducts, the District will assess the extent and nature of the failure to determine whether repairs can be completed by District staff or if a contractor is required. This decision will consider several factors, including staff availability, repair complexity, and the need for specialized expertise or equipment not available within the District. Several qualified contractors operate in the Bay Area and may be available to respond. To expedite the repair process, the General Manager and Board of Directors must declare a District emergency to authorize emergency procurement and contracting procedures. Mobilization of a contractor to start work can take as long as eight weeks.

In most cases, restoration of water supply from Pardee Reservoir to the service area can be accomplished within the District's six month goal. During this period, the District would rely on emergency water supplies stored in the local storage reservoirs, use treated water interties, and would require mandatory conservation from its customers.

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