East Bay Municipal Utility District | 375 11th Street, Oakland, CA 94607
Office of the Secretary | 510-287-0404
secoffice@ebmud.com | www.ebmud.com

PLANNING COMMITTEE
NOTICE OF TIME CHANGE

Date	Tuesday, October 13, 2026
Time	9:30 a.m.
Location	William "Bill" Patterson Boardroom, 2nd Floor 375 11th Street, Oakland, CA 94607

Notice is hereby given that the Tuesday, October 13, 2026 Planning Committee meeting of the Board of Directors has been rescheduled from 9:00 a.m. to 9:30 a.m. The meeting will be held in the Administration Building William "Bill" Patterson Boardroom at 375 11th Street, Oakland, California.

Dated: October 8, 2026

Rischa S. Cole

Rischa S. Cole
Secretary of the District

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Board of Directors April Chan • Luz Gómez • Andy Katz • Valerie D. Lewis
Jim Oddie • Joey D. Smith • Marguerite Young

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PLANNING COMMITTEE AGENDA

Date	Tuesday, October 13, 2026
Time	9:30 a.m.
Location	William "Bill" Patterson Boardroom, 2nd Floor 375 11th Street, Oakland, CA 94607

Please see appendix for public participation and accessibility instructions

Committee Members: Directors Valerie D. Lewis (Chair), Luz Gómez, and Marguerite Young

Roll Call

Public Comment: The Board of Directors is limited by State law to providing a brief response, asking questions for clarification, or referring a matter to staff when responding to items that are not listed on the agenda.

Determination and Discussion

1. Reservoir Reopening Update: Golden Mussel Protection (Workman)
2. Fiscal Year 2026 Annual Readiness Report (Briggs)
3. Fiscal Year 2027 Research and Innovation Update (Hannay)

Adjournment

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Board of Directors
April Chan • Luz Gómez • Andy Katz • Valerie D. Lewis
Jim Oddie • Joey D. Smith • Marguerite Young

APPENDIX

Public Participation - The public may attend Board meetings in-person or remotely online or by telephone.

Online:
https://ebmud.zoom.us/j/94576194030?pwd=dWZlc3hNU3JNUVBQYmNKWjJSNVZQdz09
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Public Comment - The EBMUD Board of Directors is limited by State law to providing a brief response, asking questions for clarification, or referring a matter to staff when responding to items that are not listed on the agenda.

The public may comment on any topic at the start of the meeting, during the public comment period.

- Public comment on agendized items is open when that item is before the board.
- Each speaker may speak for up to 3 minutes. Members of the public who comment through interpreters are granted additional time.
- Speakers are called in the order in which requests are received.

The Board President or Committee Chair has the discretion to amend public comment times.

In person
Fill out a speaker card, located at the boardroom entryway, and submit it to the Board Secretary. The Board President or Committee Chair will call your name when it is your turn to speak. At the podium, state your name and the topic you wish to speak on.

Online
Join online using the Zoom link on the website or agenda. Enter the meeting ID and access code when prompted. Use the "Raise Hand" feature when your name is called, turn on the microphone in Zoom and state your name and topic.

By phone
Dial the number listed on the website or agenda. Enter the meeting ID and access code when prompted. Press *9 to raise your hand. When your name is called, press *6 to unmute your phone. State your name and topic.
https://support.zoom.us/hc/en-us/articles/205566129-Raising-your-hand-in-a-webinar

Written comments

Written comments can be sent via email to SecOffice@ebmud.com. Comments should include the meeting date for which you want your comment recorded and whether the topic is on the agenda for that meeting.

Email comments should be submitted by 4:00 p.m. the day before the meeting.

All comments received before the meeting concludes will be accepted and included as part of the official public record.

Written comments become part of the public record and may be subject to the California Public Records Act.

Language and Accessibility Assistance

Board meetings are open and accessible to all members of the public. The William "Bill" Patterson Boardroom is wheelchair accessible. Contact the Secretary's Office at 510-287-0404 or ***SecOffice@ebmud.com*** ***at least 72 hours in advance*** *to request assistance with language interpretation, translation services and disability accommodations. The Secretary's Office will make reasonable arrangements to ensure accessibility. Some special equipment arrangements may require more than 72 hours advance notice.*

Document Availability

Materials related to an item on the agenda that have been submitted to the EBMUD Board of Directors within 72 hours prior to a regular meeting are available for public inspection in EBMUD's Office of the Secretary at 375 11th Street, Oakland, CA, during normal business hours, and can be viewed on our website at www.ebmud.com. Materials submitted during a regular meeting will be made available to the public by contacting the Secretary's Office at 510-287-0404 or Secoffice@ebmud.com.

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EAST BAY MUNICIPAL UTILITY DISTRICT

DATE: October 8, 2026

MEMO TO: Board of Directors

THROUGH: Clifford C. Chan, General Manager CCC

FROM: Michelle L. Workman, Manager of Natural Resources MW

SUBJECT: Reservoir Reopening Update: Golden Mussel Protection

SUMMARY

In late 2024, the highly invasive golden mussel was detected in the Sacramento-San Joaquin Delta for the first time in North America. The golden mussel poses a significant threat to aquatic ecosystems, water infrastructure, and water quality. To prevent the spread of the golden mussel, the District immediately suspended public boat launching at all of its recreational facilities until more information and guidance was developed. In spring 2026, San Pablo Reservoir and Camanche Reservoir South Shore boat launches were reopened with stricter inspection and quarantine requirements, while Lafayette Reservoir and Chabot Reservoir boat launches reopened to car-top vessels only. Pardee Reservoir and Camanche Reservoir North Shore boat launches remained closed, access to Briones Reservoir remained limited to special use permit only, and Upper San Leandro Reservoir remained closed to public boating. An update on the reopening for recreational boating at the Camanche Reservoir South Shore and San Pablo Reservoir in 2026 will be provided at the October 13, 2026 Planning Committee meeting.

DISCUSSION

In 2026, a key element of the reopening plan included the requirement that all trailered vessels undergo a thorough inspection and complete a 30-day quarantine before launching at District reservoirs. This quarantine period was enforced by attaching a metal band to the vessel and trailer after inspection that would be broken if the vessel launched at another water body. After a boat completed quarantine, District staff or contractors would inspect and remove the band and approve the vessel for launching. Vessels that already completed quarantine and were approved to launch did not have to repeat the quarantine process, but would have a return band applied, indicating the vessel had already been approved to launch at District reservoirs. Car-top vessels like kayaks and canoes did not need to quarantine but were inspected by District staff or contractors prior to launching.

The Watercraft Inspection and Decontamination (WID) software, a free vessel inspection database provided by the state of Colorado, was used to track the number of trailered vessels that were banded and approved for launching. The table below shows the number of bands that were applied and the number of boats launched at each location. The number of bands applied includes both quarantine and return bands applied as of September 20, 2026 but does not include the number of car-top vessels that launched.

Facility	Bands Applied	Trailered Boat Launches
Camanche Reservoir South Shore	2,681	2,122
San Pablo Reservoir	409	302
Total	3,090	2,424

Prior to the closure of recreational boating, Camanche Reservoir South Shore averaged 8,144 boat launches annually from 2020 to 2025. San Pablo Reservoir averaged 1,400 boat launches annually over this same period.

The reopening plan effectively managed the risk of spreading golden mussels while allowing private recreational boats to return to San Pablo Reservoir and Camanche Reservoir South Shore. Boats banded at either of the District reservoirs could launch at both reservoirs, but bands issued by other reservoir operators were not accepted. No significant changes are proposed to recreational boating in 2027 due to the success of the reopening plan and the continued risk from spread of the golden mussel across the state.

During the 2026 season, over 110 kayaks failed inspection for standing water at Camanche Reservoir South Shore and San Pablo Reservoir. Staff will refine the car-top vessel screening process and develop targeted messaging to visitors reinforcing the “clean, drained, and dry” message. Staff will also refine the process of recording inspection data in the WID vessel inspection database to ensure consistency between inspection stations.

NEXT STEPS

Camanche Reservoir South Shore opened to trailered recreational boats at the south shore boat launch on May 1 and closed October 1. San Pablo Reservoir opened to trailered recreational boats during its normal season beginning February 5, 2026 and will remain open through November 14, 2026. Staff will continue to evaluate the effectiveness of vessel screening and modify the process if needed. If conditions change, or new threats are identified, necessary actions will be taken, including closing reservoirs to boating.

CCC:MLW:asu

EAST BAY MUNICIPAL UTILITY DISTRICT

DATE: October 8, 2026

MEMO TO: Board of Directors

THROUGH: Clifford C. Chan, General Manager CCC

FROM: David A. Briggs, Director of Operations and Maintenance

SUBJECT: Fiscal Year 2026 Annual Readiness Report

SUMMARY

Policy 7.03 – Emergency Preparedness/Business Continuity requires the District to maintain an Emergency Preparedness Program to prepare for and actively manage emergency functions. The status of the program during Fiscal Year (FY) 2026 will be reviewed at the October 13, 2026 Planning Committee meeting.

DISCUSSION

The goal of the Emergency Preparedness Program is to prepare the District in advance of an emergency, ensure proper training of staff to effectively manage an emergency, and comply with related regulations. Throughout the year, staff participated in community meetings, received training, developed mutual aid partnerships, and updated emergency plans. Details of these activities are outlined in the attached FY 2026 Annual Readiness Report.

NEXT STEPS

Along with regular annual updates to emergency plans and training, the District aims to complete the following in FY 2027:

- Host a regional mutual aid preparation meeting and expand mutual aid partners
- Continue to train staff in emergency deployment of temporary bypass hoses
- Offer advanced Incident Command training (CS 400) in December 2026
- Implement new emergency notification and management software

CCC:DAB:sd

Attachment: Fiscal Year 2026 Annual Readiness Report

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ATTACHMENT

FISCAL YEAR 2026 ANNUAL READINESS REPORT

Actions taken by the District to prepare and manage emergencies are summarized in this Fiscal Year (FY) 2026 report.

Emergency Response

The District's response during an emergency is directed by the Emergency Operations Team (EOT). The EOT is staffed by District employees and guided by the Policy Group which consists of the Board of Directors, the General Manager, and the General Counsel. The Director of Operations and Maintenance, or their designee, serves as the Emergency Operations Director (EOD) and directs the functions of the EOT.

The EOT is activated by the EOD and may or may not correspond to a formal emergency declaration by the Board. The last major activation of the EOT under a Board-declared emergency occurred during the COVID-19 pandemic spanning from March 2020 to February 2023. The EOT has also been activated to manage various operational emergencies with many corresponding to a Board-declared emergency (e.g., repair to damaged wastewater interceptors). Currently, there is an active Board-declared emergency for an expedited repair on a wastewater interceptor in Alameda.

District personnel are contacted via an emergency notification system (Marconi) to support District operations during an emergency. District-wide notification drills are conducted twice each year. The last drill occurred in April 2026 with a 78 percent response rate. The EOT is actively working to upgrade the system to a cloud-based software platform. The upgrade is expected to go online by the end of calendar year 2026.

In addition to the Emergency Operations Center (EOC) in the Administration Building and the alternate EOC at the Walnut Creek Water Treatment Plant, the District has a mobile emergency command center (MECC) housed in a 28-foot trailer. Satellite internet service was added to the MECC in April 2026. This addition allows the mobile command unit to maintain connectivity when traditional internet services are unavailable during emergencies.

Community Support

The District actively collaborates with communities to plan for emergency water distribution if the District's pipelines are damaged following an earthquake or do not meet potable water standards. The District conducted outreach with the Alameda and Contra Costa County Fire Chiefs Associations focusing on site deployments and logistics for our Commodity Points of Distribution (CPOD) manifolds. County partners were provided with operational capacities and guidelines for locations where a manifold could be deployed. The trailers storing the manifolds are strategically stationed at the four service yards for

rapid deployment throughout the service area. The manifolds can be connected to the distribution system or a mobile water tanker. Alternative potable water at CPODs may also be provided through bottled water supplied by vendors or emergency services.

The District participated in an evacuation exercise with Richmond, San Pablo, and El Sobrante along with the West Contra Costa Fire Safe Council as part of a large-scale fire evacuation drill in May 2026. The drill tested the community's ability to evacuate during a rapidly spreading fire in western Contra Costa County. District staff educated the community on the importance of personal water storage for emergency preparedness.

On December 15, 2025, the District hosted its annual Fire Agency Forum, providing fire agencies within the service area an opportunity to review and discuss fire hydrant and water delivery concerns during emergencies. Hydrant testing and real-time hydrant service maps were among the topics discussed. The meeting was attended by members from Alameda County Fire Department, Alameda Fire Department, Albany Fire Department, Berkeley Fire Department, Contra Costa County Fire Protection District, Crockett Carquinez Fire Department, El Cerrito Kensington Fire Department, Oakland Fire Department, and San Ramon Valley Fire Protection District.

Board of Directors Standby Officers

Policy 7.03 - Emergency Preparedness/Business Continuity outlines how the Board of Directors designate Standby Officers to serve in their place should any Board member be deemed unavailable in an emergency. The policy allows each Board member to designate a minimum of two and no more than three Standby Officers. In 2026, the Board appointed two new Standby Officers. Currently, there are 14 Standby Officers. There is one vacancy in Ward 4.

Mutual Aid Preparation

The District is actively engaged in mutual aid preparation. District staff continue to serve on the California Water/Wastewater Agency Response Network Region II steering committee and on the advisory board of the California Governor's Office of Emergency Services Earthquake Early Warning System.

Through a multi-party agreement, the District continues to meet monthly with Los Angeles Department of Water and Power and the Las Vegas Valley Water District, and hold an annual site visit hosted by one of the agencies to ensure rapid recovery of the distribution system through mutual aid. This agreement may be expanded to include the San Franciso Public Utilities Commission (SFPUC) and the City of San Diego. District staff visited the SFPUC's service yard on October 10, 2025 to review emergency response resources and materials. Staff also participate in the Contra Costa County Mutual Aid Coordination monthly meetings and the Alameda County Emergency Managers Association quarterly meetings.

District staff regularly attend the Bay Area Urban Areas Security Initiative Emergency Management Working Group as well as the Training and Exercise Work Group meetings. Staff were in attendance for the Federal Emergency Management Agency (FEMA) Regional Interagency Steering Committee (RISC) meeting in July 2025 and January 2026. The purpose and role of the RISC is to maintain strong partnerships between FEMA and other agencies around the National Response Framework. Meeting topics are focused on coordinating preparedness, planning, and response; ensuring consistency in regional contingency planning and facilitating information sharing.

Emergency Plans Development

The District has 22 Business Continuity Plans (BCPs). Each plan is updated every two years and exercised annually (District KPI #23). In FY 2026, 15 of 15 BCPs were updated and 22 of 22 exercises were completed. Exercises are documented in After Action Reports, which provide follow-up actions to improve preparedness.

The District is migrating most business and operations applications and data into cloud-based services. Once the migration is completed in 2027, District business and operations applications will be significantly more resilient.

The District has 28 Site Specific Emergency Action Plans (SSEAPs). SSEAPs describe specific features that prevent or mitigate hazards and specific responsibilities in the event of an emergency. The plans also satisfy the Cal/OSHA requirement for an Emergency Action Plan and a Fire Prevention Plan. All 11 scheduled SSEAP updates were completed for FY 2026.

The America's Water Infrastructure Act (AWIA) of 2018 includes requirements for completing risk and resilient assessments (RRA) associated with a variety of potential hazards and updates to the Emergency Operations Plan (EOP) based on the results of the RRA. The last RRA was completed in FY 2025 and the EOP was updated in FY 2026. Updates to both the RRA and EOP are required every five years.

Emergency Planning and Training

On December 9, 2025, training was held for the Board of Directors on Emergency Response and Crisis Communications. The objective of the training was for the Board to understand the emergency management structure and response and recovery plans; recognize roles and best practices for communications and outreach; and gain experience by participating in an emergency response exercise. A similar training was provided for the Standby Officers on May 20, 2026.

In December 2025, ICS 300 - Intermediate Incident Command System (ICS) for Expanding Incidents training was provided to members of the EOT in leadership positions. The ICS

training requirements are documented in the District's Emergency Operations. The District will provide additional ICS training in December 2026 for EOT members in leadership positions.

The annual EOT exercise was conducted on March 17, 2026. This functional exercise focused on deploying emergency bypass hoses following a simulated magnitude 6.9 regional earthquake. The bypass hose connects damaged sections of the distribution system near earthquake fault zones and known landslide areas. In FY 2026, new bypass hoses, valves, and deployment equipment were ordered.

On September 3, 2026, as part of Emergency Preparedness month, a townhall presentation was held for all staff on "How EBMUD Prepares for and Responds to Emergencies." The presentation explained EBMUD's EOT structure, functions and coordination with other agencies for response to a major emergency.

In addition to the training referenced above, fire drills are regularly conducted across the District to practice the timely and orderly evacuation of personnel from our facilities.

Federal Regulatory Requirements Related to Dam Safety

The District maintains an Emergency Action Plan for Federal Energy Regulatory Commission (FERC) Project 2916, the Lower Mokelumne River Project. In compliance with FERC requirements, the District completed its annual FERC Emergency Notification Drill. The District exercised FERC notification alerts to downstream and regional stakeholders of the Lower Mokelumne dams using the District's emergency alert system. The annual drill strengthens coordination of FERC-required emergency responses with the District's EOT, which would manage an actual event. As part of the FERC requirements, between November 5-6, 2025 the District held Joint Emergency Action Plan Annual Seminar with the Calaveras Public Utility District, the Jackson Valley Irrigation District, and PG&E. First responder partners were in attendance which included the California Highway Patrol, Lodi Police and Fire departments, and CAL FIRE.

Public Safety Power Shutoffs

PG&E continued to utilize Public Safety Power Shutoffs (PSPS) in FY 2026 to prevent catastrophic wildfires. The District deploys and tests portable emergency equipment at critical pumping plants during the wildfire season to avoid impacts to operations during a PSPS event. In May, June, and July 2026, PG&E implemented three PSPS events. These events affected customers in surrounding areas, but no District customers and facilities were affected. In FY 2026, the District deployed 34 portable generators and pumps to mitigate loss of PG&E power. EBMUD receives advance notice of potential PSPS events from PG&E and monitors events through the PG&E PSPS portal.

EAST BAY MUNICIPAL UTILITY DISTRICT

DATE: October 8, 2026

MEMO TO: Board of Directors

THROUGH: Clifford C. Chan, General Manager CCC

FROM: Robert L. Hannay, Acting Director of Finance RLH

SUBJECT: Fiscal Year 2027 Research and Innovation Update

SUMMARY

Since the early years of the District, research and innovation have driven how the District meets challenges, solves problems, and makes effective use of resources. The District's research and innovation efforts draw on both the technical and operational expertise of District staff and partnerships with universities, research organizations, peer utilities, vendors, and other organizations. To address the growing scale and scope of challenges, the District is developing a more robust, systematic approach to applied research, innovation, and continuous improvement. This item will be discussed at the October 13, 2026 Planning Committee meeting.

DISCUSSION

A Strong Foundation

Research and innovation occur regularly throughout the District. For example, staff conduct laboratory and field research, pilot new technologies, and work with outside partners to address operational issues and infrastructure decisions. The District also has long-established relationships with organizations such as the Water Research Foundation (WRF) and more recent partnerships with the University of California, Berkeley (U.C. Berkeley) Center for Smart Infrastructure (CSI). In addition, there is frequent collaboration with peer utilities and technology providers. The District's recently expanded data science capabilities are creating additional opportunities to use information and data to better understand core challenges and develop new potential solutions.

Building on this foundation, staff have identified opportunities to make research and innovation efforts more impactful. A common framework for structuring exploratory work has been developed to measure what has been learned, share results, and determine when an approach should be expanded, modified, paused, or stopped. Adopting such frameworks

could unlock greater potential among staff at all levels, strengthening the District's ability to respond to current and future challenges.

Research and Innovation Are Producing Results

Creating value is critical to an effective research and innovation program, and the resources invested must support projects that address areas critical to the District's mission. Several recent projects illustrate the value of these efforts:

- At the Main Wastewater Treatment Plant, staff continue to conduct research to decrease nutrient levels discharged to the Bay by operating existing treatment processes differently. This work has already shown the potential to save the District hundreds of millions of dollars compared to alternative approaches to meeting nutrient discharge requirements.
- The District participated in a WRF research project on post-wildfire water quality impacts in distribution systems and potential mitigation approaches. This work produced a Concept of Operations plan for post-fire testing and recovery, which was used by the Los Angeles Department of Water and Power during its response to the 2025 fires.
- The District's partnership with U.C. Berkeley CSI began in 2020 and now includes multiple utility and industry partners. Groups from around the world have visited the CSI's testing facility in Richmond to see the innovative work happening in the East Bay. Current projects include pipeline failure testing, fiber-optic sensing, Mokelumne Aqueduct lining research, and unlined spillway modeling. This collaborative model allows the District and other partners to share cost and information and to leverage the expertise of U.C. Berkeley researchers.
- Data science is also expanding the District's ability to learn from its data . For example, staff are developing pipeline replacements models, building work order optimization tools, and supporting visualizations that enhance decision-making ability.

Additional examples of the District's research and innovation activities are included in the attachment.

Strengthening the District's Approach to Research and Innovation

The District continues to grow its research and innovation efforts through several important changes and initiatives. Key elements of this approach include:

- Expanding participation in research and innovation across departments and among staff at all levels.

- Increasing the number and range of ideas and potential solutions that are explored.
- Creating a clearer process for evaluating exploratory work, such as recognizing when to proceed, change direction, or stop.
- Aligning research and innovation activities with the District's strategic priorities and highest-value operational challenges.
- Expanding relationships with universities and research organizations to access expertise, facilities, and external funding.
- Strengthening connections with peer utilities, technology providers, consultants, contractors, and other industry partners to share learning and accelerate adoption of useful solutions.

Together, these efforts are intended to promote learning, collaboration, and exploration so the District can address major challenges with practical and scalable solutions.

A Broader Innovation Ecosystem

Research and innovation are collaborative activities. Infrastructure owners such as the District bring real-world challenges and operating experience; universities contribute research expertise; technology companies develop new tools and services; consultants and contractors help translate ideas into implementation; and regulators help identify emerging requirements and areas where new approaches are needed. Stronger collaboration allow participants to share costs, knowledge, and risk, and can help promising ideas move quickly from research and testing into practical application.

NEXT STEPS

Staff will continue to implement new research and innovation initiatives, with early focus on developing a common framework, identifying and prioritizing high-value opportunities, and strengthening connections among staff and with external partners. Staff will continue to refine the approach based on experience and will provide future updates to the Board.

CCC:RLH:brr

Attachment: Recent Research and Innovation Projects

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Project / Effort	Representative Theme	Collaboration Model	Key Partner(s)	Project Description
Mokelumne Site-Specific Probable Maximum Flood (PMF) and Probable Maximum Precipitation (PMP) Studies	Dam safety / capital avoidance	Multi-Partner: Utility + Government / Regulatory Agencies	Pacific Gas & Electric (PG&E); Federal Energy Regulatory Commission (FERC); California Division of Safety of Dams (DSOD)	East Bay Municipal Utility District (EBMUD) is working with PG&E to develop a Mokelumne-specific probable maximum precipitation/flood methodology to replace the National Weather Service's generalized Hydrometeorological Report No. 59 (HMR-59) approach used for dam safety planning. A site-specific approach could provide a more defensible understanding of extreme-flood risk and, depending on the results, avoid very large capital investments that may not be necessary.
Placer County Water Agency (PCWA) Long-Term Water Transfer	Water supply reliability	Multi-Partner: Utility / Public Agency + Government / Regulatory Agencies	PCWA; United States (U.S.) Bureau of Reclamation; California State Water Resources Control Board; Sacramento Water Forum	EBMUD and PCWA are developing a long-term water transfer that could provide supplemental supplies in drier years when PCWA releases water to benefit the lower American River. The arrangement could improve EBMUD drought reliability while also supporting environmental flow and temperature objectives in the American River.
Demonstration Recharge, Extraction and Aquifer Management (DREAM) Groundwater Banking Project	Water supply reliability	Multi-Partner: Utility/Public Agency + Other External Partners	North San Joaquin Water Conservation District; San Joaquin County; Eastern Water Alliance; participating landowners; Stockton East Water District (follow-on concept)	The DREAM Project piloted an interregional groundwater-banking approach in which EBMUD surface water was used in lieu of groundwater pumping in San Joaquin County, allowing groundwater to remain in storage for future use. Lessons from the pilot are now informing development of a larger, long-term groundwater banking program that could provide EBMUD supplemental drought supply.

Project / Effort	Representative Theme	Collaboration Model	Key Partner(s)	Project Description
Climate Vulnerability Assessment / Thousands of Scenarios	Water supply planning / climate	Internal EBMUD	Water Resources Planning and Water Operations staff	EBMUD is conducting a more robust climate vulnerability assessment of its interconnected water-supply models using thousands of possible future climate scenarios. The work expands beyond a small set of deterministic forecasts and is intended to improve long-term decisions about water supply, infrastructure, and resilience under uncertainty.
Forecast-Informed Reservoir Operations	Water supply / reservoir operations	Academic / Research Institutions	Center for Western Weather and Water Extremes (CW3E/Scripps); Desert Research Institute (DRI)	EBMUD is working with forecasting and hydrology experts to determine whether Forecast-Informed Reservoir Operations could be applied at Pardee and Camanche reservoirs. The effort is evaluating whether available forecasts, data, and operating tools could safely support more adaptive reservoir operations and improve water-management flexibility.
In-System Energy Generation Pilot	Energy / sustainability	Vendor / Technology Partner	InPipe Energy; California Energy Commission; PG&E	EBMUD is piloting technology that generates electricity from pressure already present in the water system, offsetting purchased energy and reducing greenhouse-gas emissions. The Piedmont installation is the first use of the technology in California and provides a real-world test of its operational and economic potential for broader application.
Rain-on-Snow Decision Support	Watershed forecasting	Multi-Partner: Research Institution + Government / Public Agencies	DRI; U.S. Geological Survey (USGS); PG&E; California-Nevada River Forecast Center; U.S. Bureau of Reclamation	EBMUD is partnering with external agencies and research organizations to improve monitoring and forecasting of rain-on-snow events in the Mokelumne watershed. The project includes expanded data collection and development of a continuous hydrologic model to improve water-resource and flood-related decision support.

Project / Effort	Representative Theme	Collaboration Model	Key Partner(s)	Project Description
Machine Learning Forecast for Mokelumne River Dissolved Oxygen	Environmental compliance / machine learning (ML)	Internal EBMUD	Fisheries & Wildlife staff	EBMUD is developing a machine-learning model to forecast dissolved oxygen at a location on the Mokelumne River. The model is intended to provide a reliable predictive tool where field monitoring has been problematic and to support more informed river-management decisions.
Narrative Reporting for Budget Book and Board Reporting	Budget / reporting automation	Internal EBMUD	Budget Office and Information Systems Department (ISD) staff	EBMUD is using Oracle's Enterprise Performance Management (EPM) Narrative Reporting tool to automate portions of the Budget Book and recurring management and Board budget reports. Though a small improvement, automated tables and reusable text and number variables reduce manual report preparation and make recurring financial reporting faster and more consistent.
Insertion Valves	Construction / operations continuity	Vendor / Technology Partner	Hydra-Stop	EBMUD has deployed insertion valves that can be installed on active pipelines without taking the main out of service. Strategically locating these valves can reduce the number and extent of future shutdowns, particularly for critical customers and business districts.
East Bayshore Water Quality Improvements Pilot Study	Recycled water / capital planning	Vendor / Technology Partner	Trussell Technologies, Inc.	EBMUD piloted reverse osmosis and breakpoint chlorination at the East Bayshore Recycled Water Project to evaluate ways to improve recycled-water quality and increase deliveries. The work generated operating and design data, but the District ultimately decided not to pursue full-scale implementation because of high upgrade costs and reduced projected demand.

Project / Effort	Representative Theme	Collaboration Model	Key Partner(s)	Project Description
Excavator-Mounted Ground Penetrating Radar	Construction safety / utility locating	Vendor / Technology Partner	RodRadar Ltd.	This project tested RodRadar's Live Dig Radar, an excavator bucket attachment with integrated ground-penetrating radar and an in-cab display that alerts operators to underground utilities during excavation. The approach brings locating information directly to the operator and is intended to reduce utility strikes, improve worker safety, and avoid construction delays or damage.
Automated Pipeline Materials Tracking	Pipeline construction / materials management	Internal EBMUD	Purchasing and Pipeline Construction staff	This project involved developing automated reports that connect pipeline project material lists with warehouse inventory and then flag potential shortages. The tool is being refined for easier access and user testing so multiple upcoming projects can be assessed together.
Hydraulic-Reel Emergency Bypass Hose Deployment	Emergency response / resilience	Internal EBMUD	Maintenance and Construction staff	This project is testing a new way to store and deploy large-diameter emergency bypass hoses on hydraulic reels mounted to loaders or backhoes. The approach could replace slower flake-box/forklift deployment and make emergency setup faster using equipment already available at District yards.
Central Contra Costa Sanitary District (Central San)-Dublin San Ramon Services District (DSRSD) EBMUD Recycled Water Authority (DERWA) Temporary Wastewater Diversion	Regional recycled water / supply reliability	Utility / Public Agency	Central San; DSRSD/DERWA	EBMUD, Central San, DSRSD, and DERWA have used a temporary diversion of Central San wastewater to augment recycled-water production for San Ramon Valley customers. The partnership provides additional supply during peak irrigation demand and is being evaluated for a longer-term arrangement.

Project / Effort	Representative Theme	Collaboration Model	Key Partner(s)	Project Description
Pump Station Energy Optimization	Energy / operating efficiency	Internal EBMUD	Wastewater Operations staff	Wastewater staff reviewed electric bills and operating patterns to identify pump stations with unusually high power costs and tested alternative control strategies. The analysis identified potential peak-shaving opportunities, but site-specific operational constraints have so far limited implementation.
Leak Characteristic Tracking in Work Orders	Water loss / regulatory data	Internal EBMUD	Asset Management staff	This initiative adds structured leak-size and duration information to the work-order system so District staff can better quantify real water loss. The data will support state reporting requirements and improve analysis of where leak-detection and pipeline-replacement resources should be focused.
Geographic Information System (GIS) Integration of Acoustic Leak Logger Data	Water loss / field analytics	Internal EBMUD	Maintenance & Construction Engineering and Water Conservation staff	The District is integrating acoustic leak-logger locations and readings into GIS so monitoring coverage and signals can be viewed spatially. The objective is better coordination between field crews and engineering staff and faster identification of areas needing follow-up.
Water Loss Analytics Dashboard	Water loss / performance management	Internal EBMUD	Water Conservation and Water Operations staff	This proposed dashboard would be built using Microsoft Power BI and would combine production, metering, leak, and water-audit data into a single view of water-loss performance. It is intended to reduce manual analysis and make trends and priority areas easier for managers and staff to identify.

Project / Effort	Representative Theme	Collaboration Model	Key Partner(s)	Project Description
Environmental deoxyribonucleic acid (eDNA) Monitoring	Environmental compliance / field efficiency	Multi-Partner: Vendor / Research Partner + Government / Regulatory Agency	Genidaqs; Cramer Fish Sciences	EBMUD is evaluating eDNA as an alternative or supplement to traditional watershed pond monitoring required under habitat agreements. The approach may reduce field effort and handling of listed species while still providing defensible presence/absence information.
Machine Learning for Fish Counting	Environmental monitoring / ML	Vendor/Technology Partner	Cramer Fish Sciences (CFS); Woodbridge Irrigation District (monitoring site)	EBMUD and Cramer Fish Sciences are developing and testing an automated fish-counting program for video collected at the Woodbridge Irrigation District fish ladder. The system uses object detection, segmentation, keypoint detection, tracking, and machine-learning classification to count and characterize fish. The 2025/26 field test showed close agreement on total passage but identified classification errors that are now being addressed with additional training data.
Captive Insurance Initiative	Risk management / insurance innovation	Multi-Partner: Vendor/Professional Services + Government/ Regulatory Agency	Captive manager; Actuarial, audit, legal and reinsurance partners	The District formed a single-parent captive insurance company, wholly owned by EBMUD and domiciled in Utah, to insure selected risks and access wholesale reinsurance markets. The approach is designed to stabilize insurance costs, improve control over coverage and claims, and build reserves that remain under EBMUD control rather than being paid entirely to commercial insurers.

Projects with the Center for Smart Infrastructure at U.C. Berkeley

Project / Effort	Representative Theme	Collaboration Model	Key Partner(s)	Project Description
Cement Mortar Lining Study	Aqueduct rehabilitation / materials	Academic / Research Institution	University of California, Berkeley (U.C. Berkeley) Center for Smart Infrastructure (CSI)	EBMUD and U.C. Berkeley are testing engineered cementitious composite (ECC) and fiber-reinforced cement mortar lining for the above-ground portions of Mokelumne Aqueducts 2 and 3. Laboratory thermal and cyclic testing, followed by field-scale fiber-optic monitoring, is intended to identify a more durable lining that can extend aqueduct life and reduce future maintenance.
Monitoring Settlement of the Mokelumne Aqueducts from Space Using Persistent Scatterer Interferometric Synthetic Aperture Radar (PS-InSAR)	Aqueduct monitoring / geohazards	Academic / Research Institution	U.C. Berkeley CSI	This project is evaluating satellite-based PS-InSAR and corner reflectors to remotely measure settlement and deformation of Mokelumne Aqueduct support structures in the Delta. If accurate and cost-effective, the approach could provide much more frequent monitoring than current ground surveys and help identify deteriorating anchors before failures or unplanned shutdowns occur.
Distribution Pipeline Likelihood of Failure (LOF) and Consequence of Failure (COF) Model Development	Pipeline asset management / risk analysis	Multi-Partner: Academic + Peer Utility	U.C. Berkeley CSI; Los Angeles Department of Water and Power (LADWP)	EBMUD and U.C. Berkeley are developing and validating data-driven models to better predict distribution-pipe deterioration and combine likelihood of failure with consequence of failure. The models will use deterministic, probabilistic, and machine-learning methods to produce pipe-level risk scores and improve long-term pipeline replacement decisions. LADWP is a designated research partner.

Project / Effort	Representative Theme	Collaboration Model	Key Partner(s)	Project Description
Unlined Spillway Channel Performance and Upgrades	Dam safety / spillway erosion	Multi-Partner: Academic / Research Institutions	U.C. Berkeley CSI; U.C. Davis (subaward)	The project is studying erosion in the unlined channels below the Pardee and Camanche spillways using historical records, unmanned aerial vehicle (UAV)-based Light Detection and Ranging (LiDAR) data and imagery, and hydrological-rock mechanical modeling. The research is intended to predict how the channels may erode under future flood conditions and identify practical surveillance, mitigation, and upgrade options.
Embankment Dam Fragility Curves and Post-Earthquake Response	Dam safety / seismic resilience	Multi-Partner: Academic / Research Institutions	U.C. Berkeley CSI; University of California Los Angeles (UCLA); Caltech/UCLA Community Seismic Network	EBMUD and university researchers are developing updated, site-specific fragility curves and post-earthquake inspection criteria for the District's dam portfolio. The work also includes geophysical testing and a pilot of low-cost accelerometer arrays to support faster, data-driven assessments of which dams require priority inspection after an earthquake.
Updating Empirical Pipeline Fragility Curves for Seismic Resilience Improvement of Water Systems	Pipeline seismic resilience	Multi-Partner: Academic + Peer Utility	U.C. Berkeley CSI; LADWP	This project will compile pipeline performance data from earthquakes in the U.S. and internationally to update empirical seismic fragility curves. These curves will be incorporated into U.C. Berkeley's Open-Source Seismic Risk Assessment (OpenSRA) application. The District will then use the OpenSRA tool to analyze EBMUD's system and use the results to support performance-based seismic planning and more resilient pipeline replacement decisions. LADWP is a designated partner.

Project / Effort	Representative Theme	Collaboration Model	Key Partner(s)	Project Description
Untethered Video Inspection of Sanitary Sewer Systems	Wastewater Inflow & Infiltration (I&I) / inspection technology	Academic / Research Institution	U.C. Berkeley CSI	EBMUD and U.C. Berkeley are improving the District's untethered 'Roly Poly Ball' sewer inspection approach so the device can better determine its location, velocity, and water depth while moving through sewer mains. Testing includes Long Range (LoRa) and Global Positioning System (GPS) extension technologies, high-resolution Micro-Electro-Mechanical Systems (MEMS) accelerometers, and image analysis, with the goal of more precisely locating and quantifying inflow and infiltration sources during wet weather.
Pipeline Performance in Landslide Zones	Pipeline resilience / landslides	Academic / Research Institution	U.C. Berkeley CSI	This project combines pipeline failure records with LiDAR, geology, subsurface information, satellite-based displacement data, and other geospatial datasets to better characterize landslide risk in El Cerrito and Kensington. The work will create a web-based 3D GIS tool and regional landslide model to help prioritize pipeline replacement, estimate likely ground movements, and inform resilient pipe and fitting selection.
Field Lok 350 Gasket Test	Pipeline materials / geohazard resilience	Multi-Partner: Academic + Vendor / Manufacturer	U.C. Berkeley CSI; U.S. Pipe	EBMUD and U.C. Berkeley are testing U.S. Pipe's Field Lok 350 restrained gasket through full-scale tension and four-point bending tests supported by finite-element modeling and fiber-optic sensing. The research will determine whether the lower-cost, more installation-efficient joint can be safely expanded from low-to-moderate geohazard areas into more challenging conditions. U.S. Pipe is a designated study partner.

Project / Effort	Representative Theme	Collaboration Model	Key Partner(s)	Project Description
Cured-In-Place Pipe (CIPP) State of Science Review	Pipeline renewal / trenchless rehabilitation	Academic / Research Institution	U.C. Berkeley CSI	Following EBMUD's pilot of CIPP using Aqua-Pipe in 2016-2018, the District decided to only use CIPP in a limited set circumstances but to continue to monitor the technology as it matures and to reconsider broader use in the future. This project is reviewing the current research and utility experience with structural CIPP liners for potable-water mains. The work focuses on long-term performance, service-connection failures, bond strength, installation practices, and testing gaps so EBMUD can make better-informed decisions about when and how CIPP should be used for pipeline renewal.

Data Science Projects

Project / Effort	Representative Theme	Collaboration Model	Key Groups Involved	Project Description
Service Yard Efficiency Optimization	Field operations / productivity	Internal EBMUD	Operations and Maintenance Department (OMD) Maintenance & Construction staff	Analyzing service-yard operations, including crew utilization, dispatch, and equipment use, to identify bottlenecks, reduce idle time, and improve field productivity. Based on the results, pilot tests will be conducted to assess recommended changes.
Public Affairs Analytics & Experimentation	Customer communications / analytics	Internal EBMUD	Public Affairs staff	Supporting Public Affairs with outreach analytics and experiment design, including A/B testing, to measure how effectively customer communications and campaigns reach and influence their intended audiences.
Call Center Log Topic Modeling	Customer service / natural-language processing	Internal EBMUD	Customer Service / Contact Center staff	Utilized natural-language processing (NLP) and topic modeling methods to analyze call-center logs and identify recurring customer issues and emerging trends. This analysis will help District staff understand why customers are contacting EBMUD and where service, communication, or process improvements may be warranted.
Improving Access to Work Order Data	Data infrastructure / automation	Internal EBMUD	OMD Asset Management Staff	Created an automated, reusable source of work-order data that makes it easier for District teams to analyze operations data, develop reports, and support future data science projects. Pulled raw source data out of the District's General Work Order (GWO) system using a variety of tools from Amazon Web Services (AWS). This work is supporting the Service Yard Efficiency Optimization project described above.

Project / Effort	Representative Theme	Collaboration Model	Key Groups Involved	Project Description
Pipeline Construction Throughput Optimization	Pipeline construction / productivity	Internal EBMUD	OMD Pipeline Construction and Engineering & Construction Division (ECD) Pipeline Design staff	Analyzing pipeline-construction workflows to identify bottlenecks and opportunities to improve throughput. The work is intended to support faster and more efficient delivery of pipeline replacement and construction work. For example, the optimization model being built could be used to improve estimation of project duration. Given the significant number of factors that can affect project duration, an improvement in estimation could have a significant impact on throughput.
Water Demand Forecasting	Water demand / predictive analytics	Internal EBMUD	OMD Water Operations staff	Developing models to improve forecasting of water demand and explain changes in consumption. Better demand forecasting can support revenue planning, water-supply planning, conservation analysis, and interpretation of changing customer-use patterns. This work expanded the data being used for this forecasting and used new analysis methods, including machine learning models.