**BOARD OF DIRECTORS**
**EAST BAY MUNICIPAL UTILITY DISTRICT**

375 - 11th Street, Oakland, CA 94607 Office of the Secretary: (510) 287-0440

# ***Notice of Time and Location Change***

## PLANNING COMMITTEE MEETING
## Tuesday, December 13, 2022
## 9:00 a.m.
***Virtual***

Notice is hereby given that the Tuesday, December 13, 2022 Planning Committee Meeting of the Board of Directors has been rescheduled from 9:15 a.m. to 9:00 a.m.

In accordance with Government Code section 54953(e), **this meeting will be conducted by webinar and teleconference only.** A physical location will not be provided for this meeting.

Dated: December 8, 2022

Rischa S. Cole

Rischa S. Cole
Secretary of the District

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# BOARD OF DIRECTORS
# EAST BAY MUNICIPAL UTILITY DISTRICT

375 - 11th Street, Oakland, CA 94607 Office of the Secretary: (510) 287-0440

# AGENDA
## Planning Committee
## Tuesday, December 13, 2022
## 9:00 a.m.
## ***Virtual***

## Location

In accordance with Government Code section 54953(e), **this meeting will be conducted by webinar and teleconference only**. A physical location will not be provided for this meeting.

***** Please see appendix for public participation instructions*****

*Committee Members: Marguerite Young {Chair}, Lesa R. McIntosh and Frank Mellon*

**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. Orinda Water Treatment Plant Disinfection and Chemical Systems Safety Improvements Project Update (Yoloye)
2. Upper San Leandro Water Treatment Plant Maintenance and Reliability and Upper San Leandro and Sobrante Water Treatment Plants Chemical Systems Safety Improvements Project Update (Yoloye)
3. Update on the Oursan Ridge Conservation Bank (Tognolini)
4. Advanced Metering Infrastructure Business Case Evaluation (Briggs)

**ADJOURNMENT:**

***Disability Notice***

*If you require a disability-related modification or accommodation to participate in an EBMUD public meeting please call the Office of the Secretary (510) 287-0404. We will make reasonable arrangements to ensure accessibility. Some special equipment arrangements may require 48 hours advance notice.*

***Document Availability***

*Materials related to an item on this agenda that have been submitted to the EBMUD Board of Directors within 72 hours prior to this meeting are available for public inspection in EBMUD's Office of the Secretary at 375 11th Street, Oakland, California, during normal business hours, and can be viewed on our website at www.ebmud.com.*

EBMUD

# APPENDIX

## Planning Committee Meeting
## Tuesday, December 13, 2022
## 9:00 a.m.

EBMUD public Board meetings will be conducted via Zoom.
*Board committee meetings are recorded, and live-streamed on the District's website.*

*Please visit this page beforehand to familiarize yourself with Zoom.*
***https://support.zoom.us/hc/en-us/articles/201362193-Joining-a-Meeting***

*Online* https://ebmud.zoom.us/j/94576194030?pwd=dWZlc3hNU3JNUVBQYmNKWjJSNVZQdz09
**Webinar ID:** 945 7619 4030
Passcode: 925293

*By Phone*
Telephone: 1 669 900 6833
**Webinar ID:** 945 7619 4030
Passcode: 925293
International numbers available: https://ebmud.zoom.us/u/kdmpbwwlg2

**Providing 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.

If you wish to provide public comment please:

- Use the raise hand feature in Zoom to indicate you wish to make a public comment https://support.zoom.us/hc/en-us/articles/205566129-Raising-your-hand-in-a-webinar
    - If you participate by phone, press *9 to raise your hand
- When prompted by the Secretary, please state your name, affiliation if applicable, and topic
- The Secretary will call each speaker in the order received
- Comments on **non-agenda items** will be heard at the beginning of the meeting
- Comments on **agenda items** will be heard when the item is up for consideration
- Each speaker is allotted 3 minutes to speak; the Board President has the discretion to amend this time based on the number of speakers
- The Secretary will keep track of time and inform each speaker when the allotted time has concluded

**Submitting written comments or materials**

- Email written comments or other materials for the Board of Directors to SecOffice@ebmud.com
- Please indicate the meeting date and agenda item number or non-agenda item in the subject of the email. Contact information is optional.
- **Please email by 4 p.m. the day prior to the scheduled regular meeting**; written comments and other materials submitted to the Board of Directors will be filed in the record.

**To *observe* the Planning Committee Meeting,**
**please visit:** https://www.ebmud.com/about-us/board-directors/board-meetings/

**EAST BAY MUNICIPAL UTILITY DISTRICT**

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DATE: December 8, 2022

MEMO TO: Board of Directors

THROUGH: Clifford C. Chan, General Manager CCC

FROM: Olujimi O. Yoloye, Director of Engineering and Construction OY

SUBJECT: Orinda Water Treatment Plant Disinfection and Chemical Systems Safety Improvements Project Update

## SUMMARY

This memo provides an update on construction of the Orinda Water Treatment Plant (WTP) Disinfection and Chemical Systems Safety Project, including information on the project purpose, organization of the project team, status of construction, the communication plan with the community, and an outlook of the construction in the next year. An update will be presented at the December 13, 2022 Planning Committee meeting.

## DISCUSSION

Water entering Orinda WTP is currently disinfected in the aqueducts prior to entering the WTP. This project will move the disinfection step to the end of the treatment process, after filtration. Moving the step will improve disinfection reliability and reduce the formation of disinfection by-products. This project also includes significant safety and reliability improvements to the chemical systems at the WTP.

### Scope of Work

Design for the project began in March 2018 and was completed in May 2021. On October 12, 2021, a construction contract was awarded to McGuire and Hester to construct temporary operations and maintenance facilities. On January 25, 2022, construction and construction support contracts were awarded to Flatiron West Inc., Arcadis U.S. Inc., Carollo Engineers Inc., and Stantec Consulting Services Inc. On February 8, 2022, equipment purchase contracts were awarded to Southwest Valve, LLC and G2 Metal Fab.

The scope of work includes a new disinfection facility, comprised of an underground ultra violet disinfection and chlorine contact basin (UV/CCB) facility and an above-ground maintenance and UV electrical building; a grounds maintenance building and associated parking area; new effluent piping and connections to the Claremont Tunnel and Los Altos No. 2 Pumping Plant;

new electrical buildings; a standby generator and fuel storage tank; modifications to the raw water channel; demolition of existing grounds maintenance and mechanical maintenance facilities; and new chemical storage and feed systems.

Project Team Organization

This is a complex project which requires a robust approach to organizing the project team. Numerous District, consultant, and contractor staff are working together to deliver this project. The project team will meet five overarching goals: safety, quality, schedule and cost, client satisfaction, and community relations.

The complexity of the project and five-year duration requires a high level of collaboration. The project team is actively participating in facilitated partnering, communication training, and dispute resolution, which is assisted by co-locating the design, construction, and contractor team at a shared project office at 25 Orinda Way in Orinda.

Construction Status

Construction of the temporary facilities at the District-owned North Orinda Sports Field to house Operations and Maintenance staff during construction are nearly complete. The last step is for PG&E to provide power to the new facilities, which is expected to be completed by spring 2023.

Improvements to the raw water control systems are underway to provide improved raw water flow control during construction and normal operations. These improvements require carefully orchestrated operational outages for the work to be completed in a safe manner while minimizing impacts to ongoing operations. These improvements will be completed in March 2023.

Site preparations, including demolition of the old maintenance buildings, relocation of conflicting site utilities, and removal of paving, tree stumps and roots are nearly complete. Preparatory work for excavation of the UV/CCB structure is underway, which includes onsite fabrication of the massive beams which will provide part of the excavation support system.

The first phase of the temporary chemical systems, which includes construction of a stand-alone chemical storage, containment, metering, and delivery system for two chemical systems, is underway. Once commissioning and training on the temporary systems is complete, staff will switch to the temporary systems.

Community Communication Plan

Education of stakeholders and the community about the need for and importance of the project is occurring through regular, in-depth interactions and messaging. These include public meetings, project brochures, tours, open houses, and interpretive signage outside the WTP. Staff are engaging with the community through school tours, events for young children, infrastructure

press releases to the entire service area, and online virtual tours. Tools to reach the widest audience include Nextdoor, Facebook, ebmud.com, Orinda Outlook, and Wagner Ranch School.

Next Year Construction Outlook

The excavation support system for the UV/CCB structure and three other deep excavations will begin in January 2023. This will involve mobilization of heavy construction equipment in December 2022, including two large drilling machines which will install an underground wall that will surround the excavations. This perimeter wall will support the soil and provide safety during excavation and construction of the extended underground UV/CCB structure.

The UV/CCB excavation will begin in spring 2023 and will take approximately nine months to complete. The excavation is a start and stop process to allow for the installation of intermediate wall supports and the tunnels from the UV/CCB excavation to the other three excavations. Construction of the UV/CCB structure within the excavation will begin in winter 2023/2024. This structure will take approximately 14 months to rise 65 feet from the bottom of the excavation to the ground surface.

Replacement of the first phase of the chemical systems, which includes replacement of chemical storage, metering, and delivery systems for two chemical systems, will begin in spring 2023. Once commissioning and training of the operators to use the systems is complete, operations will switch from the temporary systems to the new systems. This first phase will be completed in winter 2023/2024.

**NEXT STEPS**

Construction of the remainder of the improvements will continue and the next update to the Planning Committee will be in December 2023. Construction is expected to be completed by spring 2027.

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**EAST BAY MUNICIPAL UTILITY DISTRICT**

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DATE: December 8, 2022

MEMO TO: Board of Directors

THROUGH: Clifford C. Chan, General Manager CCC

FROM: Olujimi O. Yoloye, Director of Engineering and Construction OY

SUBJECT: Upper San Leandro Water Treatment Plant Maintenance and Reliability and Upper San Leandro and Sobrante Water Treatment Plants Chemical Systems Safety Improvements Project Update

## SUMMARY

This memo provides an update on the Upper San Leandro (USL) Water Treatment Plant (WTP) Maintenance and Reliability and USL and Sobrante WTPs Chemical Systems Safety Improvements Project, including information on the final design, community outreach, and upcoming items for Board consideration. Staff will provide an update at the December 13, 2022 Planning Committee meeting.

## DISCUSSION

USL WTP is critical to District operations especially during droughts. Alternative water supplies, such as Freeport Project Water, currently can only be treated at USL and Sobrante WTPs. Additionally, reliable operation of the USL WTP is critical during planned and emergency outages, such as the upcoming outage of the Orinda WTP. The USL WTP Maintenance and Reliability Project has been combined with the USL and Sobrante WTP Chemical Systems Safety Improvements Project (CSSIP) to reduce construction costs and minimize the impact to operations. The CSSIP will improve safety for operations and maintenance staff and improve reliability and maintenance of the chemical systems.

The capacity of the USL WTP is currently limited to 45 million gallons per day (MGD) during periods of poor water quality, which results in shorter filter run-times and limitations on the spent wash water and solids handling system associated with the City of Oakland's sewer discharge requirements. The project will remove these limitations to allow reliable operation at the plant's permitted capacity of 60 MGD. The project will also improve seismic reliability and provide water savings by releasing a more concentrated discharge to the sewer and sending a larger volume of reclaimed water back to the head of the plant, resulting in an estimated reduction in water loss of approximately 600-700 acre-feet per year, which is equivalent to approximately 0.5 MGD.

The scope of work includes replacement of the raw water control valve; addition of a fifth stage of flocculation; replacement of flocculation baffles; a new sedimentation basin cable-vac system; improvements to the spent wash water reclaim and solids handling systems; replacement of the 100-year old chlorine contact basin; major electrical distribution system improvements, including a new main plant switchgear and unit substations; and improvements to the chemical systems at both the USL and Sobrante WTPs. The project also includes elements outside of the WTPs such as replacement of the deteriorated USL Clearwell roof, electrical improvements to the Oak Knoll/Field Pumping Plant, and the addition of a seismic accelerometer at the USL reservoir outlet tower.

Completion of Prequalification of General Contractor and Subcontractors

Construction methods critical to project success, including shoring and medium-voltage electrical work, require contractor specialization and experience. To reduce project risk and potential impacts to plant operations, the District prequalified general contractors and subcontractors. A similar approach was successfully implemented for electrical subcontractors for previous District projects. This process resulted in a list of seven prequalified general contractors, eight excavation subcontractors, and seven electrical subcontractors.

Engineering Services During Construction (ESDC) Agreement

Due to the size and complexity of the project, substantial ESDC will be necessary for successful project completion. The majority of the ESDC work will be performed by staff, as the engineer of record for the USL WTP Maintenance and Reliability portion of the project. However, an ESDC agreement with the engineer of record for the CSSIP is needed for review and approval of submittals and responses to requests for information.

California Environmental Quality Act and Community Outreach

The project was included in the Water Treatment and Transmission Improvements Project (WTTIP) Environmental Impact Report (EIR) that was certified in December 2006 under Board Resolution No. 33576-06. Staff prepared an Addendum to the WTTIP EIR in April 2021 that addressed project changes developed during detailed design. The project changes did not result in new significant impacts or a severity of previously identified impacts. The same applicable mitigation measures presented in the certified WTTIP EIR will be implemented for the project. Community engagement and outreach was completed in May and December 2022, including postcards that were mailed to local residents announcing the project. A dedicated project website was also created and individual coordination was conducted with adjacent neighbors. A community meeting to discuss the project will be held in March 2023, and a public open house will be held at the USL WTP in April or May 2023 prior to start of construction.

Community concerns are anticipated to be similar to those received on other District WTP projects and include traffic and dust impacts, construction and operational noise, and construction duration. Mitigation measures for all anticipated community concerns have been identified and are included in the contract documents. Examples of mitigation measures that will be part of the project include a thorough traffic control plan; tree mitigation measures; landscaping to provide visual barriers, required to be planted within the first year of construction; and noise mitigation requirements, including a sound wall surrounding the USL WTP.

**NEXT STEPS**

The next steps and scheduled milestones for award are as follows:

| | |
|---|---|
| Open bids | January 11, 2023 |
| Award construction contract | February 14, 2023 |
| Authorize ESDC agreement with Stantec | February 14, 2023 |
| Award for Experion controls cabinets | February 14, 2023 |
| Start Construction | Late spring 2023 |

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**EAST BAY MUNICIPAL UTILITY DISTRICT**

DATE: December 8, 2022

MEMO TO: Board of Directors

THROUGH: Clifford C. Chan, General Manager CCC

FROM: Michael T. Tognolini, Director of Water and Natural Resources MTT

SUBJECT: Update on the Oursan Ridge Conservation Bank

## SUMMARY

The District established the Oursan Ridge Conservation Bank (Bank) in 2017 to preserve in perpetuity 429.9 acres (or about 1.5 percent of the District's East Bay Watershed) to protect and enhance habitat for the California red-legged frog (CRLF) and Alameda whipsnake (AWS) and preserve onsite biodiversity. A Conservation Bank Enabling Instrument (CBEI) was executed in April 2017 between the District, U.S. Fish and Wildlife Service (USFWS), and the California Department of Fish and Wildlife (CDFW). Revenue generated from the Bank is used to purchase watershed land to protect the District's water quality. Recently, the Bank generated enough revenue to fully fund the Bank's Endowment Fund. This memo provides an update on the status of the Bank and the Endowment Fund. This item will be presented at the December 13, 2022 Planning Committee meeting.

## DISCUSSION

The Bank is composed of oak woodland, open grasslands, and scrub-shrub vegetation as well as various wetland features including ephemeral and intermittent streams, seasonal wetlands, perennial ponds, and freshwater seeps. These natural features are the habitat for threatened CRLF and AWS. Per an Interim Management Plan for the Bank, EBMUD biologists and rangers monitor, manage, and maintain these natural resources. Annual reports are filed with the regulatory agencies.

All 429.9 acres of the Bank are available as transferrable credits for third-party purchases. Credits developed at a conservation bank can be used to fulfill offsite compensatory mitigation requirements by the bank owner or other public or private entities; there is an open market for these credits and the price for credits is set by the bank owner.

Initial revenue from credit sales have been used to seed an Endowment Fund, held in trust by the non-profit Wildlife Heritage Foundation, under an Endowment Agreement. Once fully mature, the Endowment Fund will cover the District's long-term cost for monitoring and management of

the Bank. Initially set at approximately $1.26 million; the Endowment Fund target has risen with the consumer price index changes to approximately $1.5 million.

To date, staff has completed 22 transactions, selling 65 of the 429.9 credits. The revenue from credit sales is $2.4 million. Staff have begun the process of completing the funding of the Endowment Fund. Staff will continue to sell the remaining 365 credits and deposit revenue generated into the District's "watershed lands" fund per Policy 4.21, Land and Conservation / Mitigation Credit Sales – Use of Funds. The watershed lands fund will be seeded with approximately $900,000 remaining after fulfilling the Endowment Fund. Staff currently estimate the value of remaining credits at $18 million, but at the current rate of sales it could take decades to sell the remaining credits.

**NEXT STEPS**

In early 2023, staff will fully fund the Endowment Fund held by the Wildlife Heritage Foundation. Staff will continue to look for opportunities to purchase properties within or adjacent to the East Bay and upcountry watersheds to protect water quality and biological diversity or preserve open space and support recreational opportunities.

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**EAST BAY MUNICIPAL UTILITY DISTRICT**

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DATE: December 8, 2022

MEMO TO: Board of Directors

THROUGH: Clifford C. Chan, General Manager CCC

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

SUBJECT: Advanced Metering Infrastructure Business Case Evaluation

## SUMMARY

Over the past year, the District evaluated a variety of expanded Advanced Metering Infrastructure (AMI) scenarios to determine the benefits and financial cost. Implementing a service-area wide AMI system is preliminarily estimated to cost $185 million with payback periods ranging from 14 to 17 years. Implementing a system over a smaller portion of the service area would substantially lower cost and may produce some of the benefits of a full-scale AMI system. The findings of the consultant's study will be presented at the December 13, 2022 Planning Committee meeting.

## DISCUSSION

An AMI system is composed of smart meters, collectors, and software to remotely collect customer usage data, integrate with billing software, and allow staff and customers to monitor water use in real-time. The District has taken a measured approach to AMI implementation and currently has approximately 20,000 meters throughout the District's service area (about 3,000 installed on the largest commercial accounts and 17,000 on residential accounts) that are read using seven AMI collectors (i.e., AMI antennas mounted on towers).

Benefits from AMI include the potential for increased water conservation and reduced operating and water supply costs, better customer service, faster leak detection for customer plumbing and lower leak adjustment credits, better data to size distribution facilities, and reduced meter reading costs. In drought years, water conservation is valued at the cost of supplemental water supplies and in non-drought years, water conservation is valued at the District's customer retail unit cost.

### Service-Area Wide Implementation

Two full AMI systems were analyzed, one using a vendor-provided fixed network and one using a cellular network. The fixed network system would require about 50 to 500 additional towers, depending on the vendor. Using a cellular network would increase meter costs but would reduce costs associated with tower construction and neighborhood opposition.

The estimated 20-year present value for each scenario was calculated with costs, benefits, and payback periods. Costs include District labor, vendor services, software support, and construction. Ongoing operational costs and maintenance, including meter replacement, are also included. AMI systems are dependent on proprietary software and hardware in a quickly evolving technological area. Considering this and the 20-year evaluation period, costs for upgraded components were included. Many AMI components such as batteries must be replaced within 10 to 20 years. Based on these assumptions, the preliminary estimated costs are between $165 million and $185 million with payback periods between 14 and 17 years.

Implementing a service-area wide AMI system would also require a significant number of temporary positions for the planning, design, and construction phases. Depending on the duration of the construction phase, approximately 20 to 80 new positions would be required. After implementation, the number of staff would roughly be the same although staff numbers in certain classifications may shift. For example, fewer meter reader positions would be partially offset by more positions in AMI maintenance.

**Partial AMI System Implementation**

In addition to the service area wide implementation, two partial systems were analyzed. The first system represents the District's existing pilot AMI system – about 5 percent or about 20,000 of the District's customers including 3,000 large industrial and 17,000 residential accounts. The second partial system assumed 20 percent or about 80,000 of the District's customers would be equipped with AMI meters including all commercial, industrial, institutional, and higher-use residential customers.

Staff will explore how the data from partial systems can be used to make general conclusions about water use at the neighborhood scale. In this way, some of the benefits of a full-scale AMI system could be achieved with a partial system at substantially lower cost. Implementation costs for partial systems are proportionally lower. The District's existing AMI system would require $0.5 million annually to operate. The larger system (covering 20 percent of accounts) is estimated to cost about $22 million for initial installation and $1.5 million for annual operation and maintenance.

**AMI and Water Conservation**

Implementation of AMI could be a component of the District's water conservation program as statewide strategies and regulations are developed. Studies are very limited, but some evidence suggests that implementation of AMI could increase water conservation by up to 4 percent[1].

Urban water use efficiency policy in California is driven by a variety of laws and regulations, and the water use objectives are an aggregation of multiple water use efficiency components,

[1] This estimate is based on the District's study with the University of California, Davis conducted in 2019 and 2020 when drought restrictions and drought messaging were not active.

including standards for residential use (indoor and outdoor), commercial use, and water loss. Adjustments and variances to the targets are allowed at the discretion of the State Water Board (or regulating agencies). Therefore, water agencies have discretion to invest in efficiency components if the overall target is met. Additional water conservation achieved through AMI or any other investment and associated implementation costs will be considered in this context.

**NEXT STEPS**

The financial benefits of an AMI system will continue to be evaluated. Following Committee feedback, staff will explore and present additional AMI options and will share the financial benefits analysis with the Board at the Long-Term Water Supply Workshop in February 2023.

CCC:DAB:sd