BOARD OF DIRECTORS
EAST BAY MUNICIPAL UTILITY DISTRICT

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

Notice of Location Change

PLANNING COMMITTEE MEETING
Tuesday, July 14, 2020
9:15 a.m.
*****Teleconference*****

Notice is hereby given that due to COVID-19 and in accordance with Alameda County Health Order 20-14a (issued June 18, 2020), and with the Governor's Executive Order N-29-20 which suspends portions of the Brown Act, the Tuesday, July 14, 2020 Planning Committee Meeting **will be conducted via teleconference only**. In compliance with said orders, a physical location will not be provided for this meeting. These measures will only apply during the period in which state or local public health officials have imposed or recommended social distancing.

Dated: July 9, 2020

Rischa S. Cole

Rischa S. Cole
Secretary of the District

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AGENDA
Planning Committee
Tuesday, July 14, 2020
9:15 a.m.

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Committee Members Doug Linney {Chair}, Lesa R. McIntosh and Frank Mellon will participate via teleconference

Public Participation

***Dial* 855-369-0450 to participate via telephone;**
***Enter* participant pin 49-281-364 # when prompted**

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. ***If you participate via telephone and wish to speak on agenda OR non-agenda items you will be asked to:***

- State your name, affiliation if applicable, and topic
- The Secretary will compile a list of those who wish to make public comment and will call each speaker in the order received
- The Secretary will keep track of time and inform each speaker when his/her allotted time has concluded
- Each speaker will be allotted 3 minutes to speak; the Committee Chair has the discretion to amend this time based on the number of speakers

DETERMINATION AND DISCUSSION:

1. Pipeline Rebuild Program Update

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.

EAST BAY MUNICIPAL UTILITY DISTRICT

DATE: July 9, 2020

MEMO TO: Board of Directors

THROUGH: Clifford C. Chan, General Manager CCC

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

SUBJECT: Pipeline Rebuild Program Update

INTRODUCTION

In 2015, the District began to increase the replacement rate for distribution pipelines and created a sustainable pipeline renewal program called Pipeline Rebuild. The four-year pilot phase was successfully completed in 2019, culminating in the Pipeline Rebuild Pilot Report (Pilot Report) which documents findings, conclusions, and recommendations to guide the District's long-term pipeline replacement strategy. This memorandum provides an overview of findings and recommendations from the Pipeline Rebuild Pilot Program (Pilot Program), accomplishments in Fiscal Year 2020 (FY20), and goals and plans for FY21. Staff will provide an update at the July 14, 2020 Planning Committee meeting.

DISCUSSION

The Pilot Program was launched to test, evaluate, and refine alternative approaches to completing pipeline replacement projects and included the addition of 35 positions. In the FY20/21 budget, the Board approved an additional 38 positions to continue the ramp-up of the pipeline replacement rate. Overall, the District added four new pipeline crews, bringing the current total to 11 crews, and has steadily increased its pipeline replacement goal from 10 miles per year prior to the start of the Pilot Program to 17.5 miles per year in FY20. The District met or exceeded the planned goal every year.

In addition to achieving the short-term goal of increasing the annual replacement rate, the Pilot Program also completed several studies with a focus on efficiency, cost reduction, productivity, and safety. Major areas of study included pipeline material selection, pipeline project prioritization, streamlining design, and pipeline crew configurations. Each study was planned, reviewed, refined, and documented with findings and recommendations, all of which are summarized below and included in the Pilot Report.

- Standardizing new hazard-resilient materials, which include Ductile-Iron and iPVC pipe. These pipe materials can better withstand ground movement from moderate seismic

events, landslides, and liquefaction expected in the District's service area. Staff continues to evaluate Earthquake-Resistant Ductile Iron Pipe and other earthquake-resistant materials to increase reliability in areas susceptible to greater geologic hazards.

- Selecting and prioritizing replacement of the worst pipes to maximize the effectiveness of the Pilot Program. Staff refined the pipe selection methodology using both a risk-based approach and advanced modeling and machine learning. Staff utilized likelihood of failure scores to screen, select, and cluster replacement projects and then integrate machine learning to blend predictive analytics with main break data.

- Developing methods to streamline the planning, design, and construction process. Staff reduced the level of survey activity, coordinated replacement projects with other utility work and city and county planned paving projects, and further developed the concept of designing a resilient pipe network.

- Evaluating flexible crew configurations and matching the right level of skill and personnel needed to address the scope of work. Flexibly staffing pipeline crews showed gains in efficiencies, higher productivity, and lower costs than traditional fixed pipeline crews. Efficiencies included a reduction in labor hours across the construction process, increases in pipe installed per day, and improvements in service/hydrant transfers per day.

The Pilot Report documented lessons learned and best practices, and made recommendations to strengthen teamwork and collaboration and scale-up proven innovations. In FY20, Pipeline Rebuild transitioned from the Pilot Program to production mode while maintaining a focus on improving workflows and gaining efficiencies. New business practices and improvements recommended in the Pilot Report were embedded into workflows and several recommendations were successfully scaled up. Metrics related to cost, production, community impacts, and safety were evaluated for pipeline replacement projects to further refine processes and guide future plans. The Pilot Report also identified upcoming challenges and opportunities, including additional areas for improvement going forward. Future strategies and needs include scaling up additional innovations and change management across District workgroups, taking advantage of new opportunities with technology and data, and increasing work/storage space.

NEXT STEPS

In FY21, a 12th pipeline crew will start as the District works towards the goal of replacing 20 miles of pipe per year. The District's long-term plan is to increase the pipeline replacement rate at a measured pace, install more hazard-resilient pipeline materials, support water loss strategies related to leak detection and pressure management, continue to collect metrics and evaluate performance indicators, and collaborate internally with District stakeholders to strengthen

teamwork. To support this increase in work, continued use of Fully Maintained & Operated services such as dump truck, flagging, and welding will be needed. The five-year Capital Improvement Program budget anticipates pipeline replacement rates of 20 miles in FY21/22, 22.5 miles in FY23/24, and 25 miles in FY25. These planned pipeline replacement rates and associated staffing levels will continue to be evaluated and refined, as needed.

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