



**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, July 10, 2018
9:15 a.m.
Training Resource Center**

(Committee Members: Directors Mellon {Chair}, Linney and 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. Lead Service Line Inventory (Chan)
- 2. Richmond Advanced Recycled Expansion Waste pH Caustic Injection System (White)
- 3. Alameda Siphons Cleaning (White)
- 4. Update on San Francisco Bay Nutrient Efforts (White)
- 5. Environmental Consultant for Renewal of Routine Maintenance Agreements (Briggs)

ADJOURNMENT:

Disability Notice

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EAST BAY MUNICIPAL UTILITY DISTRICT

DATE: July 5, 2018

MEMO TO: Board of Directors

THROUGH: Alexander R. Coate, General Manager *ARC*

FROM: Clifford C. Chan, Director of Operations and Maintenance *CCC*

SUBJECT: Lead Service Line Inventory

INTRODUCTION

Senate Bill 1398 (SB 1398) required public water systems to compile an inventory of lead service lines in use in its distribution system. Under SB 1398, public water systems are required to complete this inventory and identify any areas that may have lead service lines in use by July 1, 2018. The District has completed its inventory, with a focus on the years between 1940 and 1950, and did not find any known lead service lines in use or identify any areas that may have lead service lines in use. This information was submitted to the State Water Resources Control Board Division of Drinking Water (DDW) in June 2018. The review of paper records will continue for the remaining years with completion by July 1, 2020. This item will be presented at the July 10, 2018 Planning Committee meeting.

DISCUSSION

The District has 372,873 service lines, often referred to as “taps.” Service lines connect water meters to the water mains. In March 1989, prior to the adoption of the Lead and Copper Rule (LCR), the District initiated a program to find and replace lead service lines, and hundreds were replaced as part of this program. Despite this effort, District crews still occasionally found and replaced lead service lines in the course of regular repair work. Following adoption of the LCR, in 1994, the District completed a required corrosion control study, which was later updated in 1997. The study noted that the District had implemented a corrosion control program in the 1930s to protect the distribution system. In 1999, the State determined that the District’s corrosion control program met the requirement of the LCR. Data collected from the distribution system confirm that the District’s corrosion control program remains effective.

In March 2016, in anticipation of SB 1398, the District began a review of and process to inventory its service line materials. The District does not have a single database of service line materials. Instead, information about service line materials is stored on paper tap records and in various databases. SB 1398 has two deadlines. By July 1, 2018, public water systems are required to complete an inventory of known lead service lines in use and identify areas that may

have lead service lines in use. If lead service lines are known or suspected, then by July 1, 2020, public water systems must provide a timeline to replace all lead service lines.

Most lead service lines were installed at the District between 1940 and 1945 due to a shortage of copper during World War II. District staff has reviewed more than 47,000 paper tap records which include service lines installed during this period and through 1950. The review identified 19 lead service lines that were confirmed to be lead in the field. Those service lines have been replaced. No additional lead services have been identified since November 2017. In June 2018, the District submitted its lead service line inventory to DDW as part of the electronic annual report. The submittal noted that the District has no known lead service lines or areas that may have lead service lines in use. However, the District does have approximately 2,275 galvanized services, which often have short sections of lead piping (or “pig tails”) that connect the galvanized pipe to the water main and the meter.

NEXT STEPS

As part of the District’s effort to create an inventory of service line materials, the District will continue to review the remaining paper tap records with a goal to complete the inventory by July 1, 2020. Any lead service lines found will be replaced as soon as possible unless the customer’s service line (from the meter to the home) is also made of lead. In those instances, the District will coordinate its service line replacement with the customer to ensure that the customer is protected from exposure to elevated lead levels. In addition, the District will develop a plan to replace the galvanized services by July 1, 2020.

ARC:CCC:sd

EAST BAY MUNICIPAL UTILITY DISTRICT

DATE: July 5, 2018

MEMO TO: Board of Directors

THROUGH: Alexander R. Coate, General Manager *ARC*

FROM: Eileen M. White, Director of Wastewater *Eileen M. White*

SUBJECT: Richmond Advanced Recycled Expansion Waste pH Caustic Injection System

INTRODUCTION

The District operates and maintains the Richmond Advanced Recycled Expansion (RARE) facility which is located at the Chevron Richmond Refinery (Refinery). RARE produces 3.5 million gallons per day (MGD) of highly purified recycled water for use in the Refinery's boilers. The recycled water treatment process generates a waste stream that is discharged to the West County Wastewater District's (WCWD) wastewater treatment plant. This waste stream is subject to WCWD pretreatment program permit requirements. The pH level in the RARE waste stream discharges does not consistently comply with WCWD discharge permit requirements. This project will install a system to inject caustic into the waste stream to neutralize the pH to ensure permit compliance. Chevron will pay for the cost of the improvements in accordance with our existing agreement to provide recycled water from the RARE facility. Staff will provide an overview of the project to the Planning Committee on July 10, 2018.

DISCUSSION

RARE uses microfiltration/reverse osmosis (MF/RO) technology to produce recycled water. Waste streams produced by the MF/RO process are discharged to the sewer that transports the flow to the WCWD wastewater treatment plant. These flows are subject to the WCWD's wastewater discharge pretreatment permit requirements. The WCWD permit requires the wastewater pH level to be between 6 and 12. Any excursions from these limits may not exceed 7 hours and 26 minutes in any calendar month, and no individual excursion from the range of pH values shall exceed 60 minutes. WCWD recently requested that District staff provide data for continuous monitoring of the pH in lieu of reporting the daily average which the District has done since the RARE facility came online in 2010. Continuous monitoring data reporting for pH is consistent with the WCWD pretreatment program.

Review of the historical continuous monitoring data for pH showed that the pH limit of samples taken just downstream of the waste equalization tank prior to entering the sewer system exceeded the permit limits on multiple occasions. The original design of the RARE project did not include a waste stream pH neutralization system since it was believed that the multiple waste streams from the MF/RO systems would neutralize each other in the waste equalization tank prior to

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discharge. District staff have attempted to optimize the process with the existing equipment as originally designed, but were not successful due to the waste streams sequencing during the treatment process.

The District and WCWD mutually agreed to a corrective approach and corresponding implementation schedule to address this discharge waste pH issue. The corrective approach includes installation of a caustic injection system with metering pumps, piping, instrumentation, and controls to neutralize and raise the pH of the waste stream to compliance levels prior to discharge to the sewer. District staff performed sampling and bench testing to determine the quantity of caustic needed to neutralize the low pH waste and to size the metering pump system. The project must be completed by March 31, 2019.

NEXT STEPS

A construction contract for the RARE Waste pH Caustic Injection System will be presented to the Board for consideration on September 11, 2018. Construction is anticipated to be completed by March 31, 2019 in order to meet the compliance date set by WCWD.

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EAST BAY MUNICIPAL UTILITY DISTRICT

DATE: July 5, 2018

MEMO TO: Board of Directors

THROUGH: Alexander R. Coate, General Manager *ARC*

FROM: Eileen M. White, Director of Wastewater *Eileen M. White*

SUBJECT: Alameda Siphons Cleaning

INTRODUCTION

The District's three Alameda Siphons convey wastewater from Alameda Island under the Oakland Estuary to Alice Street in Oakland. The siphons are approximately 1,100 feet in length. The two primary siphons are 30 inches and 48 inches in diameter. The third siphon has a 36-inch diameter and is used as a bypass when excess capacity is needed (see attached map). The siphons require periodic cleaning to remove accumulated sediment and debris. The siphons were last cleaned in 2011 and a recent inspection indicates that they require cleaning prior to the upcoming wet weather season. Staff will provide an overview of the upcoming Alameda Siphons Cleaning Project to the Planning Committee on July 10, 2018.

DISCUSSION

A May 2018 inspection showed that the debris level in all three siphons is approximately 50 percent (100 percent would indicate a complete blockage). Modeling of the siphons indicates that the two primary siphons can carry peak wet weather flows with a debris load of up to 40 percent. It is therefore necessary to clean the siphons before the next wet weather season.

Siphon cleaning requires a large capacity combination jetter/vacuum truck or jetting and pumping of debris. The solids are separated using settling tanks, liquids are returned to the interceptor, and the solids are tested and are disposed in an appropriate landfill. After cleaning, the siphons are inspected using specialized sonar equipment to detect any residual debris and verify that the pipeline sections are fully cleaned. The estimated quantity of material to be removed is based on the May 2018 sonar findings, with a project goal to remove 95 percent of the recorded sediment. The contract is written on a unit cost basis due to difficulty in estimating the precise quantity of material in the siphons.

The removed sediment may potentially contain hazardous materials. However, sediments upstream and downstream were characterized both during prior cleanings and construction projects, and were found not to be hazardous. If hazardous materials are found during this cleaning, appropriate special measures will be taken for disposal.

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Community Impacts

The primary community impacts related to interceptor cleaning are noise and odors. The Alameda junction structure is located at the Barnhill Marina and staff has coordinated with the Marina to minimize impacts by implementing restricted working hours (8:00 am - 4:00 pm). The Oakland junction structure is located at the end of Alice Street, which is adjacent to an active construction site. Staff has coordinated with City of Alameda and Barnhill Marina staff for the project, and will provide notice to adjacent neighbors prior to cleaning operations.

NEXT STEPS

An agreement for cleaning services will be presented for Board consideration on July 24, 2018. Cleaning work is expected to begin in August 2018 and will be completed in September 2018.

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Attachment

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Alameda Siphons Cleaning



Location of Alameda Siphons

EAST BAY MUNICIPAL UTILITY DISTRICT

DATE: July 5, 2018

MEMO TO: Board of Directors

THROUGH: Alexander R. Coate, General Manager *ARC*

FROM: Eileen M. White, Director of Wastewater *Eileen M. White*

SUBJECT: Update on San Francisco Bay Nutrient Efforts

SUMMARY

Nutrient discharges from municipal wastewater treatment plants (WWTPs) to the San Francisco Bay (Bay) continue to be a key area of concern for regulators and Bay stakeholders. The District participated in a recently completed Nutrient Reduction Study as part of the Nutrient Watershed Permit requirement. The study provided a conceptual-level evaluation of potential nutrient discharge reductions and costs for treatment optimization and upgrades at 37 WWTPs. The District is currently collaborating in a regional effort led by the San Francisco Estuary Institute (SFEI) to determine the impacts of nutrients on Bay water quality. Staff will provide a summary of the study and an update on the current status of the next Nutrient Watershed Permit to the Planning Committee on July 10, 2018.

DISCUSSION

Background

Excessive nutrients (nitrogen and phosphorus) impact water quality in many estuaries in the United States and around the world. Although the Bay does not currently seem to be impaired by elevated nutrient levels, recent monitoring suggests that its historic resilience to nutrient impairment is weakening.

Effluent discharges from WWTPs account for more than 60 percent of the total nutrient load to the Bay. Freshwater influx and discharge from storm water drains contribute the remaining 40 percent. Although WWTPs have made significant improvements to reduce pollutant loads since the late 1970s, little reduction has been seen in nutrient levels because most WWTPs in the Bay Area were not designed or required to remove nutrients. As a result, 37 WWTPs discharge 500 million gallons of treated wastewater to the Bay daily, and this discharge carries with it approximately 122,000 pounds of nitrogen and 8,600 pounds of phosphorus.

Study Required by the Nutrient Watershed Permit (2014-2019)

In 2014, a five-year watershed permit was issued by the San Francisco Bay Regional Water Quality Control Board. It requires each municipal Publicly Owned Treatment Work discharging to the Bay and its tributaries to conduct effluent nutrient monitoring, fund a portion of the Regional Science Program, and complete a study by July 1, 2018 investigating potential nutrient reduction through wastewater treatment optimization and upgrades. The District collaborated with the other Bay Area wastewater agencies and a consulting team to complete the study by the deadline.

The study found that strategies for nutrient removal vary among the agencies. Some WWTPs are ideal candidates for optimization, while others are better candidates for treating a nutrient-rich sidestream (generated from dewatering biosolids), or full upgrades of the treatment process infrastructure. Furthermore, nutrient removal costs vary greatly among the 37 WWTPs. For example, the cost to install and implement full nutrient upgrade infrastructure ranges from as low as \$1.4 million at one plant to \$2.9 billion at the District's Main Wastewater Treatment Plant (MWWTP).

Region-wide implementation of optimization strategies could result in a 7 percent reduction of the total nitrogen (TN) load to the Bay over a 10-year period, with a capital cost of \$120 million. Implementation of sidestream treatment at 23 candidate WWTPs could result in a nearly 20 percent reduction of the TN load for a longer period (30 years), at a capital cost of \$390 million. Capital costs for nutrient upgrades at all Bay Area WWTPs to treat permitted flow and achieve approximately 80 percent nutrient removal are estimated to be over \$8.5 billion. The cost increases to \$12.4 billion if operational and maintenance costs are included over the 30-year project life.

The study provides information about potential Bay nutrient management options on a conceptual level. More investigation is needed to evaluate the best nutrient reduction strategies on the agency level before implementation becomes necessary. The District will evaluate a wide range of nutrient removal options as part of an integrated MWWTP Master Plan to be developed over the next few years.

Current Status of the Next Nutrient Watershed Permit

The next Nutrient Watershed Permit will be in effect from 2019 through 2024. Current discussions with regulators indicate that it will likely include continued effluent monitoring, a study of nutrient management alternatives other than treatment plant upgrades (e.g., wetland enhancement or landscape irrigation recycling), and a significant increase in funding from wastewater agencies for the Regional Science Program (up from \$880,000 per year to approximately \$2.2 million per year for the five-year permit term). It is not expected that nutrient effluent limits or a nutrient discharge load cap will be included in the next permit.

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The additional funding for the Regional Science Program will allow experts at SFEI to significantly advance the understanding of nutrient impacts in the Bay. SFEI will increase monitoring efforts, accelerate the development of a water quality model, and conduct studies focusing on specific concerns, such as investigating the sources and fate of algal toxins in the Bay.

NEXT STEPS

Staff will continue to participate in regional efforts to study the impacts of nutrients on water quality in the Bay, and will develop strategies to proactively address this emerging regulatory issue. Staff will continue to update the Board on the regional and the District's nutrient reduction efforts.

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EAST BAY MUNICIPAL UTILITY DISTRICT

DATE: July 5, 2018

MEMO TO: Board of Directors

THROUGH: Alexander R. Coate, General Manager *ARC*

FROM: David A. Briggs, Manager of Water Operations *DB*

SUBJECT: Environmental Consultant for Renewal of Routine Maintenance Agreements

INTRODUCTION

The District maintains Routine Maintenance Agreements (RMAs) with the California Department of Fish and Wildlife (CDFW) for permitted routine maintenance activities in the riparian corridors of the Mokelumne Aqueducts rights-of-way and the Mokelumne Watershed. These RMAs are renewed every five years and now require more extensive California Environmental Quality Act (CEQA) review. On June 12, 2018, staff updated the Planning Committee on the status of RMA renewal including a discussion to contract out the CEQA work. Local 2019 raised concerns about contracting out this work and the Committee requested the RMA renewal be further discussed with Local 2019 and then brought back to the July 10, 2018 Planning Committee for further consideration.

DISCUSSION

The District met with Local 2019 on June 19, 2018 to discuss their concerns raised at the June 12 Planning Committee meeting. There are three RMAs that require renewal – two for the Mokelumne Aqueducts and one for the Mokelumne Watershed. Local 2019 did not oppose contracting out the CEQA work for the two Aqueduct RMA renewals. Following discussion, the Mokelumne Watershed RMA renewal will be performed by District forces except for specialty environmental study areas where District forces do not have the necessary expertise. District forces will also complete future RMA-related environmental documentation except for specialty environmental study areas where District forces do not have the necessary expertise. In addition, the District will meet with Local 2019 to discuss staffing levels to increase the CEQA work that can be performed by District forces.

NEXT STEPS

A contract to perform the RMA CEQA work will be brought for Board consideration on July 10, 2018.

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