



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

375 - 11th Street, Oakland, CA 94607

Office of the Secretary: (510) 287-0440

Notice of Time Change

**PLANNING COMMITTEE
MEETING**

8:30 a.m.

Tuesday, April 12, 2016

Notice is hereby given that on Tuesday, April 12, 2016 the Planning Committee Meeting of the Board of Directors has been rescheduled from 9:15 a.m. to 8:30 a.m. The meeting will be held in the Training Resource Center of the Administration Building, 375 - 11th Street, Oakland, California.

Dated: April 7, 2016

A handwritten signature in blue ink, reading 'Lynelle M. Lewis', is written over a horizontal line.

Lynelle M. Lewis
Secretary of the District



**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, April 12, 2016
8:30 a.m.
Training Resource Center**

(Committee Members: Directors Linney {Chair}, McIntosh 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. Water Quality Program Semi-Annual Update (Wallis)
2. Regulatory Compliance Semi-Annual Report – September 2015 through February 2016 (Wallis)
3. Joint Exercise of Powers Agreement with the City of Alameda (Wallis)
4. Current East Bay Watershed Land Issues (Sykes)
5. 2015 Mokelumne Fall-Run Chinook Salmon Returns (Sykes)
6. West of Hills Northern Pipelines Project Update (X. Irias)
7. AC Transit Bus Rapid Transit Water Main Relocations (X. Irias)

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: April 7, 2016

MEMO TO: Board of Directors

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

FROM: Michael J. Wallis, Director of Operations and Maintenance *MJW*

SUBJECT: Water Quality Program Semi-Annual Update

INTRODUCTION

This memo provides an end of the calendar year update on the District's Water Quality Program and ongoing efforts to ensure delivery of high quality drinking water to our customers. This report covers the period from January 1, 2015 to December 31, 2015, in which the District met all federal and state drinking water quality standards. A presentation on the Water Quality Program will be made at the April 12, 2016 Planning Committee meeting.

SUMMARY

In the calendar year 2015, the District met 100 percent of federal and state drinking water quality standards and 95 percent of its water quality goals (6 of 121 were not met) as detailed in the attached Water Quality Report and Appendix 1. The District's water quality goals are established at levels more stringent than federal or state water quality standards. By establishing goals that are more stringent than federal or state standards, the District can manage its operations to prevent regulatory standards from being breached. While the District must meet water quality standards, the District strives to meet its own water quality goals. The water quality goals for Total Coliform, taste and odor complaints, chlorate, Total Trihalomethanes (TTHM), Five Haloacetic Acids (HAA5s), and N-Nitrosodimethylamine (NDMA) were exceeded. Each contaminant is discussed below.

DISCUSSION

Being in the fourth year of drought, the District, like many water agencies, had to modify its operations to ensure the continued delivery of drinking water to its customers. During this period, the District continued to experience low rain and snowfall in its watershed and began drawing from the Freeport supplemental supply in April 2015. The duration and volume of water taken from the supplemental supply was greater than what was taken in 2014. Operational changes necessitated by the supplemental supply and customer conservation are believed to have impacted drinking water quality during the latter half of the year. In

addition to the aesthetic (taste and odor) changes that were reported by customers, there was an increase in the number of times the water quality goals for Disinfection By-Products (DBPs) and Total Coliforms were exceeded.

Water conservation reduces water demands and results in longer detention times in the distribution system. In order to maintain chlorine residual in the far reaches of the distribution system, additional chlorine needs to be added at the water treatment plants. This will increase DBP formation and concentrations in the finished water.

Total Coliforms

The Total Coliform standard requires that less than 5 percent of the samples collected in a month be positive. The District has a water quality goal of less than 0.5 percent positive in a month. In March 2015, 2 of 353 Total Coliform samples were positive (0.57 percent). In April 2015, 3 of 356 Total Coliform samples were positive (0.84 percent). Both of these occurrences were reported in the last semi-annual water quality report to the Board of Directors. Since June, the Total Coliform goal of 0.5 percent was exceeded in September and November. In September, 2 of the 353 samples (0.57 percent) were positive, while 5 of the 362 samples collected in November were positive (1.38 percent). With the exception of one sample tap, the positive results were from different sampling locations. Follow-up samples were negative except for one, which required additional sampling and an evaluation of upstream and downstream sampling taps, which is currently being conducted. While the water quality goal was exceeded in 4 out of 12 months, all sampling was well below the compliance limit of 5 percent.

Consumer Taste and Smell Complaints

As previously reported, the District's goal of 30 complaints in one month was exceeded in two months during the first half of the year. In March 2015, the District received 75 taste and smell related complaints that were attributed to a gate change on the Pardee outlet tower that was made necessary by drought operations. Of the numerous calls received by the call center, this metric reflects those customer calls that were referred to System Water Quality and required additional follow-up.

The second event occurred in June and was attributed to an algal bloom in San Pablo Reservoir that produced and released geosmin, a known taste and smell compound. This event precipitated 67 complaints from customers. Ozone is normally sufficient to reduce geosmin concentrations to an acceptable level, but due to the unusual severity of this event, the plant was not able to reduce the geosmin levels to below taste and smell thresholds and still maintain production needed to maximize use of the Freeport supplemental supply.

The last semi-annual water quality report noted the start of a taste and smell episode in the Walnut Creek Water Treatment Plant (WTP) service area. The event began in late September and continued into October. The District received 87 complaints in September

and 101 complaints in October. This event resulted from algae growing in the Folsom South Canal producing methylisoborneol (MIB). The Walnut Creek WTP is not equipped with ozone. The event ended when the Folsom South Canal water was no longer treated at this plant.

Taste and smell compounds, like MIB and geosmin, are not cyanotoxins and USEPA clearly states that, while being obnoxious, MIB and geosmin are not toxic. The USEPA and State Water Resources Control Board (SWRCB) regulate these compounds only for their aesthetic impacts on water quality (secondary maximum contaminant level) using a general parameter (threshold odor number). A specific health-based primary drinking water standard for these compounds does not exist within federal or state regulatory statutes.

Chlorate

The water quality goal for chlorate (400 µg/L) was not met in 2 of the 28 samples collected from the water treatment plants between January and December. The high chlorate concentration recorded in a May sample from the Sobrante WTP was attributed to hypochlorite degradation. The exceedance from a sample collected at the San Pablo WTP observed in December 2015 was also likely due to hypochlorite degradation. Hypochlorite was ordered for the plant in anticipation of startup in November, but the plant was not started up until December, resulting in a longer than anticipated storage time.

Total Trihalomethanes (TTHM)

The District had a total of 5 exceedances of its TTHM water quality goal in the first six months of the year. In January, 2 of 16 TTHM sample sites exceeded the water quality goal of 40 µg/L and in April, 3 of the 16 TTHM sample sites exceeded the District's water quality goal. Last year, during this same time period, the District had a total of 3 exceedances.

During the last half of the year there were a total of 14 exceedances of the TTHM water quality goal. Five occurred in July and 9 happened in October. Both are a significant increase over the single exceedance that occurred in the last half of 2014. These results may be attributed, in part, to supplemental supplies and drought operations.

This year, the TTHM exceedances ranged from 41 to 52 µg/L, compared to the 41 to 49 µg/L range of exceedances reported in 2014, so the TTHM concentrations that exceeded the water quality goal were similar between 2014 and 2015, but the frequency of the exceedances was greater in 2015. In both years, the ranges remained well below the maximum contaminant level of 80 µg/L.

Five Haloacetic Acids (HAA5)

The last semi-annual water quality report noted that there was one exceedance of the HAA5 water quality goal of 30 µg/L, which occurred in April. Since then there have been 7 exceedances, 4 in July and 3 in October. The values covered a range of 31 to 37 µg/L, which is well below the MCL of 60 µg/L. During this same time period last year, there were no exceedances for HAA5. Like the TTHMs, the change in water quality is likely due to drought operations.

N-Nitrosodimethylamine (NDMA)

The District has a water quality goal of 3 µg/L for NDMA. There were 4 exceedances of this water goal in the last half of the year; 1 in July and 3 in October. Two of the 4 occurrences were at the same sample location.

Regulatory Items

Lead/Copper Rule

Much has transpired since the last briefing on the Lead and Copper Rule (LCR). The events in Flint, Michigan have brought national attention to the USEPA's LCR. The last semi-annual water quality report indicated the National Drinking Water Advisory Committee (NDWAC) would be reviewing a set of recommendations from their working group. These recommendations were received and forwarded to USEPA in December 2015, just as the water quality issues in Flint were reaching the national news. The Administrator has set a target of 2017 for the public release of a revised LCR.

On March 1, 2016, the USEPA sent letters to Governors and State Drinking Water Program Administrators reiterating the agency's commitment to protecting public health. The letters, while offering federal assistance with training and technical resources, invited state water programs and water utilities to partner with them on this important issue. They called upon the states to make sure their enforcement activities were consistent with the LCR. They asked that lead inventories and LCR sampling results be published so they were accessible to the public. On March 4, 2016, the Deputy Director in charge of the SWRCB Division of Drinking Water issued a memo to community and non-transient non-community water systems that echoed the USEPA recommendations for posting of lead inventories and LCR sampling results. The District is prepared to respond to this potential request.

The District's 2015 Annual Water Quality Report will list the 90th percentile lead value, the number of samples collected, and the number of sample results that exceeded the lead action level for the last round of sampling (2014) in which no samples exceeded the action level. This will not be the first year the District has provided this information, as past annual water quality reports were designed to include this information.

As a service to our customers, the District is planning to conduct a consumer tap sampling program outside our normal LCR compliance sampling cycle (which is next scheduled to occur in 2017). This special sampling will be conducted incorporating the new USEPA recommendations regarding the sampling protocol (no pre-flush before the quiescent period) and is scheduled to occur in the June to October time frame. In addition, the District plans to offer lead sampling kits to customers for a subsidized fee.

Unregulated Contaminant Monitoring 3 (UCMR3)

Monitoring for the 28 contaminants under UCMR3 was initiated in 2013 and continued into 2015. The monitoring was completed in 2015; none of the volatile organic compounds, perfluorinated compounds, or hormones was detected. Of the metals, cobalt and total chromium were not detected, although molybdenum, strontium, vanadium, chromium-6, and chlorate were. A summary of the monitoring results is in Table 1.

Unregulated Contaminant Monitoring 4 (UCMR4)

The fourth Unregulated Contaminant Monitoring Rule (UCMR4) was proposed on December 11, 2015. Under the proposed rule large water systems would be required to monitor for ten cyanotoxins, two metals, nine pesticides and byproducts, three brominated haloacetic acids, three alcohols, and three semivolatiles. The District worked with the American Water Works Association on comments for submittal to USEPA during the public comment period for the proposed rule. The public comment period has closed and monitoring is scheduled to occur between 2018 and 2020.

ARC:MJW:ss

Attachments

I:\Sec\2016 Board Related Items\04_12_16 Planning Committee\OMD\semi annual wq rpt.docx

Table 1. Summary of UCMR3 Monitoring

Volatile Organic Compounds – EPA Method 524.3	Avg.; min – max. µg/L
chloromethane (methyl chloride)	Not detected (ND)
bromomethane (methyl bromide)	ND
chlorodifluoromethane (HCFC-22)	ND
bromochloromethane (halon 1011)	ND
1,1-dichloroethane	ND
1,2,3-trichloropropane	ND
1,3-butadiene	ND
Synthetic Organic Compound – EPA Method 522	
1,4-dioxane	ND
Perfluorinated Compounds– EPA Method 537	
perfluorooctane sulfonic acid (PFOS)	ND
perfluorooctanoic acid (PFOA)	ND
perfluorononanoic acid (PFNA)	ND
perfluorohexane sulfonic acid (PFHxS)	ND
perfluoroheptanoic acid (PFHpA)	ND
perfluorobutanesulfonic acid (PFBS)	ND
Metals – EPA Method 200.8; SM 3125; ASTM D5763-10	
cobalt	ND
molybdenum	<1; ND – 1
strontium	97; 31 - 320
vanadium	0.7; 0.2 – 2.4
chromium	ND
chromium-6	0.05; <0.03 – 0.22
chlorate	174; 68 - 480
Hormones – EPA Method 539	
17-β-estradiol	ND
17-α-ethynylestradiol (ethinyl estradiol)	ND
16-α-hydroxyestradiol (estriol)	ND
equilin	ND
estrone	ND
testosterone	ND
4-androstene-3,17-dione	ND

Parameter	Units	MCL	PHG	DLR	SMCL	NL	other	Basis for WQG	Water Quality Goal (WQG)	Water Quality Goals (WQG)
USEPA/State Water Quality Regulations										
Primary (Health Standards)										
Inorganic Chemicals										
Aluminum	µg/L	1,000	600	50	200			½SMCL	100	Met
Antimony	µg/L	6	20	6				DLR	6	Met
Arsenic	µg/L	10	0.004	2				DLR	2	Met
Asbestos	MFL	7	7	0.2				½MCL	3.5	Met
Barium	µg/L	1,000	2,000	100				½MCL	500	Met
Beryllium	µg/L	4	1	1				PHG/DLR	1	Met
Cadmium	µg/L	5	0.04	1				DLR	1	Met
Chromium (total)	µg/L	50		10				½MCL	25	Met
Cyanide	mg/L	0.15	0.15	0.1				DLR	0.1	Met
Fluoride (source water)	mg/L	2	1	0.1				PHG	1	Met
Hexavalent chromium	µg/L	10	0.02	1				DLR	1	Met
Mercury	µg/L	2	1.2	1				DLR	1	Met
Nickel	µg/L	100	12	10				PHG	12	Met
Nitrate + Nitrite Total (as N)	mg/L	10	10	0.4				½MCL	5	Met
Nitrate as N [x4.5 for NO3]	mg/L	10	10	0.4				½MCL	5	Met
Nitrite (as N)	mg/L	1	1	0.4				½MCL	0.5	Met
Perchlorate	µg/L	6	1	4				DLR	4	Met
Selenium	µg/L	50	30	5				½MCL	25	Met
Thallium	µg/L	2	0.1	1				DLR	1	Met
Organic Chemicals										
Volatile Organic Compounds (VOCs)										
1,1,1-Trichloroethane (1,1,1-TCA)	µg/L	200	1000	0.5				½MCL	100	Met
1,1,2,2-Tetrachloroethane	µg/L	1	0.1	0.5				DLR	0.5	Met
1,1,2-Trichloroethane (1,1,2-TCA)	µg/L	5	0.3	0.5				DLR	0.5	Met
1,1-Dichloroethane (1,1-DCA)	µg/L	5	3	0.5				½MCL	2.5	Met
1,1-Dichloroethylene (1,1-DCE)	µg/L	6	10	0.5				½MCL	3	Met
1,2,4-Trichlorobenzene	µg/L	5	5	0.5				½MCL	2.5	Met
1,2-Dichlorobenzene (o-DCB)	µg/L	600	600	0.5				½MCL	300	Met
1,2-Dichloroethane (1,2-DCA)	µg/L	0.5	0.4	0.5				DLR	0.5	Met
1,2-Dichloropropane	µg/L	5	0.5	0.5				DLR	0.5	Met
1,3-Dichloropropene (Total)	µg/L	0.5	0.2	0.5				DLR	0.5	Met
1,4-Dichlorobenzene (p-DCB)	µg/L	5	6	0.5				½MCL	2.5	Met
Benzene	µg/L	1	0.15	0.5				DLR	0.5	Met
Carbon Tetrachloride	µg/L	0.5	0.1	0.5				DLR	0.5	Met
Dichloromethane (Methylene Chloride)	µg/L	5	4	0.5				½MCL	2.5	Met
Ethylbenzene	µg/L	300	300	0.5				½MCL	150	Met

Compounds highlighted in blue appear more than once in this table

Parameter	Units	MCL	PHG	DLR	SMCL	NL	other	Basis for WQG	Water Quality Goal (WQG)	Water Quality Goals (WQG)
Freon 113 (1,1,2 trichloro 1,2,2 trifluoroethane)	µg/L	1,200	4,000	10				½MCL	600	Met
Methyl-tert-butyl ether (MTBE)	µg/L	13	13	3	5			DLR	3	Met
Monochlorobenzene (Chlorobenzene)	µg/L	70	200	0.5				½MCL	35	Met
Styrene	µg/L	100	0.5	0.5				PHG	0.5	Met
Tetrachloroethylene (PCE)	µg/L	5	0.06	0.5				DLR	0.5	Met
Toluene	µg/L	150	150	0.5				½MCL	75	Met
Trichloroethylene (TCE)	µg/L	5	1.7	0.5				PHG	1.7	Met
Trichlorofluoromethane (Freon 11)	µg/L	150	700	5				½MCL	75	Met
Vinyl Chloride (VC)	µg/L	0.5	0.05	0.5				DLR	0.5	Met
Xylenes (Total)	µg/L	1,750	1,800	0.5				½MCL	875	Met
cis-1,2-Dichloroethylene (c-1,2-DCE)	µg/L	6	100	0.5				½MCL	3	Met
trans-1,2-Dichloroethylene (t-1,2-DCE)	µg/L	10	60	0.5				½MCL	5	Met
Synthetic Organic Compounds (SOCs)										
Dibromochloropropane (DBCP)	µg/L	0.2	0.0017	0.01				DLR	0.01	Met
2,3,7,8-TCDD (Dioxin)	µg/L	30	0.05	5				DLR	5	Met
2,4,5-TP (Silvex)	µg/L	50	25	1				PHG	25	Met
2,4-D	µg/L	70	20	10				PHG	20	Met
Alachlor (Alanex)	µg/L	2	4	1				DLR	1	Met
Atrazine (Aatrex)	µg/L	1	0.15	0.5				DLR	0.5	Met
Bentazon (Basagran)	µg/L	18	200	2				½MCL	9	Met
Benzo(a)pyrene	µg/L	0.2	0.007	0.1				DLR	0.1	Met
Di(2-ethylhexyl)phthalate (DEHP)	µg/L	4	12	3				DLR	3	Met
Carbofuran	µg/L	18	1.7	5				DLR	5	Met
Chlordane	µg/L	0.1	0.03	0.1				DLR	0.1	Met
Dalapon	µg/L	200	790	10				½MCL	100	Met
Di(2-ethylhexyl)adipate	µg/L	400	200	5				½MCL	200	Met
Dinoseb (DNBP)	µg/L	7	14	2				½MCL	3.5	Met
Diquat	µg/L	20	15	4				½MCL	10	Met
Endothall	µg/L	100	580	45				½MCL	50	Met
Endrin	µg/L	2	1.8	0.1				½MCL	1	Met
Ethylene dibromide (EDB)	µg/L	0.05	0.01	0.02				DLR	0.02	Met
Glyphosate	µg/L	700	900	25				½MCL	350	Met
Heptachlor	µg/L	0.01	0.008	0.01				DLR	0.01	Met
Heptachlor Epoxide	µg/L	0.01	0.006	0.01				DLR	0.01	Met
Hexachlorobenzene	µg/L	1	0.03	0.5				DLR	0.5	Met
Hexachlorocyclopentadiene	µg/L	50	50	1				½MCL	25	Met
Lindane (Gamma BHC)	µg/L	0.2	0.032	0.2				DLR	0.2	Met
Methoxychlor	µg/L	30	0.09	10				DLR	10	Met

Compounds highlighted in blue appear more than once in this table

Parameter	Units	MCL	PHG	DLR	SMCL	NL	other	Basis for WQG	Water Quality Goal (WQG)	Water Quality Goals (WQG)
Molinate (ORDRAM)	µg/L	20	1	2				DLR	2	Met
Oxamyl (Vydate)	µg/L	50	26	20				½MCL	25	Met
PCB's	µg/L	0.5	0.09	0.5				DLR	0.5	Met
Pentachlorophenol (PCP)	µg/L	1	0.3	0.2				PHG	0.3	Met
Picloram	µg/L	500	500	1				½MCL	250	Met
Simazine (Princep)	µg/L	4	4	1				½MCL	2	Met
Thiobencarb (Bolero)	µg/L	70	70	1	1			DLR	1	Met
Toxaphene	µg/L	3	0.03	1				DLR	1	Met
Disinfection By-Products (DBPs)										
Bromate	µg/L	10	0.1	1				Prac	5	Met
Chlorite	µg/L	1,000	50	20				PHG	50	Met
Haloacetic Acids (HAA)	µg/L	60		1				½MCL	30	88%
Total Trihalomethanes (TTHM)	µg/L	80	0.8	0.5				½MCL	40	70%
Radionuclides										
Alpha	pCi/L	15		3				½MCL	7.5	Met
Beta	pCi/L			4			50	½ other ^[1]	25	Met
Radium 226 + 228	pCi/L	5	0.019	1				½MCL	2.5	Met
Strontium-90	pCi/L	8	0.35	2				DLR	2	Met
Tritium	pCi/L	20,000	400	1,000				DLR	1,000	Met
Uranium	pCi/L	20	0.43	1				DLR	1	Met
Microbiological										
%Total Coliforms Positive/Mo.	Organisms /100 ml	5.00%					0.50%	PHG	0.50%	67%
Treatment Techniques										
Individual Filter Effluent (IFE) Turbidity	NTU						< 0.10 NTU more than 95% of the time.	Exceed Partnership for Safe Water	< 0.10 NTU more than 99% of the time.	Met
Filter Startup Turbidity	NTU						Max individual backwash recovery period ^[2] of 15 minutes.	Partnership for Safe Water	Max individual backwash recovery period ³ of 15 minutes.	99.98%
Combined Filter Effluent (CFE) Turbidity	NTU						CaSWTR ^[3]	Exceed Partnership for Safe Water ^[4]	< 0.10 NTU more than 99% of the time	Met

¹ ½ screening level² Backwash recovery period is the time the turbidity is ≥ 0.10 NTU after a filter is placed in operation following a backwash or filtering to waste.³ California Surface Water Treatment Rule (SWTR); combined filter effluent turbidity < 0.3 NTU 95% for conventional plants and 0.2 NTU for in-line filtration plants more than 95% of the time.⁴ <0.10 NTU 95 percent of the time.

Parameter	Units	MCL	PHG	DLR	SMCL	NL	other	Basis for WQG	Water Quality Goal (WQG)	Water Quality Goals (WQG)
Fluoride added at WTP Effluent	mg/L						0.7-1.4	other ^[5]	0.7-1.0	Met
CT Ratio							1	other ^[6]	>1	Met
SUVA	L/mg-m						2	other ^[7]	1.8	Met
Lead 90 th percentile	µg/L		0.2	5			15	½ AL ^[8]	7.5	Met
Copper 90 th percentile	µg/L		300	50			1,300	½ AL ^[9]	650	Met
Acrylamide							0.05% monomer by wt. dose not to exceed 1 mg/L	other ^[10]	0.05% monomer by wt. dose not to exceed 1 mg/L	Met
Secondary (Aesthetic) Standards										
Aluminum	µg/L	1,000	600	50	200			½SMCL	100	Met
Chloride	mg/L				250			½SMCL	125	Met
Color	Color unit				15			½SMCL	7.5	Met
Copper	µg/L		300	50	1000			PHG	300	Met
Foaming agents (MBAS)	µg/L				500			½SMCL	250	met
Iron	µg/L				300		100	other ^[11]	100	met
Manganese	µg/L				50	500	15	other ^[12]	15	met
Methyl tertiary butyl ether (MTBE)	µg/L	13	13	3	5			DLR	3	met
Odor threshold	TON				3			SMCL	3	met
Silver	µg/L				100			½SMCL	50	met
Specific Conductance	uS/cm				900			½SMCL	450	met
Sulfate	mg/L				250			½SMCL	125	met
Thiobencarb	µg/L	70	70	1	1			DLR	1	met
Total Dissolved Solids	mg/L				500			½SMCL	250	met
Turbidity (distribution)	NTU				5			½SMCL	2.5	met
Zinc	µg/L				5,000			½SMCL	2,500	Met

⁵ Optimal Fluoride Dose (0.8) to cover temperature differences between east and west of hills.

⁶ CT ratio of 1 is the minimum for compliance; goal is be greater than or equal to 1 at all times.

⁷ Based on operational experience

⁸ ½ Action Level

⁹ ½ Action Level; compliance based on in-home samples.

¹⁰ USEPA Treatment Technique

¹¹ Operational experience

¹² Operational experience

Compounds highlighted in blue appear more than once in this table

Parameter	Units	MCL	PHG	DLR	SMCL	NL	other	Basis for WQG	Water Quality Goal (WQG)	Water Quality Goals (WQG)
Customer Expectations										
District-caused complaints	Complaint (s)/month						30	other ^[13]	30	67%
Emerging Contaminants										
Inorganic Chemicals										
Boron	µg/L			100		1,000		½NL	500	Met
Chlorate	µg/L					800		½NL	400	94%
Organic Chemicals										
1,2,3 - Trichloropropane	ng/L		0.7	5		5		DLR	5	Met
1,2,4-Trimethylbenzene	µg/L					330		½NL	165	Met
1,3,5-Trimethylbenzene	µg/L					330		½NL	165	Met
N-Nitrosodimethylamine [NDMA]	ng/L		3			10		PHG	3	80%
N-Nitrosodiethylamine [NDEA]	ng/L					10		½NL	5	Met
Naphthalene	µg/L					17		½NL	8.5	Met

¹³ Based on historical data

EAST BAY MUNICIPAL UTILITY DISTRICT

DATE: April 7, 2016

MEMO TO: Board of Directors

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

FROM: Michael R. Ambrose, Manager of Regulatory Compliance *M. Ambrose*

SUBJECT: Regulatory Compliance Semi-Annual Report – September 2015 through February 2016

INTRODUCTION

This memorandum summarizes the key regulatory issues and compliance activities since the last Regulatory Compliance Semi-Annual Report on October 13, 2015. Specific details are contained in the attached report. A presentation updating the status of regulatory compliance issues will be provided at the April 12, 2016 Planning Committee meeting.

SUMMARY

The District's Key Performance Indicator (KPI) in the Strategic Plan for wastewater discharges is to have no violations of the National Pollutant Discharge Elimination System (NPDES) and Waste Discharge Requirements (WDR) permits issued by the State Water Resources Control Board (SWRCB) or Regional Water Quality Control Boards (RWQCBs). In this reporting period, the District received one new Notice of Violation (NOV) associated with NPDES and WDR permits. Additionally, there are three outstanding contested NOVs that were previously reported in the last semi-annual report. The District has asked to have these NOVs rescinded but has not yet received a response on this request from the Central Valley RWQCB.

On October 23, 2015, the District received Notices of Applicability (NOA) for coverage of District water treatment, distribution, and storage facilities under the state's new General NPDES Permit for Drinking Water Discharges. With a few exceptions, this permit covers planned and unplanned emergency discharges from the District's water system facilities from Pardee to the service area.

During the reporting period, the District experienced two large unplanned emergency water main breaks that resulted in impacts to receiving waters, including fish kills. These incidents are under review at this time by the San Francisco (SF) RWQCB for potential enforcement action.

Regarding air quality compliance, the Main Wastewater Treatment Plant (MWWTP) recorded two air quality permit exceedances in this period.

The Strategic Plan KPI for Lost Time Injury Rate (LTIR) is less than or equal to 3.0. The District's LTIR at the end of February 2016 is 1.33, significantly lower than the KPI. The LTIR measures the number of work-related injuries or illnesses resulting in days away from work per 100 employees.

DISCUSSION

An overview of compliance issues during the last reporting period follows. More details on these and other efforts are provided in the attached report.

Environmental Compliance

In June 2015, the District received an NOV for a chlorine residual exceedance at the Pardee Recreation Area Water Treatment Plant for a low-level chlorine residual in a discharge to land from the filter backwash system. Staff explained to the Central Valley (CV) RWQCB that this water did not reach receiving waters; therefore, there were no impacts to beneficial uses. On January 22, 2016, the District received an NOV and draft Record of Violation (ROV) with a proposed \$3,000 mandatory minimum penalty for the chlorine residual exceedance. The ROV requested that the District review the proposed NOV and submit any comments or corrections. The District responded with "no comment" on the draft ROV as the exceedance information was accurate and an explanation of cause had been provided previously. Minimum Mandatory Penalties are statutorily required for chlorine effluent limitation exceedances and, in fact, set the floor for liability. The District intends to pay the penalty and settle once the final ROV is received. Staff recommends settlement at this time.

On October 13, 2015, at Camanche South Shore Water Treatment Plant, a turbidity exceedance was detected in a compliance sample collected at the downstream receiving water sampling station. Staff determined the value was non-representative because of obstructed access to the sampling station due to vegetation overgrowth and the need to use a six-foot sampling dipper to collect samples from less than one foot of receiving water. On March 14, 2016, the District received an NOV for the turbidity exceedance. The CV RWQCB staff indicated that because this was a receiving water result it would not be subject to a monetary penalty; staff believes this matter is closed at this time.

On October 14, 2015, a 24 inch water transmission main broke under the Iron Horse Trail along South Broadway in the city of Walnut Creek. Some of the water discharged directly into San Ramon Creek. Staff isolated the leak by closing three different valves. Once the water was completely shut off, staff turned their attention to a sinkhole that had formed across the Iron Horse Trail. Due to the safety concern posed by the sinkhole, District staff immediately mobilized crews to initiate a plan to excavate, back fill and patch the sinkhole in the Iron Horse Trail, and completed the work that same afternoon. The estimated volume of discharge from time of notification by the public to shut off was approximately 72,000 gallons. The decision has been made to permanently abandon this pipeline as there are other pipelines in the area to meet demand; the method and plan for abandonment are under development. On October 15th, a Game

Warden from the California Department of Fish and Wildlife (CDFW) requested information about work at this site, as she had received a report that morning of dead fish in the nearby creek. District staff had no knowledge of any dead fish in the creek, but deployed staff to conduct a biological assessment of the creek. District staff conducted the assessment with the Warden present and together collected a total of 104 dead fish in the creek. The fish included native and non-native species ranging in size from three to six inches in length. The Warden took all of the dead fish to the CDFW lab for analysis. The Warden later shared that the lab was not able to identify an exact cause of the fish mortality. The District provided a required 5-day report to the SF RWQCB for an emergency discharge that adversely affected beneficial uses. This incident is currently under review by the SF RWQCB for enforcement action due to the fish kill.

On November 27, 2015, the District experienced a major leak from a 16-inch cast iron potable water main in Lafayette. The District had to address response needs for public safety, environmental protection, and protection of property in this incident. The discharge lasted six hours for several reasons, including difficulty finding isolation valves in the dark under water and mud, the need for specialized equipment to close the larger valves, and two valves being broken open requiring alternative valves to be located and closed. The total estimated volume released from the water main during the incident was 2.2 million gallons. Sedimentation control and dechlorination best management practices were employed during the release. Due to the size of the discharge, which flowed into Las Trampas Creek, staff made appropriate regulatory notifications. Biologists were deployed and conducted two extensive creek inspections which identified 19 dead fish within debris jams or on the creek bottom. In accordance with the new statewide NPDES permit that regulates discharges from drinking water systems, the District provided a required 5-day report to the SF RWQCB for an emergency discharge that adversely affected beneficial uses. This incident is currently under review by the SF RWQCB for enforcement action due to the fish kill.

Due to the number of questions raised by SF RWQCB staff regarding these two main breaks, the District hosted a 4-hour workshop on February 26, 2016 with Regional Board enforcement staff covering an overview of the drinking water distribution system, main break response protocols, the leak detection program, District pipeline leak history, pipeline risk consequence modeling, and the Pipeline Rebuild Program. The SF RWQCB requested the District resubmit the original 5-day reports for these incidents addressing questions and comments raised in the workshop. The revised reports were submitted on March 25, 2016.

The MWWTP recorded two air quality permit exceedances in this period. On October 22, 2015, hydrogen sulfide levels in the digester gas were measured above the 340 ppm permit limit. The Bay Area Air Quality Management District (BAAQMD) issued a NOV for this exceedance on November 12, 2015, and a settlement offer is expected for this incident. The corrective action for this incident was to adjust the ferric chloride dosing to better control the hydrogen sulfide forming in the digester gas. On December 29, 2015, the Precursor Organic Compound levels measured from the blend tank odor control units exceeded 20.3 ppm, the current permit limit. BAAQMD is reviewing this incident and has not issued a violation as of mid-March. The corrective action for this incident was to replace the carbon in the carbon polisher which

addressed the immediate problem. Staff continues to troubleshoot the odor control unit for the blend tanks and is looking for ways to improve performance.

The District continues to be involved with Glen Echo Creek in response to the large cellular concrete spill in April 2015. A comprehensive evaluation of the creek was conducted in fall 2015 recommending some minor restoration activities followed by a two-year monitoring plan. The District has submitted permit applications from CDFW, the SF RWQCB, the US Army Corp of Engineers, and the City of Oakland, to add 8-10 yards of river rock to the creek to help reestablish benthic macroinvertebrate habitat and prevent streambed erosion. In November 2015, the District identified and repaired a potable water leak adjacent to a segment of Glen Echo Creek that was affecting benthic macroinvertebrate habitat. The District has been meeting with the SWRCB, the CV RWQCB and CDFW to discuss enforcement actions.

The District and the Bureau of Land Management (BLM) worked together to perform a risk analysis to complement the value engineering study completed last year to confirm the preferred remediation alternative for three abandoned mine tailings impoundments northeast of the Camanche Reservoir. BLM provided a risk assessor from their federal office in Denver who was able to make recommendations that would result in a significant decrease in overall project cost while continuing to protect water quality and the local environment. The recommendation outlines a plan for limited soil removal (with on-site disposal) of the highest impact tailings. The excavation would be backfilled with clean soil to enhance plant growth for erosion stabilization. The recommendation also includes general erosion stabilization of the storm water channel. The District, in partnership with BLM, met with and provided a status update presentation on the proposed remediation to the CV RWQCB on March 18, 2016. The CV RWQCB agreed with the general approach, but wanted to see water quality data to confirm the site will not impact beneficial uses. The next step will be the negotiation of a cost share agreement between BLM and the District, a property access agreement, and for BLM to secure federal funding for their shared portion to implement the selected alternative.

In September 2015, the District reached a \$99,900 settlement with the US Environmental Protection Agency (EPA) regarding the improper acceptance of hazardous waste at the MWWTP. For roughly 19 months, ending in September 2014, the MWWTP was accepting hazardous waste as part of the Resource Recovery Program. In spite of consulting with the California Department of Toxic Substances Control to work out the use of a regulatory exception called Permit by Rule, the US EPA found that the District was not using this exception properly. The District immediately ceased this operation once informed of the US EPA's determination.

On December 24, 2015, an estimated 10 gallons of 25 percent sodium hydroxide (caustic) from the San Pablo Water Treatment Plant (WTP) mixed with a large amount of rainwater was discharged to the storm drain system, and ultimately to Cerrito Creek. Samples collected upstream and downstream of the site indicated the pH was within the acceptable range. No observable effects on plant and wildlife were visually identified. The results of the incident investigation found that caustic was released out the vent of a caustic storage tank and discharged into the containment system. The valves on the containment system were inadvertently left open. This allowed the caustic contaminated rainwater to discharge out of the

containment, and into the storm drain. Regulatory notifications were made in accordance with requirements and a root cause analysis report was provided to the Contra Costa County Department of Environmental Health Hazardous Materials Office at their request. Corrective actions undertaken included enhanced standard operating procedures and additional staff training. It is unclear if this incident will result in any enforcement action.

Workplace Health and Safety

The District continues to make progress in reducing the number of lost time injuries. The District has lowered its LTIR from 4.16 in FY10 to a current LTIR of 1.33, and lowered the number of lost time injuries from 63 in FY10 to 28 for 2015. The LTIR measures the number of injuries or illnesses resulting in days away from work per 100 employees. During the last few years, staff has increased focus on preventing injuries by increasing supervisor presence in the field; tracking more leading indicators such as number of local safety committee meetings held, safety training hours completed, and injury investigation reports completed; and presenting lost time injury investigation results at management staff meetings.

Staff continues to review health and safety programs for areas of improvement. Musculoskeletal injuries (e.g., sprains, strains, etc.) are the most common type of injury for District employees. Staff focuses on engineering controls to reduce hazards that cause these types of injuries. Examples include the use of mechanical drive devices to open and close gate valves rather than doing this task manually, and increased use of a pavement breaker fitted to a backhoe to remove pavement rather than manual use of pavement breakers.

Key Upcoming Regulatory Compliance Activities

During the next six months, the District will continue to provide outreach and education to our regulators and other watershed partners on our environmental protection programs as well as train staff on requirements internally to implement the state's new NPDES Permit for Drinking Water Discharges. Staff attends regional clean water program meetings, presents at regional conferences and hosts workshops to ensure those who regulate the District have a good understanding of what to expect in the field when crews respond to main breaks, share our response protocols, and provide opportunities for meaningful dialogue where recommendations for program enhancements may be considered.

The Penn Mine landfill continues to be monitored to verify reductions in leachate generation following completion of a \$650,000 project to reduce stormwater intrusion into the landfill. The project was jointly funded by the Central Valley RWQCB, the original landfill construction contractor, and the District.

ARC:MRA:ss

Attachment

REGULATORY COMPLIANCE SEMI-ANNUAL REPORT

September 2015 through February 2016

In accordance with District Policies 7.05 (Sustainability) and 7.09 (Workplace Safety and Health), this report provides the status of the District's efforts to meet the objectives of those policies and comply with environmental, health, and safety regulations.

CONTENTS

- Status of compliance with National Pollutant Discharge Elimination System (NPDES) and Water Discharge Requirements (WDR) permits.
- Status of compliance with air permits and regulations.
- Review of facility and job site audits, inspections, and training provided to District staff.
- A summary of other environmental issues.

NPDES PERMITS/WDR ISSUES

Main Wastewater Treatment Plant (MWWTP) and Wet Weather Facilities (WWFs) Compliance: The Oakport WWF had a chlorine residual exceedance on January 19, 2016 that was reported to the San Francisco (SF) Regional Water Quality Control Board (RWQCB). When the plant was starting, the sodium bisulfite (dechlorination agent) feed system did not work when a valve failed to open automatically. The valve has been replaced and the system has worked as designed in storm events after that date. At this time no enforcement action has been taken for this exceedance.

Statewide General National Pollutant Discharge Elimination System (NPDES) Permit for Drinking Water Discharges: On November 18, 2014, the State Water Resources Control Board (SWRCB) adopted a new statewide General NPDES Permit for Drinking Water Discharges. The State's new permit went into effect on February 26, 2015, and all applications for coverage under the new permit were due no later than September 1, 2015. The District submitted its application on June 26, 2015 and received its Notice of Applicability (NOA) from the SWRCB confirming the District's coverage on October 23, 2015. The new permit provides coverage for all drinking water discharges at East Bay facilities as well as upcountry, with the exception of water treatment plant filter back wash. Subsequent to the NOA being issued, several redundant NPDES permits covering some of the District's facilities were rescinded by the San Francisco and Central Valley (CV) RWQCBs. Regulatory staff is in the process of conducting permit compliance reviews for these rescinded permits to close them out indefinitely. There may be future enforcement actions related to the rescinded permits. Staff continues to collaborate with Alameda County Water District, California Water Service Company, Contra Costa Water District, Marin Municipal Water District, San Francisco Public Utilities Commission, San Jose Water Company, and Zone 7 Water Agency via quarterly stakeholder meetings during the implementation process to share information and compliance resources.

Upcountry Water Treatment Plants: The District received one Notice of Violation (NOV) and one draft Record of Violation (ROV) during this reporting period. The NOV was issued on

March 8, 2016 for a turbidity exceedance in an October 13, 2015 downstream receiving water sample at Camanche South Shore Water Treatment Plant. The District had reported the exceedance in the Fourth Quarter 2015 Self-Monitoring Report, stating that the sample was proposed as non-representative due to a sampling error from limited visibility and access to the sampling station because of vegetation overgrowth and the need to collect the sample using a six-foot sampling bailer in less than one foot of receiving water. Staff was subsequently retrained on proper sample collection technique. On January 19, 2016, the District received a draft ROV for the June 30, 2015 chlorine residual exceedance at Pardee Recreation Water Treatment Plant. The ROV included a \$3,000 mandatory minimum penalty. Staff informed the CV RWQCB that it had no comment on the draft ROV because the event did occur and an explanation had already been provided. The District is awaiting the final ROV with penalty invoice.

Upcountry Wastewater Treatment Plants: The District is operating under expired WDRs at several facilities. The facilities and their permit adoption dates are as follows: Camanche North Shore (1995), Camanche South Shore (2002), Pardee Recreation (2001), and Pardee Center (2003). The SWRCB adopted General Order 2014-0153-DWQ on September 23, 2014, for discharges to land by small domestic wastewater treatment systems. District staff continues to work on a strategy for eventual long term compliance under the new revised general order.

AIR PERMIT COMPLIANCE

MWWTP – Title V Permit and Permit to Operate: The MWWTP recorded two air quality permit exceedances in this period. On October 22, 2015, hydrogen sulfide levels in the digester gas were measured above 340 ppm, the current permit limit. The Bay Area Air Quality Management District (BAAQMD) issued a Notice of Violation for this exceedance on November 12, 2015 and a settlement offer is expected for this incident in the future. The corrective action for this incident was to adjust the ferric chloride dose to better control the hydrogen sulfide forming in the digester gas. On December 29, 2015, the precursor organic compound levels measured from the blend tank odor control units exceeded 20.3 ppm, the current permit limit. BAAQMD is reviewing this incident and has not issued a violation as of mid-March. The corrective action for this incident was to replace the carbon in the carbon polisher which addressed the immediate problem. Staff continues to troubleshoot the odor control unit for the blend tanks and is looking for ways to improve performance.

AUDITS, INSPECTIONS, AND TRAINING

Jobsite Inspections: The California Occupational Safety and Health Administration (Cal/OSHA) requires employers to periodically inspect the places their employees perform work. Random inspections of District construction and maintenance jobsites are conducted by Regulatory Compliance staff throughout the year. The inspections are intended to review compliance with District Required Safety Practices (RSPs) and environmental compliance Best Management Practices (BMPs). These inspections are an effective way of: 1) confirming that employees are complying with all safety and health requirements; 2) identifying areas that need improvement; and 3) providing an opportunity for informal communication with employees about safety and environmental protection practices. A copy of the inspector's checklist is left with the job-site supervisor. An electronic copy of the checklist is also sent to the respective Superintendent and Division Manager. Through February 2016, staff has conducted 36 of 120 planned jobsite inspections.

Training: Cal/OSHA regulations require the District to provide safety training to: 1) all new employees; 2) all employees given new job assignments for which safety training has not previously been received; 3) whenever new substances, processes, procedures or equipment are introduced to the workplace and represent a new hazard; and, 4) whenever EBMUD is made aware of a new or previously unrecognized hazard. In addition, some activities (forklift operation) or hazards (asbestos) require periodic refresher training. Regulatory Compliance staff work closely with supervisors throughout the District to determine the training needs for the employees of each work unit. Specialized curriculums are developed to comply with Cal/OSHA regulations, and customized to focus on District operational exposures and applicable RSPs.

Although not specifically required by regulation, staff provides training in a number of other areas including emergency response, business continuity, physical security, and environmental compliance. A specific focus during this reporting period was training all relevant staff on the compliance with the new statewide NPDES Permit for Drinking Water Discharges.

Audits: Facilities where employees work on a full-time basis as well as satellite facilities are audited periodically to identify and eliminate hazards that could lead to injury or illness, environmental impact, inability to respond to emergencies, or a breach in security. Facilities such as satellite shops, pump stations, reservoirs and others may also be audited as necessary. Audits are performed by Regulatory Compliance representative, and/or an audit team which may include supervisors, Local Safety Committee members and consultants. Through February 2016, 16 of 22 planned audits have been conducted.

OTHER ENVIRONMENTAL ISSUES

Glen Echo Creek Cellular Concrete Spill and Restoration Project: In response to the cellular concrete spill into Glen Echo Creek in April 2015, the District has voluntarily agreed to perform some minor restoration work in 2016 and to conduct creek monitoring for two years. The restoration work will focus on adding more rock and substrate to the streambed for benthic macroinvertebrate habitat and streambed erosion prevention. The District is currently awaiting permit approval from several agencies including California Department of Fish and Wildlife, Army Corps of Engineers, SF RWQCB, and the City of Oakland to begin the restoration work.

District Owned Disposal Sites: The District stockpiles clean spoil material at several District owned sites located throughout the service area. In October, staff completed pre-wet season inspections and reinforced existing BMPs to control sediment and erosion. These include installation of fiber rolls, jute matting, and hydro-seeding on vulnerable slopes. Due to high levels of sediment discharged at the Briones site, following heavy rains, staff installed additional BMPs consisting of silt fencing and hay bales. Additionally, the Briones slurry pit was reinforced with a dirt berm, filter paper and gravel to reduce tracking of sediment. Staff also worked to grade and gravel the vehicle wash out area and several roads to reduce runoff and improve access. Staff continues to inspect and maintain the BMPs, as required by the State's General Construction Stormwater Permit.

Former Lake Chabot Machine Gun Range – Miller Road, Castro Valley: The area downstream from the Upper San Leandro Reservoir Dam was used during World War II as a training facility for naval aircraft gunners. The range included barracks, maintenance facilities, and water and sewage systems for 150 men. The District currently leases a portion of this land to a Christmas tree farm. The US Army Corps of Engineers (Army Corps) is completing their Remedial

Investigation/Feasibility Study (RI/FS) activity. The Army Corps conducted a soil removal pilot study that involved vacuum excavating the top one foot of soil in two delineated sampling grids that have been identified as having elevated levels of polycyclic aromatic hydrocarbons in the shallow soil. A final report on the remediation study was completed in October 2014 and was reviewed by the District and the Department of Toxic Substances Control (DTSC) jointly with the Army Corps. The group determined that no additional remediation steps are necessary and no future use restrictions are required.

In December 2014, the District sent a letter to DTSC confirming that because no land use restrictions would be placed on the property, the District intends to move forward to finalize the RI/FS process with the Army Corps. The Army Corps is finalizing their proposed plan that will recommend (and request) no further action at the site. A public meeting on the regulatory closure for the Lake Chabot Machine Gun Range on Miller Road in Castro Valley was held in October 2015. The public meeting also triggered the start of the public comment period (which has now closed).

The District is now awaiting the final Proposed Plan from the Army Corps that details the investigation/remediation measures conducted and the current conditions at the site and is the final document that the DTSC will review prior to granting closure of the site. DTSC has contacted the District to inform staff that regulatory closure of the site has been approved with the caveat that some contamination will remain in place and that the District not build a school or childcare facility on the property in the future. Official closure is pending formal written notice from DTSC of their action.

EAST BAY MUNICIPAL UTILITY DISTRICT

DATE: April 7, 2016

MEMO TO: Board of Directors

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

FROM: Clifford C. Chan, Manager of Maintenance and Construction *CCC*

SUBJECT: Joint Exercise of Powers Agreement with the City of Alameda

INTRODUCTION

The District and the City of Alameda (City) executed a Joint Exercise of Powers Agreement (JPA) for the Alameda Point (Point – see attached map) water system operation and maintenance on May 2, 1997. The JPA has been amended to extend the services six times. On March 8, 2016, the District and the City extended the existing JPA for six months to allow time to craft an agreement that would clarify the roles and responsibilities of each agency. The new JPA is scheduled for discussion at the April 12, 2016 Planning Committee meeting.

SUMMARY

The District entered into the first JPA with the City in May 1997 to provide temporary operation and regulatory reporting for the Point's water system while the City made the necessary changes to their system to allow conveyance to the District. In May 2003, the City informed the District that they would begin the first phase of construction including individual meter installations, removal of elevated tanks, decommissioning of the fire-fighting water system, and installation of cross-contamination devices. To date, only the elevated tanks have been removed from service.

Under the JPA, tenants within the Point receive water services through the City's three master meters. Of concern is the development of the reuse areas where the City has been subdividing and negotiating leases with tenants with an option to purchase. The City's plan to sell parcels in a nonstandard approach creates a potential risk to the District, including challenges to compliance with District regulations, and water quality, maintenance, and customer relation issues. Based on the City's lack of performance with the contract terms, the JPA is being amended so the existing system can be maintained to protect public health and the environment, and to allow for the eventual conveyance of the potable water infrastructure to the District.

DISCUSSION

The Alameda Point water system was originally constructed by the U.S. Navy for the former Naval Air Station and does not meet District standards. The JPA was initiated to allow time for the City to make the necessary investments in the water system to bring it to an acceptable

standard to allow transfer to the District. In the interim, the JPA served to ensure that reliable water service was maintained, and the District has been providing operations and maintenance services to the Point, including pipe repairs, water quality monitoring, backflow prevention, new service installation, and regulatory reporting. The major changes to the existing JPA are summarized below.

Operational and Administrative Issues

The District has had difficulty obtaining current records of changes in occupancy from the City to complete backflow and cross-connection surveys. In 2005, the District identified 20 locations where backflow prevention devices needed to be installed, and to date, the City has made minimal progress installing these devices. The City is also required to notify the District of new tenant occupancy and changes in tenant use, and submit annual reports of changes in occupancy. The City has not complied with this requirement.

The Point has two separate water systems; one for potable water and one for fire-fighting. A 1997 engineering study recommended that the fire-fighting system be removed from service because of its poor condition. This system has experienced a number of large failures, and there is evidence of cross connections between the potable water and fire-fighting systems. In addition, maps of the infrastructure are inaccurate, which makes shutdowns and service outages more difficult to control. The City is also required to make all the required regulatory reporting under the statewide General National Pollutant Discharge Elimination System Order (NPDES). A mixed system of District and private water system infrastructure could make compliance with the NPDES order difficult in an emergency.

The District's Wastewater Control Ordinance provides legal authority for the District to implement its pretreatment program, establish charges for treatment and disposal of wastewater, as well as impose penalties for violations on the City and the Point tenants. The proposed JPA requires the City to comply with mandatory reporting for strength and volume of wastewater discharge, and gives the City three months to provide specific occupancy and use details to allow the District to calculate the new demand and apply the correct wastewater capacity fees. The City is also subject to a Consent Decree to reduce inflow and infiltration in the regional wastewater system. This includes requiring the rehabilitation of the existing sewer mains and sewer laterals in the Point as a condition of the City approving any applicable permits. The City will also need to ensure that Point properties adhere to the Private Sewer Lateral Ordinance.

Development Challenges and Requirements

Redevelopment of the Point includes a combination of new development and reuse areas. New developments require new infrastructure (e.g., water main extensions) and will be funded and installed by a master developer. As new infrastructure is installed, the existing private system is abandoned. Of concern are the reuse areas which include structures that are preserved and adaptively reused. Recently, the City has been subdividing the reuse areas into smaller parcels to negotiate leases with tenants with an option to purchase. Unlike the development areas, there is

no immediate plan to install the new infrastructure necessary to provide principal frontage and service the parcels. Instead, the City is proposing to establish a Capital Improvement Program (CIP) funded by the sales of the parcels within the reuse areas. The City plans to continue to serve new and existing tenants through the existing private infrastructure until the CIP has sufficient funds to support new infrastructure projects.

Under the terms of the JPA and District Regulations Governing Water Service to Customers, tenants within the Point are authorized to receive water services through the City's three master meters as the property is under a single ownership. The City's plan to sell parcels in a nonstandard approach absent the required permanent water infrastructure, creates a potential risk to the District including challenges to comply with District regulations, and water quality, maintenance, and consumer relation issues with future property owners. To mitigate these risks, staff is recommending requiring the installation of a looped system as part of the water main extension, working with the City to establish water service at parcels with principal frontage to the new mains that have not been subdivided, and abandoning the existing water system where the new water main is installed and converting services to the new water main, as feasible.

Increase in Maintenance Costs

The current caps for operation and maintenance of the system have not kept up with current costs. The proposed JPA increases the caps for routine operations and maintenance to \$10,000 per month and for emergency repairs to \$40,000 per event, and will include annual increases of five percent or the Consumer Price Index, whichever is greater for the length of the agreement.

Milestones and Phasing

The City and the District recognize that it is in their mutual interest to work together in planning for proposed changes to the Point. The proposed JPA will include milestones to meet our mutual goals. In addition, the proposed JPA will include provisions that the District will not provide operations and maintenance services to third parties who become owners of portions of the Point and will include a mechanism for removing properties deeded to private parties from the JPA.

FISCAL IMPACT

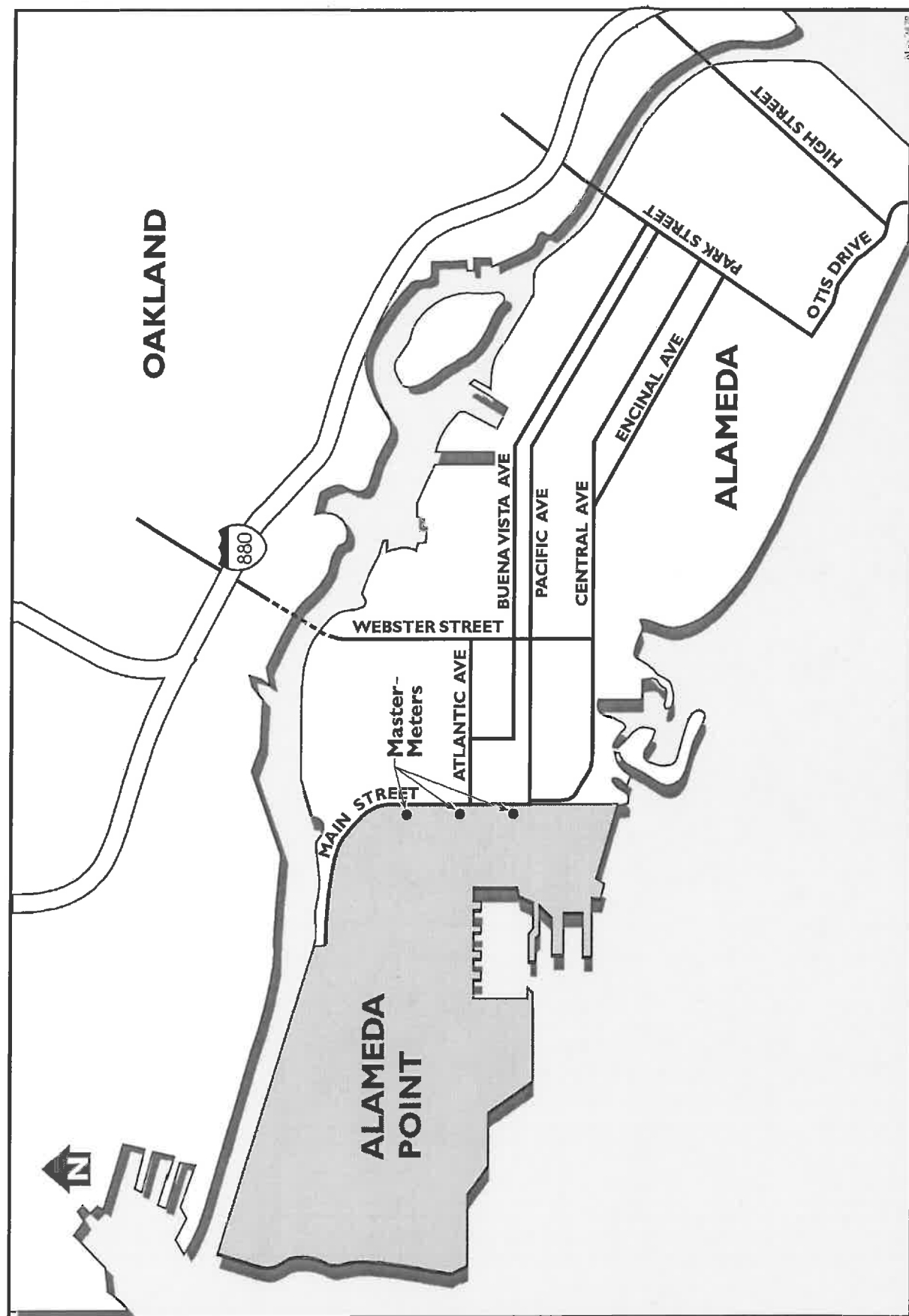
The District is reimbursed for all costs of operations and maintenance.

NEXT STEPS

Staff will begin meeting with the City in late April to negotiate the terms of the new JPA and plans to complete the negotiations by September 30, 2016.

ARC:CCC:ss

Attachment



EAST BAY MUNICIPAL UTILITY DISTRICT

DATE: April 7, 2016

MEMO TO: Board of Directors

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

FROM: Richard G. Sykes, Director of Water and Natural Resources *Richard*

SUBJECT: Current East Bay Watershed Land Issues

INTRODUCTION

EBMUD manages almost 28,000 acres of open space land surrounding our East Bay terminal reservoirs. This memo provides an update on activities related to three watershed properties currently being addressed by staff including the potential purchase of the Carr Ranch property in the Upper San Leandro (USL) watershed, the potential sale of approximately 2,000 acres of District property in the uplands area in the Pinole Valley, and the completion of agency review regarding the proposed Oursan Ridge Conservation Bank (ORCB) in the Pinole watershed. A presentation on these activities will be made at the April 12, 2016 Planning Committee meeting.

DISCUSSION

Carr Ranch Property

The Carr Ranch is a 604 acre privately-owned parcel that is surrounded on three sides by EBMUD-owned lands within the USL watershed (Figure 1). EBMUD's interest in the Carr Ranch property is based upon water quality protection and biodiversity preservation. This parcel is in a remote and lightly visited portion of the watershed and is in close proximity to USL Reservoir. The property was first offered to the District in 2012 but competing capital priorities prevented staff from making an offer. Shortly thereafter, the Muir Heritage Land Trust (MHLT) executed a purchase option on that property for the original asking price of \$4.5 million. At the July 14, 2015 Planning Committee meeting, staff briefed the Board on this property and noted that EBMUD was working with MHLT to determine future ownership/easement options. At this time, it appears that the best option for the District would be to own the property outright and manage it consistent with the surrounding EBMUD watershed. Funding for this purchase would come from surplus watershed property sales and/or revenues from the ORCB described below.

Pinole Valley Uplands

EBMUD owns approximately 3,700 acres in the Pinole Valley. These lands were originally purchased with the intention of constructing a reservoir in Pinole Valley but this area is no longer included in future water supply planning. Staff has briefed the Board on several occasions regarding future options to maximize ratepayer value for this property. These options have included development of mitigation and conservation banks, and sale of a portion of the property to an entity that would preserve it from development and continue management similar to EBMUD's. The property considered for sale is the 2,000 acre upland portion of the Pinole Valley (Figure 2). East Bay Regional Park District (EBRPD) has expressed an interest in purchasing this land to keep it in open space and offer recreational access. The most recent appraisal (2014) of the 2,000 acre Pinole Valley uplands area was approximately \$11 million. Staff is scheduled to meet with EBRPD in late April on potential paths forward. The Pinole Valley uplands area does not include areas of the valley where EBMUD has or anticipates potential future opportunities to develop mitigation projects such as the ORCB described below.

Oursan Ridge Conservation Bank

Staff have been working on development of the ORCB for five years and preliminary agency approval was finally received last month after years of delay. The ORCB would conserve approximately 470 acres of the Pinole Valley watershed (Figure 2). The Conservation Bank Enabling Instrument (CBEI), a package including bank description and proposed credits, land management plan, and the conservation easement and endowment agreement, was originally submitted in April 2011. Following agency input, the CBEI was resubmitted in April 2012 and again in April 2014. The two agencies (California Department of Fish and Wildlife and U.S. Fish and Wildlife Service) have indicated that the package is now complete and ready for execution. Staff anticipates presenting this project to the full Board for consideration later in calendar year 2016. Once established, ORCB will offer conservation credits for California the red-legged frog and the Alameda whipsnake. As bank owner, EBMUD will have access to these conservation credits for District projects as well as making them available to non-District project proponents. Revenue from the sale of ORCB's conservation credits has been conservatively estimated at \$6-8 million over the life of the conservation bank based upon the number of credits and the current conservation credit market. Development costs for the bank are less than \$1.5 million and are primarily funded through credit sales. Staff will make a detailed presentation on the ORCB at the May 10, 2016 Planning Committee meeting.

RGS:RLL:dc

Attachments

FIGURE 1: CARR RANCH DEVELOPMENT (ORINDA)

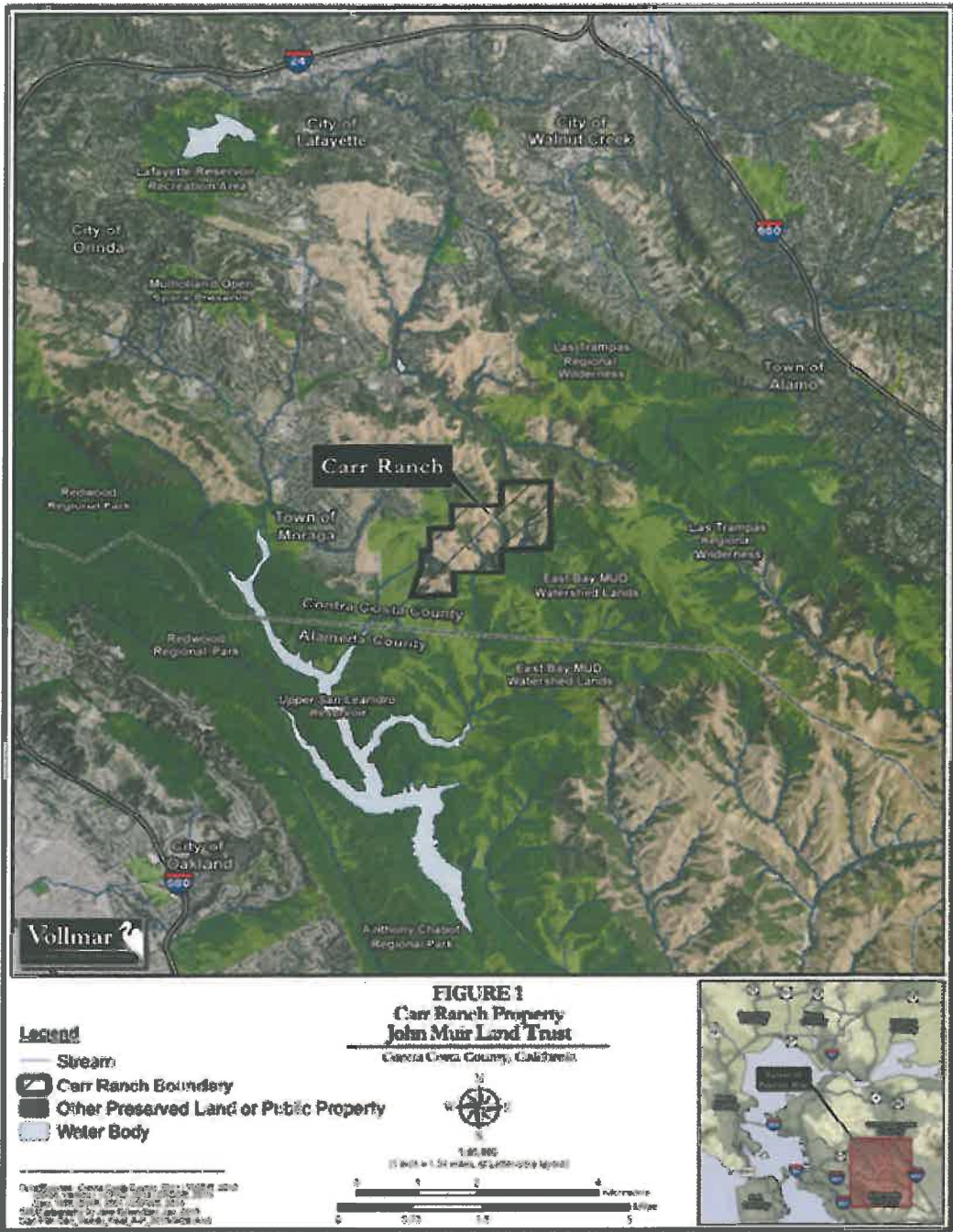
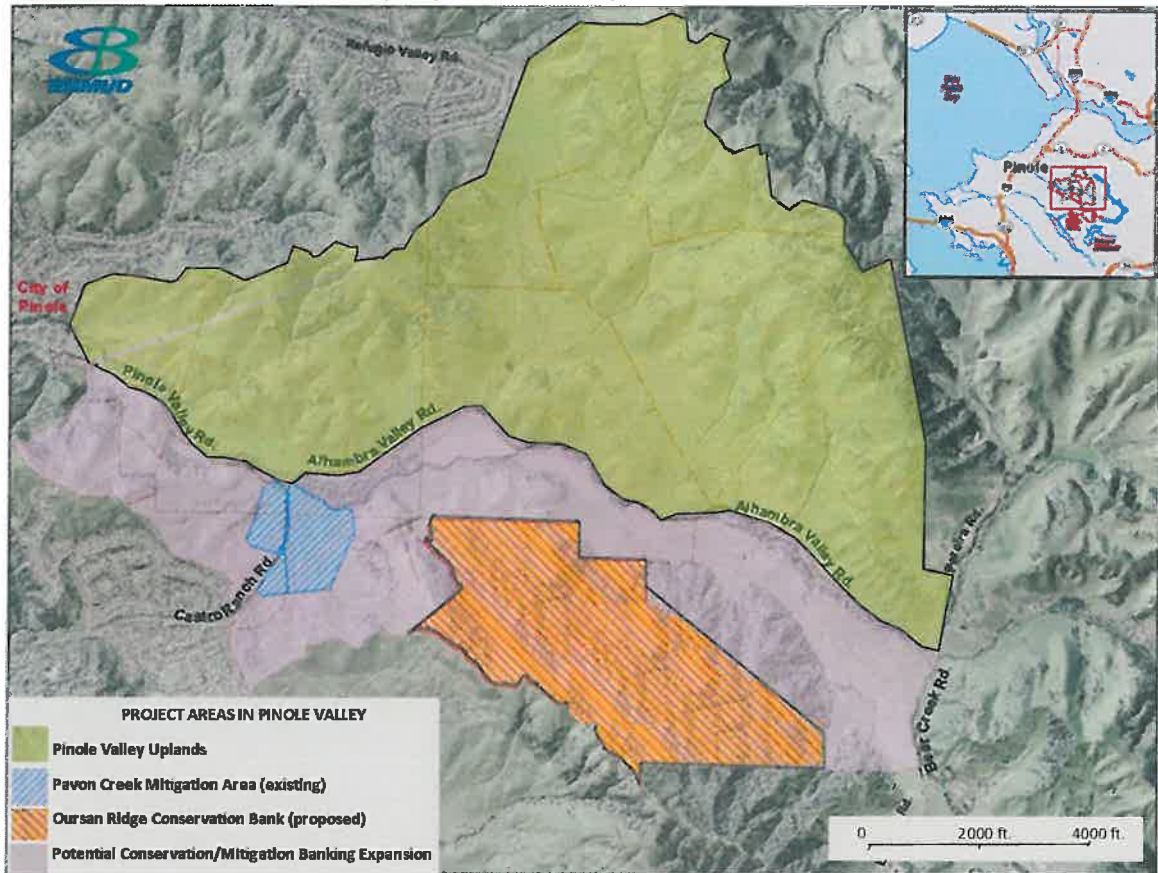


FIGURE 2: EBMUD-OWNED PROPERTY IN PINOLE VALLEY

FIGURE 2: EBMUD-Owned Property in Pinole Valley



EAST BAY MUNICIPAL UTILITY DISTRICT

DATE: April 7, 2016

MEMO TO: Board of Directors

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

FROM: Richard G. Sykes, Director of Water and Natural Resources *Richard*

SUBJECT: 2015 Mokelumne Fall-Run Chinook Salmon Returns

INTRODUCTION

The 2015 fall-run Chinook salmon returns to the Mokelumne River were an estimated 12,879 fish, including 4,584 fish that spawned in the river and 8,295 that were collected at the hatchery for egg production. The 2015 return is about 272 percent of the long-term average (4,734), fifth consecutive year of over 12,000 fish returning, and fourth largest return since 1940. One indicator EBMUD uses to assess the health of the Mokelumne fishery is the running 9-year average escapement, which represents three complete 3-year salmon life cycles. With the addition of the 2015 returns, that figure is 8,806 fish or 190 percent of the long-term average. This memo provides a brief review of the 2015 return and the key factors affecting salmon escapement to the Mokelumne River. A presentation on this information is scheduled for the April 12, 2016 Planning Committee meeting.

DISCUSSION

The continuation of drought conditions significantly influenced fall-run Chinook salmon returns Central Valley-wide in 2015 with impacts to flows and water temperatures. Most systems experienced significant reductions in salmon numbers compared to long-term average returns. Salmon returns in the Central Valley are cyclical, typically declining in dry years and years of warmer ocean temperatures, and increasing in wet years and years of cooler ocean temperatures. However, there are many other important factors that influence escapement, particularly on the Mokelumne River, where salmon have to traverse the Delta and are impacted significantly by export pumps, Delta Cross Channel (DCC) operation and predation. Figure 1 shows salmon escapement to the Mokelumne since records began in 1940. Based on preliminary 2015 escapement reports for Central Valley tributaries, the Mokelumne River continues to be the exception in regards to the overall decline in salmon numbers experienced in the valley.

As the effects of the drought continue, management actions will be focused on maximizing the benefits of limited water supplies allocated to in-river fisheries. Much of the focus this past summer was managing Pardee and Camanche Reservoirs in order to meet the required cold water pool volume in Camanche for fall spawning releases beginning in October 2015. Although the drought has resulted in challenges, the 2015 Mokelumne escapement continued to be strong and over two and one-half times the long-term average. Program changes implemented in 2009 and continued through 2015, have played a role in recovering and increasing the Mokelumne population more quickly than any other system in the Central Valley. Program changes included moving the release location of the hatchery fish to Jersey Point to balance increased survival and reduced straying, conducting fall pulse flows, working with our partners to close the DCC gates, and innovative trap and haul programs to increase survival of naturally produced juveniles. With all of these actions, the goal is to maximize the number of salmon surviving and returning to the Mokelumne River.

Partnership members and stakeholders continue to find innovative ways of maximizing the benefits of limited water resources. Actions included allowing the Camanche Reservoir to warm more than normal over the summer in order to maximize the volume of cold water stored in Pardee Reservoir, which resulted in the transfer of over 30,000 acre feet of < 16.4 degree C water into Camanche in October. Moreover, the continued operation of the Freeport Project resulted in additional supplies for in-river releases due to the gainsharing provision in the Joint Settlement Agreement. Since 2009, the strategy of releasing pulse flows has been extremely successful in boosting salmon returns to the river. Woodbridge Irrigation District (WID) continued operating its dam in a manner that provided releases timed to augment the District's seven pulse flow events from Camanche Dam. Additionally, WID conducted 2 additional pulse flow events in December-January without any Camanche pulse. The pulses through December all resulted in large increases in daily passage of salmon by Woodbridge Dam. The January 2016 pulse targeted passage of steelhead in an effort to support that fishery. In fact, the largest single day passage number since monitoring began in 1990 occurred on November 24, 2015, when 1,493 salmon moved past WID Dam.

The Mokelumne River Fish Hatchery Coordinating Team (HCT) completed its first annual report, which prioritizes the implementation recommendations of the Hatchery Scientific Review Group (HSRG). HSRG recommendations that will be implemented in 2016 at the Mokelumne Hatchery include:

- Improve spawning protocols to increase genetic diversity;
- Alternate release strategy and timing for steelhead; and
- Feed trials to identify those that would improve migration survival.

District biologists have been actively engaged with agency staff, advocacy groups and others in key forums, such as the HSRG Statewide Policy Team and Central Valley HCT, to help guide the process towards an outcome that will continue the successes of the last seven years.

Staff and our partners on the lower river, the California Department of Fish and Wildlife, the U.S. Fish and Wildlife Service and the National Marine Fisheries Service, continued to be very proactive in managing the Mokelumne fishery including actions at the hatchery, in the river, and at Camanche Dam. EBMUD participated in the Central Valley Project Improvement Act (CVPIA) Science Integration Team (SIT). The team was developed to produce an adaptive resource management process to determine the annual funding priorities for the CVPIA restoration fund. The SIT developed FY17 CVPIA priorities in February of 2016 by improving the attributes and input data for the decision support model for fall-run Chinook salmon, and will continue to improve the model annually based on updated data inputs and revised sub-models.

NEXT STEPS

Although precipitation levels within the Mokelumne River watershed increased significantly when compared to previous years, the effects of the drought will linger and continue to be at the forefront of fisheries management activities. Staff, working with resource agencies, will continue to implement actions to improve the survival of juvenile salmon as they migrate through the Central Delta. These actions will include barging of a portion of the hatchery production and spring pulse flows. EBMUD will continue work with resource agencies and others to ensure that any Delta "fix" or Central Valley drought management actions are protective of the Mokelumne fishery and that the hatchery continues to support a sustainable fishery in a manner that is compatible with the protection and recovery of listed salmonids in the Central Valley.

ARC:RGS:dec

Attachment

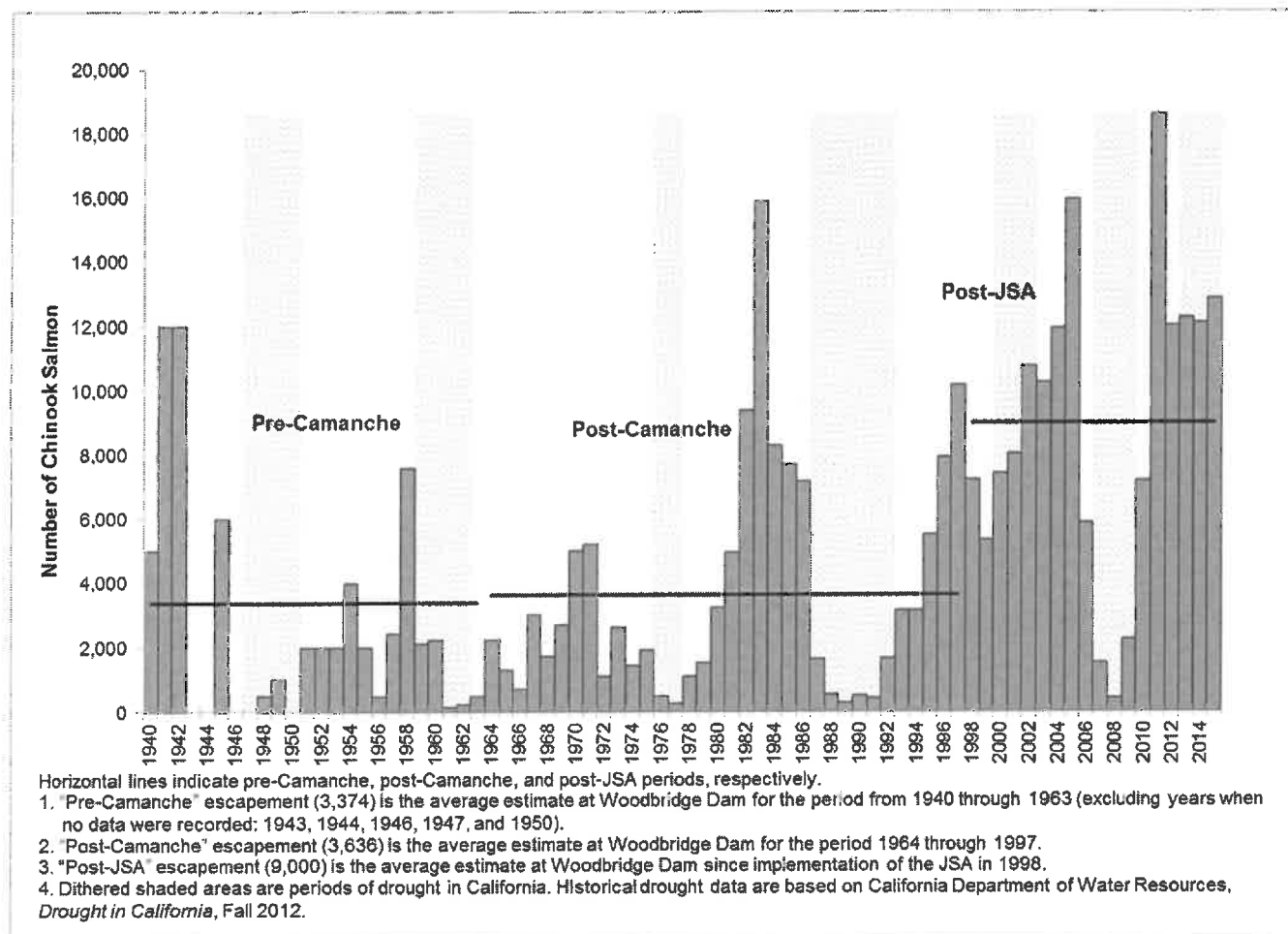


Figure 1. Annual Chinook salmon escapement totals to the lower Mokelumne River since 1940.

EAST BAY MUNICIPAL UTILITY DISTRICT

DATE: April 7, 2016

MEMO TO: Board of Directors

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

FROM: Xavier J. Irias, Director of Engineering and Construction *DJR FOR XJI*

SUBJECT: West of Hills Northern Pipelines Project Update

INTRODUCTION

The West of Hills Northern Pipelines Project Environmental Impact Report (EIR), certified by the Board of Directors on December 10, 2013, approved the construction of four water transmission pipelines as part of system improvements identified in the West of Hills Master Plan. An alternative alignment was identified for one of the four transmission pipelines, the Wildcat Pipeline (Berkeley), during the detailed design phase. This memo provides a project update and describes the advantages of the recommended alternative alignment and next steps. Staff will provide a presentation to the Planning Committee on April 12, 2016.

DISCUSSION

The four water transmission pipelines approved in the West of Hills Northern Pipelines Project EIR are required to correct existing transmission and storage operational deficiencies, meet future water demands, improve system reliability and water quality, and improve wintertime redundancy to facilitate facility outages necessary to replace or upgrade aging infrastructure. The four pipelines are located in the cities of Berkeley, El Cerrito, Richmond, and San Pablo.

Detailed design of the Wildcat Pipeline (Berkeley), known as the Benvenue Avenue Alignment and shown on the attached figure, was initiated in 2014. During the detailed design, staff identified the following challenges:

- Installation of a pipeline underneath a culvert will not be possible due to the structural integrity of the culvert and sanitary sewer conflicts nearby. The only alternative to cross the culvert is by tunneling approximately 25 feet below the culvert resulting in higher construction costs and concerns with future operation and maintenance of a deep pipeline.
- Installation of approximately 50 bends and offsets than originally anticipated, due to utility conflicts, resulting in higher construction costs and longer construction time.
- Installation of approximately 70 feet of pipeline in a newly landscaped, brick sidewalk resulting in higher construction costs.

- Removal of approximately nine trees, due to utility conflicts, resulting in higher construction costs due to tree replacement.

Subsequently, an alternative alignment, known as the Ellsworth Street Alignment and shown on the attached figure, was identified and investigated. The Ellsworth Street Alignment still fulfills the project objectives of improving transmission capacity within the west of hills service area. The Ellsworth Street Alignment has significant advantages in constructability while also reducing environmental impacts; the proposed alignment reduces the length of constructed pipeline, reduces the number of trees to be removed, reduces the degree of disturbance to existing sidewalks, and reduces the challenges in connecting the new pipeline to existing transmission pipelines.

In addition, the total length of the Ellsworth Street Alignment is about 3,000 feet shorter than the Benvenue Avenue Alignment; the pipeline size (48-inch diameter) and material type (welded steel) will remain the same. Another advantage of the Ellsworth Street Alignment is that it eliminates crossing Ashby Avenue and College Avenue; both of these streets are in a residential area and heavily travelled and would likely have required night work to complete. By avoiding Ashby Avenue, which is under the jurisdiction of Caltrans, there are significant savings in design and permitting costs and gains in schedule. Lastly, there are significant cost savings, as described above, with the Ellsworth Street Alignment. To implement the alternate alignment, construction of the project will be delayed by approximately one year.

Staff evaluated the environmental impacts of the Ellsworth Street Alignment and confirmed that there are no new significant impacts resulting from the project changes. The following environmental factors were considered and evaluated: aesthetics, air quality, biological resources, cultural resources, energy, geology and soils, greenhouse gas emissions, hazards or hazardous materials, hydrology and water quality, noise, recreation, and transportation and traffic. An addendum to the EIR was prepared detailing the proposed modifications to the Wildcat Pipeline (Berkeley), and no further environmental analysis is required for the project.

NEXT STEPS

Staff will be conducting public informational meetings on April 19 and April 27, 2016 to nearby residents on the new alignment. Design of the Wildcat Pipeline (Berkeley) will start again in May 2016 followed by construction in summer 2017.

ARC:XJI:DJR:TRM:dks

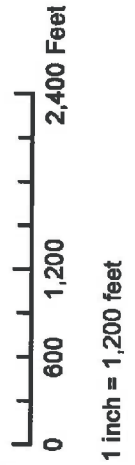
Attachment: Wildcat Pipeline (Berkeley) Plan



Wildcat Pipeline (Berkeley) Plan

Date Created: March 22, 2016

Author: Stella Tan



Legend

- | | | |
|--|----------------------------|------------------------|
| | Benvenue Avenue Alignment | Street |
| | Ellsworth Street Alignment | EBMUD_RouteType |
| | Backbone Pipe | |
| | | Major Road |
| | | Local or Rural Road |

EAST BAY MUNICIPAL UTILITY DISTRICT

DATE: April 7, 2016

MEMO TO: Board of Directors

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

FROM: Xavier J. Irias, Director of Engineering and Construction *DJR FOR XJI*

SUBJECT: AC Transit Bus Rapid Transit Water Main Relocations

INTRODUCTION

The proposed Alameda-Contra Costa Transit District (AC Transit) East Bay Bus Rapid Transit (BRT) Project will provide new bus service between 20th Street in downtown Oakland to the San Leandro BART station (see attached Location Map). The new bus route is primarily along International Boulevard and East 14th Street within the City of Oakland and Caltrans jurisdictions. The project relies on a number of funding sources, where approximately half of the contributions are grant funded from the Federal Transportation Administration (FTA). The grant stipulates that the BRT must be operational by November 2017.

The project requires deep pavement reconstruction and mill and overlay roadway improvements along the limits of the bus corridor. The pavement reconstruction depths conflict with the District's Engineering Standard Practice to provide a minimum cover of 24 inches above existing pipelines during construction work. As a result, the District recommended that over 10 miles of old distribution water mains be relocated prior to or as part of the roadway improvements for the BRT project. AC Transit recently stated that they cannot accommodate these pipeline relocations within the BRT project budget or schedule. Most of the pipeline relocations are reimbursable to the District. AC Transit is currently negotiating with the City of Oakland and Caltrans in an effort to attempt to relax the pavement requirements, which would reduce the length of District pipelines needing relocation. Staff is actively working with AC Transit to resolve this conflict and will provide an update at the April 12, 2016 Planning Committee meeting.

DISCUSSION

Background

The BRT project was broken into three bid packages. For Bid Package 1, the District and AC Transit entered into Utility Agreement (UA) No. 1908.12 on January 24, 2014 to relocate pipelines to accommodate new bus station platforms and bulb outs. Bid Package 2 did not require utility relocation. For Bid Package 3, AC Transit did not inform the District of the deep pavement reconstruction or mill and overlay requirements. It was not until December 2015 when

the District and AC Transit discussed the work in detail that the District learned of the full extent of the pavement requirements.

At that time, the District was informed that the BRT project's pavement reconstruction depths would range between 19 and 31 inches, and the District determined that the BRT project would leave inadequate construction cover for the District's distribution pipelines that are comprised primarily of 6- to 12-inch cast iron (CI) and asbestos cement (AC) pipe materials with some 16- to 30-inch pipelines. As a result, 6.0 miles of pipelines along the new BRT corridor will be impacted by the deep pavement reconstruction and at risk of breaking during construction. In the areas between the deep pavement reconstruction zones, the BRT project proposes a mill and overly pavement restoration plan that impacts an additional 4.5 miles of CI and AC pipelines for a total of over 10 miles of impacted water pipelines.

Furthermore, included in the over 10 miles of pipeline is 3,700 feet of 20-inch transmission pipeline within International Boulevard between 52nd and 63rd Avenues which will be impacted. The 20-inch pipeline has a history of breaks and is scheduled in the District's 2016 Capital Improvement Program as a critical large diameter pipeline replacement project. The project is currently at 90 percent design and scheduled for completion in May 2016. In summary, approximately 10.5 miles of existing pipelines are impacted by the BRT project and have been recommended to AC Transit for relocation.

AC Transit recently declined to install the 20-inch replacement pipeline along International Boulevard with their selected BRT contractor. As a result, District forces committed to construct the 20-inch pipeline replacement and scheduled the work for summer 2016 with completion in early 2017. The District informed AC Transit that they must agree to re-phase their project schedule to accommodate this work.

NEXT STEPS

Presently, AC Transit understands the impact of the BRT project on District pipelines and is negotiating with the City of Oakland and Caltrans to reduce the pavement reconstruction depths and avoid the District's 24-inch construction clearance requirement. Depending on the outcome of the negotiations, the District hopes to be able to enter into a UA for Bid Package 3 with AC Transit in order to fund the relocations of impacted pipelines along the BRT corridor. The UA will be finalized once the scope of pipeline relocations has been determined in coordination with AC Transit, and the necessary relocations will be completed as part of the BRT project.

ARC:XJI:cdc

Attachments: AC Transit BRT Project Location Map

AC Transit BRT Project Location Map

