EBDA

EAST BAY DISCHARGERS AUTHORITY
2651 Grant Avenue
San Lorenzo, CA 94580-1841
(510) 278-5910
FAX (510) 278-6547

A Joint Powers Public Agency

NOTICE: Pursuant to the Governor's Executive Orders N-25-20 and N-29-20, the Operations & Maintenance Committee meeting scheduled below will be accessible via Zoom video conferencing. Members of the public may participate in the meeting through the Zoom platform or phone number below.

- Zoom link: **https://us02web.zoom.us/j/86310622623**
- Telephone dial-in: 1(669) 900-6833, meeting ID #863 1062 2623

ITEM NO. 14

OPERATIONS & MAINTENANCE COMMITTEE AGENDA

Tuesday, February 16, 2021

9:00 A.M.

East Bay Dischargers Authority
2651 Grant Avenue, San Lorenzo, CA 94580

Committee Members: Cutter (Chair); Johnson

OM1. Call to Order

OM2. Roll Call

OM3. Public Forum

OM4. EBDA Performance
(The Committee will be updated on EBDA's NPDES report.)

OM5. Status Report
(The Committee will be updated on EBDA's O&M activities.)

OM6. Motion Authorizing the General Manager to Execute Amendment to Work Order No. 1, Work Order No. 2, and Work Order No. 3 with Carollo Engineers, Inc. for Engineering Services, for a Total Contract Amount of $105,626
(The Committee will consider the motion.)

OM7. Adjournment

Any member of the public may address the Commission at the commencement of the meeting on any matter within the jurisdiction of the Commission. This should not relate to any item on the agenda. It is the policy of the Authority that each person addressing the Commission limit their presentation to three minutes. Non-English speakers using a translator will have a time limit of six minutes. Any member of the public desiring to provide comments to the Commission on an agenda item should do so at the time the item is considered. It is the policy of the Authority that oral comments be limited to three minutes per individual or ten minutes for an organization. Speaker's cards will be available in the Boardroom and are to be completed prior to speaking.

Agenda Explanation
East Bay Dischargers Authority
O&M Agenda
February 16, 2021

In compliance with the Americans with Disabilities Act of 1990, if you need special assistance to participate in an Authority meeting, or you need a copy of the agenda, or the agenda packet, in an appropriate alternative format, please contact the Administrative Assistant at the EBDA office at (510) 278-5910 or juanita@ebda.org. Notification of at least 48 hours prior to the meeting or time when services are needed will assist the Authority staff in assuring that reasonable arrangements can be made to provide accessibility to the meeting or service.

In compliance with SB 343. related writings of open session items are available for public inspection at East Bay Dischargers Authority, 2651 Grant Avenue, San Lorenzo, CA 94580. For your convenience, agenda items are posted on the East Bay Dischargers Authority website located at http://www.ebda.org.

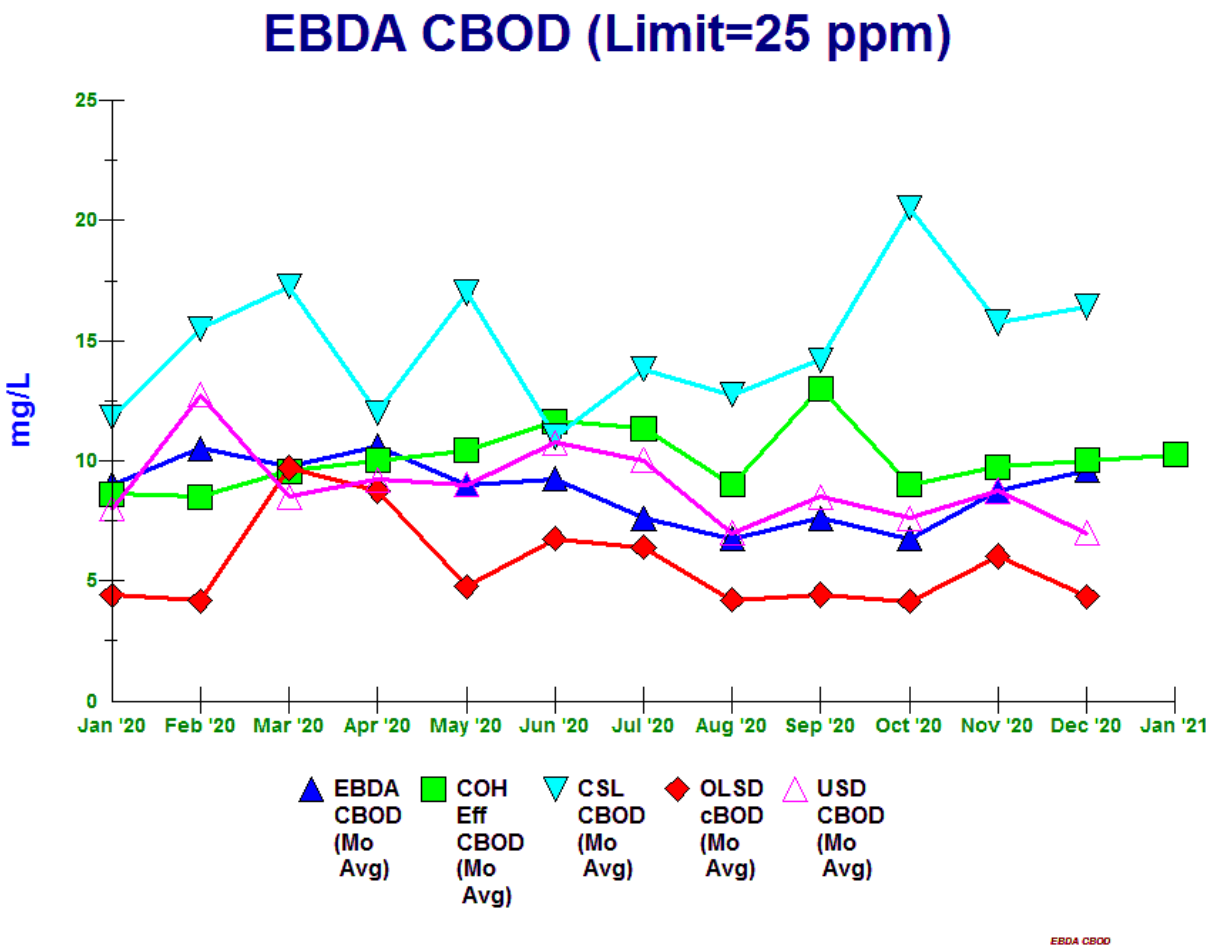
The next O&M Committee meeting will be held
Tuesday, March 16, 2021, at 9:00 a.m.

Agenda Explanation
East Bay Dischargers Authority
O&M Agenda
February 16, 2021

ITEM NO. OM4 EBDA PERFORMANCE

Recommendation
For the Committee's information only; no action is required.

Permit Compliance Issues
There were no NPDES permit violations in December and preliminary data from January are also free of permit exceedances. Member Agency CBOD and TSS performance are shown below. A table with bacterial indicators is also included.



Agenda Explanation
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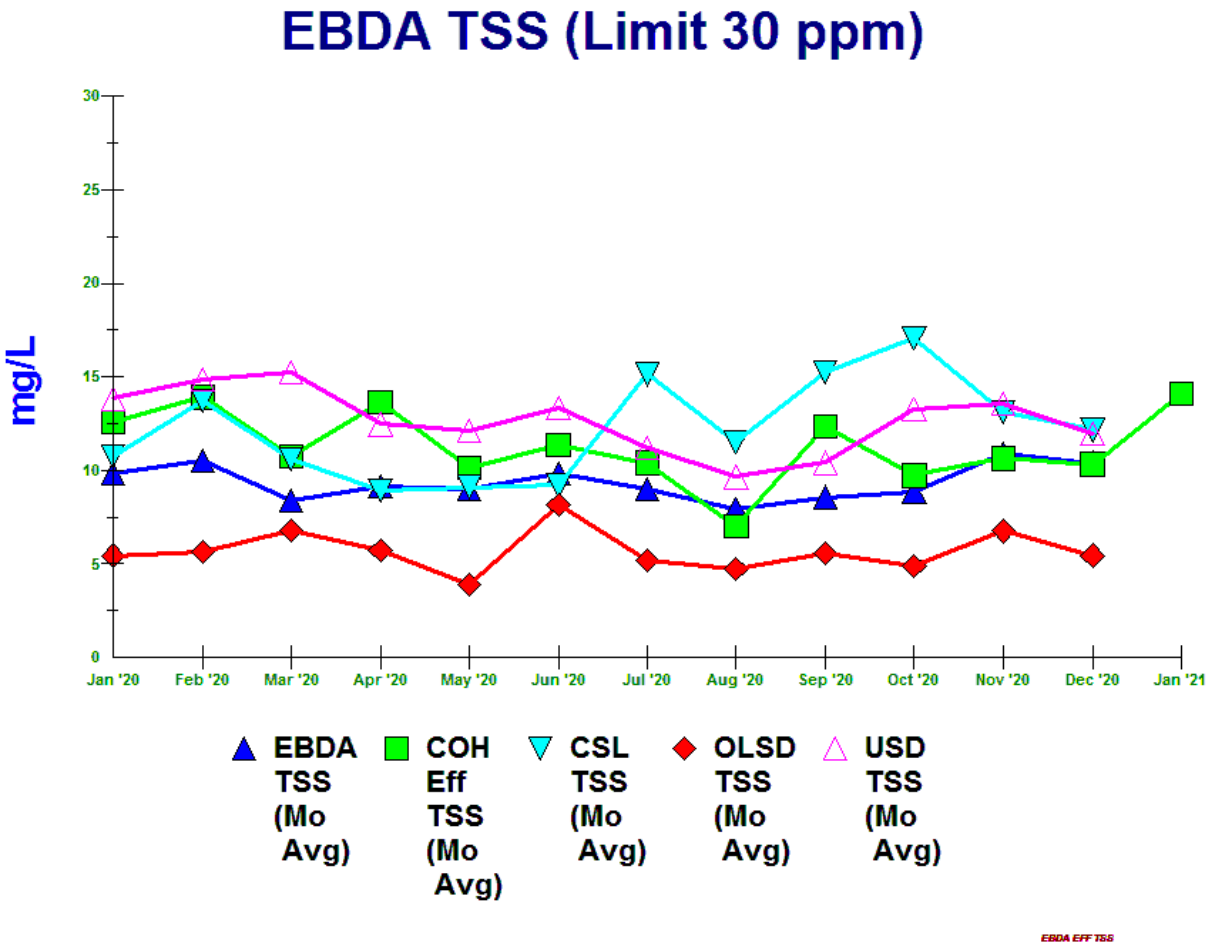

Agenda Explanation
East Bay Dischargers Authority
O&M Agenda
February 16, 2021

EBDA Bacterial Indicators

Date	FECAL MPN/ 100mL	ENTERO MPN/ 100mL
Limit (90th Percentile)	1100	
Limit (Geomean)	500	240
February 2020 Geomean	**5**	**< 3**
March 2020 Geomean	**8**	**< 2**
April 2020 Geomean	**4**	**2**
May 2020 Geomean	**40**	**2**
June 2020 Geomean	**28**	**3**
July 2020 Geomean	**27**	**3**
August 2020 Geomean	**23**	**3**
September 2020 Geomean	**41**	**5**
October 2020 Geomean	**30**	**9**
November 2020 Geomean	**11**	**4**
12/1/2020	27	3
12/2/2020	14	< 2
12/7/2020	3	2
12/8/2020	17	2
12/9/2020	4	2
12/14/2020	4	6
12/15/2020	1600	3
12/21/2020	< 2	2
12/22/2020	2	< 2
12/28/2020	4	< 2
12/29/2020	7	< 2
December 2020 Geomean	**9**	**2**
1/4/2021	4	4
1/5/2021	7	< 3
1/6/2021	2	12
1/11/2021	3	< 2
1/12/2021	4	3
1/13/2021	2	4
1/18/2021	2	< 2
1/19/2021	2	< 2
1/20/2021	70	2
1/25/2021	9	4
1/26/2021	8	2
January 2020 Geomean	**5**	**3**

ITEM NO. OM5 STATUS REPORT

Union Effluent Pump Station (UEPS – Formerly AEPS)

Radio Communications
EBDA has been experiencing issues receiving data communications from UEPS. Calcon Systems, Inc. (Calcon) attempted to repair the existing equipment but was unsuccessful. Calcon installed a new radio at the top of the UEPS surge tower, and at the EBDA office. The new radio at the EBDA office was defective and returned to the manufacturer. Calcon is waiting for the manufacturer to send a replacement.

Hayward Effluent Pump Station (HEPS)

No change; all equipment is operational.

Oro Loma Effluent Pump Station (OLEPS)

Wet Well Hypochlorite (Hypo) System
On February 3, 2021, Calcon installed the new programmable logic controller (PLC) for the new OLEPS hypo system. In the next several weeks, Calcon will install the flow meter and pump.

Main Electrical Switchboard Upgrade
Staff is in the process of executing a contract with Graybar Electric Company, Inc. for the OLEPS Main Electrical Switchboard Upgrade, as approved by the Commission. After negotiations between Graybar and EBDA's legal counsel, terms have now been agreed to, and the contract will be executed shortly.

San Leandro Effluent Pump Station (SLEPS)

No change; all equipment is operational.

Skywest Pump Station

Recycled Water Production
During the month of January 2021, the Skywest Recycled Water System operated two days and produced 0.89 million gallons of recycled water.

Hypo Pump Replacement
Due to a change in the source water used for the Skywest Recycled Water System associated with OLSD's nutrient improvements, it has become necessary to pump additional sodium hypochlorite (hypo) to meet the target chlorine residual. Because the existing hypo pump was at its maximum, OLSD's RAS hypo pump was used as a second pump to supplement hypo flow. In January, EBDA received a new loaner hypo pump from Misco Water with a larger capacity. EBDA will test the pump for the next several months. If it meets the system requirements, the pump will be purchased this summer.

Marina Dechlorination Facility (MDF)

No change; all equipment is operational.

Force Main

San Leandro Force Main Shutdown

On February 10, 2021, as part of the Cargill Brine Project inspection, the northern portion of the transport system will be shutdown to assess the condition of the concrete pipe. See Special Projects for additional details.

Operations Center

No change; all equipment is operational.

Miscellaneous Items

Underground Service Alerts

EBDA received five (5) Underground Service Alert (USA) tickets during the month of January 2021. Four required an Electronic Positive Response (EPR) with calls/emails to the excavators, and one required field verification.

Wet Weather

Total rainfall for the month of January 2021 (in inches) was as follows:

Oakland	Hayward	Livermore
2.42	2.90	2.74

Noteworthy daily rainfall for the month of January 2021 (in inches) was as follows:

Date	Oakland	Hayward	Livermore
1/27/2021	0.86	0.61	0.55
1/28/2021	0.11	0.52	0.60
1/29/2021	0.74	1.10	1.09

During the month of January 2021, there were a series of rain events over a three-day period, from January 27-29. Fortunately, the majority of the heavy rain occurred during low flows and low tide. The one exception was on January 28, when MDF recorded a peak flow of 133.3 MGD at 10:06 am, and one OLEPS diesel pump was required to operate for approximately five hours. The average daily flow at MDF on January 28 was 99.7 MGD. For reference, the average daily flow for the month of January 2021 was 69.2 MGD, and the average daily flow for December 2020 was 64.5 MGD.

During the rain event, all Member Agencies stayed at or under their JPA maximum flows. OLSD/CVSan diverted flow to their equalization basin to keep their flow to OLEPS under

30 MGD and the COH used their effluent channel as flow equalization and diverted flow to the Hayward Ponds to keep their flow to HEPS at 15 MGD.

COVID-19 Response
Authority staff is continuing to implement the Pandemic Response Plan, which includes staff working from home and alternating time in the office to ensure social distancing. Signage regarding closure of the office to the public and the Authority's social distancing measures is posted on the office door. All meetings are being conducted by phone and web conference until further notice. Water and wastewater utility workers have been classified by the Centers for Disease Control as recommended for vaccination during Phase 1C; however, vaccines have not yet become widely available in California for this tier. EBDA has signed up for notification by Alameda County when vaccines become available.

Staff is also continuing to track research efforts utilizing data on the prevalence of SARS-CoV-2 virus in wastewater influent to identify and anticipate COVID-19 community trends, termed wastewater-based epidemiology. EBDA staff has been meeting with representatives from UC Berkeley, Alameda County Public Health Department (Public Health), and East Bay Municipal Utility District to develop a monitoring strategy for Alameda County. Public Health is still working to prioritize locations for which wastewater surveillance data will be most helpful and determine how they would use the data.

As a pilot program, Union Sanitary District has begun twice weekly sampling of their Alvarado basin, which encompasses the City of Union City, with samples analyzed by UC Berkeley. In addition, the City of San Leandro has submitted an expression of interest in the latest phase of the National Wastewater Surveillance System, a program funded through the federal Health and Human Services. They are awaiting notification of whether they will be included.

Special Projects

Cargill Brine Project Due Diligence
EBDA staff is continuing to work with Cargill to assess risks of adding brine to the EBDA transport system, particularly with respect to accelerating corrosion. The team is taking a two-pronged approach to addressing corrosion risks:

- Condition and Vulnerability Assessment: The team is continuing to perform inspections of the transport system to understand the current state of the pipe and delineate which conditions and locations might be at greatest risk for accelerating corrosion and thus require mitigation such as lining. Working with San Leandro, EBDA plans to implement a shutdown of the northern portion of the transport system on February 10, 2021 to perform an inspection. During this inspection, core samples of concrete pipe will be collected and analyzed to assess chloride penetration and the susceptibility of the concrete to corrosion induced by the brine

addition. Based on the results of the core samples, a plan for further inspections will be developed.

- Corrosion Mitigation Strategy: In parallel, Cargill's consultant is beginning to develop a strategy and cost estimate for lining or coating vulnerable sections of the transport system to protect against corrosion. Hydraulic modeling of the system provided by Carollo Engineers, Inc. (see Item No. OM6) will inform that analysis, as will the results of the inspection described above.

EBDA staff is also continuing to work with Cargill to plan for installation of a pipeline connecting Cargill's Newark facility to the EBDA system. The team is coordinating with the City of Union City, whose planned bike path project on Union City Boulevard corresponds with the proposed alignment for the pipeline. Staff is also preparing to hire a consultant to begin environmental analysis for the project under the California Environmental Quality Act (CEQA). An agreement with Cargill for cost reimbursement during the CEQA phase is included as Item No. FM8.

Advanced Quantitative Precipitation Information (AQPI) Project
The regional AQPI project, with a goal of improving prediction of rainfall events in the Bay Area, continues to move forward. The Cooperative Agreement for installation of the X-band radar in the East Bay has been approved by the East Bay agencies, but approval by Sonoma County Water District (Sonoma Water), the implementing agency, was slowed by the COVID-19 emergency and wildfires. The East Bay agreement, as well as the lease agreement with American Tower for the site, will likely be approved by Sonoma Water in March 2021. As they await approval of the agreement, the team is preparing for installation of the X-band at Rocky Ridge.

As implementation of this current phase continues, the AQPI team is actively seeking federal and state funding for the long-term implementation of the program. EBDA staff signed onto a letter to House and Senate Appropriations Committee Members requesting that funding be allocated to the National Oceanographic and Atmospheric Administration (NOAA) for AQPI (see attached). Informational meetings are also being planned with California state legislators. A meeting with Assemblymember Quirk is planned for March 15, 2021 and others are being scheduled.

Dear House and Senate CJS Appropriations Committee Members,

On behalf of our coalition of California water management agencies, we respectfully request you consider additional funding for the NOAA OAR Weather and Air Chemistry Research account to support a critical new weather forecasting system known as the Advanced Quantitative Precipitation Information (AQPI) system. Funding this program at $28.2 million over 5 years, starting at $4.8 million for Fiscal Year 2022 to implement AQPI Phase 2, will enable better forecasting of extreme storm events to help Bay Area communities prepare for flooding and droughts.

When big atmospheric river storms hit California, current weather forecasting technology does not provide the detailed information needed to inform emergency response and enhance reservoir flood operations, flood protection, and combined sewer-stormwater systems. Standard weather radars, originally designed for low topographical areas on the east coast and the great plains, are often unable to give an accurate picture of what is happening just above the complex landscape of California's coastal mountain ranges, where precipitation can be heaviest.

NOAA funds other demonstration programs like the VORTEX-SE that addresses tornado forecasting. In the San Francisco Bay Area, there is a unique regional issue similar to VORTEX-SE, and AQPI is necessary for the success and growth of the region because existing technology is outdated and better forecasting is needed for public safety, and because advanced warning of storms can help to minimize economic costs. Currently, over 90% of flood damages in California are due to atmospheric rivers.

The State of California has already supported Phase 1 of the AQPI system with nearly $20 million in state funding. Phase 1 is anticipated to be completed in 2022, after 5 years of development including the installation of five new radar units throughout the San Francisco Bay Area. We are working closely with UC San Diego's Scripps Institution of Oceanography to ensure that the AQPI system will include tools specifically designed to translate the new data and improved forecasting that it generates, which can then be used by on-the- ground emergency and water managers to support mitigation of risk and damage caused by extreme storm events.

This 5-year funding request for Phase 2 provides a viable plan to operate the system, demonstrate its value, and enhance its performance based on feedback and direction from the local, regional, state and national agencies it supports and depends upon. Phase 2 includes management, outreach, communication, operations, maintenance, and research advancing the science of precipitation, streamflow, and coastal flood forecasting to improve AQPI and better

meet stakeholder needs. Lessons learned in the Bay Area from this program will have application to other west-coast flood-prone urban and surrounding communities.

Phase 2 would allow additional scanning radars and low-cost vertically pointing radars to be added to the AQPI observational network, as well as at least one regional precipitation forecast model, customized to California and the Bay area.

Therefore, AQPI is necessary for the safety of the San Francisco Bay area's 7.76 million residents. Accurate and timely precipitation information is critical for making decisions regarding public safety, infrastructure operations, and resource allocations. Improved precipitation monitoring and prediction in the San Francisco Bay region can enhance public safety through early warning and storm tracking when hazardous weather events come onshore. Having early warnings can help to minimize economic costs. Advanced notice of these extreme weather events can help to plan for and minimize damage and associated costs of recovery.

We appreciate your consideration of this request and urge you to support our region's economy and safety by funding this request.

Sincerely,

Supervisor Diane Burgis
Chair, Board of Supervisors
County of Contra Costa

Michael Carlin
Acting General Manager
San Francisco Public Utilities Commission

John A. Coleman
Chief Executive Officer
Bay Planning Coalition

Robert Shaver
General Manager
Alameda County Water District

Jacqueline Zipkin
General Manager
East Bay Dischargers Authority

Pat Echols
Interim Director
Department of Public Works
County of Marin

Grant Davis
General Manager
Sonoma Water

ITEM NO. OM6 Motion Authorizing the General Manager to Execute Amendment to Work Order No. 1, Work Order No. 2, and Work Order No. 3 with Carollo Engineers, Inc. for Engineering Services, for a Total Contract Amount of $105,626

Recommendation

Adopt the proposed motion to approve the amended work order and two new work orders for Carollo Engineers, Inc.

Background

Carollo Engineers, Inc. (Carollo) is a Walnut Creek-based engineering consulting firm specializing in water and wastewater. The Authority has had Carollo perform engineering services for a number of years. Recent projects include development of a transport system hydraulic model and scenario analysis in preparation for Joint Powers Agreement (JPA) negotiations, and the Union Effluent Pump Station Cavitation Study.

In July 2020, the Authority entered into an agreement with Carollo to provide engineering services on a work order basis. The agreement provided a vehicle to engage Carollo to perform specific tasks on a time and materials basis, each of which would be outlined in a work order including a cost ceiling. Staff issued the first work order under this contract to Carollo in July 2020. That work order (Work Order No. 1) was to use their existing hydraulic model to perform scenario analyses associated with the Cargill brine project. Work performed under that work order, which had a cost ceiling of $9,900, will be reimbursed by Cargill.

Discussion

Under the proposed motion, staff is asking the Commission to consider three actions associated with the Carollo agreement.

Amend Work Order No. 1 to Increase Scope for Cargill Project

As part of the Cargill project due diligence process, additional hydraulic modeling scenarios are required. This additional modeling will focus on assessing the extent of pipe that may be under conditions conducive to corrosion with the presence of increased chlorides. Staff is proposing to increase the Work Order scope by $10,000, for a total scope of $19,900. Any work performed under this Work Order will be reimbursed by Cargill.

Approve Work Order No. 2 for General Engineering Services

Staff is recommending adopting a second work order for small engineering tasks as may be required from time to time for capital projects. For example, staff expects to request Carollo's assistance in specifying replacement pumps for the Hayward Effluent Pump Station (HEPS) and in analyzing hydraulics associated with raising the weir at the Oro Loma overflow structure. Funds for these tasks have been approved in the Renewal and Replacement Fund. Staff is recommending a cost ceiling for this task of $20,000 to cover work to be performed through June 2022.

Approve Work Order No. 3 for Disinfection Master Plan

In December 2020, staff issued a Request for Proposals (RFP) to seven engineering firms for development of a Disinfection Master Plan. The goal of the Master Plan is to develop a strategy for sodium hypochlorite dosing and monitoring to prevent bacteria outbreaks and ensure consistent permit compliance while optimizing chemical dosage – both for disinfection and for dechlorination.

The Authority received one proposal in response to the RFP, from Carollo. A selection committee made up of the General Manager as well as staff representatives from LAVWMA, City of San Leandro, and City of Hayward reviewed Carollo's proposal and deemed it responsive. The selection committee was pleased with Carollo's proposed approach and believes that they have the skills and tools required to perform the work.

Carollo proposed a cost of $65,726 for the Disinfection Master Plan, which they expect to complete in October 2021. Staff is recommending that this scope and cost be approved as Work Order No. 3 under Carollo's existing contract. The Authority's approved FY 2020/2021 budget included $40,000 for this work as a Special Study. If approved, the additional $25,726 will be included in the FY 2021/2022 budget proposal.

The following table summarizes the proposed contract budget:

	Cost Ceiling	Source of Funds
Work Order 1 (July 2020) - Cargill	$9,900	Cargill
Work Order 1 Amendment – Cargill	$10,000	Cargill
Work Order 2 – General Engineering	$20,000	RRF (Fund 31)
Work Order 3 – Disinfection Master Plan	$65,726	Special Studies (Fund 13)
Total	$105,626	

1st AMENDMENT TO CAROLLO ENGINEERS WORK ORDER 1

This **1st Amendment** (the "Amendment") to Work Order 1 (Work Order) under the Agreement for Contractual Services (the "Agreement"), is entered into this **___th day of February, 2021** (the "Effective Date"), by and between **East Bay Dischargers Authority** ("EBDA"), and the Carollo Engineers, Inc. ("**Consultant**"), sometimes referred to as the "Party" or collectively the "Parties. Both the Agreement and the Amendment are entered into in San Lorenzo, California.

1. **EFFECT OF THE AMENDMENT.** The terms and conditions of this Amendment are intended by the Parties to modify the Work Order dated July 31, 2020 ("Work Order"). To the extent there is any inconsistency between the terms of this Amendment and the terms of the Work Order, the terms of this Amendment shall control.

2. **SCOPE OF WORK.** The Scope of Work as described the Work Order is unchanged. Consultant shall work at the direction of staff to perform as-needed engineering services. Services under this Work Order shall be in support of the Authority's due diligence work to assess impacts and opportunities associated with accepting mixed sea salt brine from Cargill, Inc.

3. **COMPENSATION.** Compensation will be subject to the terms of the Agreement. The total compensation for work done pursuant to the Work Order will be increased by Ten Thousand Dollars ($10,000), for a total compensation of Nineteen Thousand Nine-hundred Dollars ($19,900). In no event will Contractor's compensation for this Work Order exceed $19,900 without a subsequent amendment signed by both Parties.

4. **HOURLY FEES.** Fees for work performed by Consultant on an hourly basis shall not exceed the amounts shown on the compensation schedule attached to the Work Order.

5. **EFFECTIVE DATE.** This Amendment shall be effective as of the Effective Date.

The Parties have executed this Amendment to the Agreement as of the Effective Date.

[SIGNATURES ON FOLLOWING PAGE]

AUTHORITY:	**CONSULTANT:**
_____	_____
Signature	Signature
Jacqueline Zipkin, P.E.	Rick L. Chan, P.E.
Name	Name
General Manager	Senior Vice President
Title	Title

EXHIBIT A — WORK ORDER

Consultant: Carollo Engineers, Inc.

Work Order Number: 2

Date Issued: February 18, 2021 ("Effective Date")

This Work Order is issued by Authority to Consultant as of the date set forth above and is subject to all terms and conditions of the Consulting Services Agreement by and between the Authority and the Consultant.

1. **Scope of Work** (the "**Work**"). Consultant agrees to furnish all management, supervision, labor, equipment, materials, and supplies required to perform the following Work as set forth herein, subject to the terms of the Agreement:

1.1 General Description of the Work: As-needed engineering services, which may include hydraulic analysis, engineering calculations, optimization of operational strategies, or other engineering advice related to the Authority's operations and infrastructure.

2. **Work Order Price**. Authority shall pay the Consultant the following amounts, pursuant to the terms of the Consulting Services Agreement:

2.1 Time and materials. Authority shall pay Consultant an amount not to exceed twenty thousand ($20,000). Consultant shall submit monthly applications for payment based upon hours spent at the hourly rates included in the Compensation Table as set forth in Attachment 1 to this Work Order. Consultant shall invoice the actual cost (with no markup) of materials actually used for the performance of the Work. Authority shall pay Consultant's approved monthly applications for payment within thirty (30) days of receipt.

3. **Reimbursable Expenses**. Authority shall compensate Consultant for Reimbursable Expenses included in the Compensation Table as set forth in Attachment 1 to this Work Order, which shall be reimbursed upon showing of paid invoices (or other suitable proof of payment). Reimbursable Expenses are paid in addition to the compensation stated in the Work Order.

4. **Schedule and Time for Completion**. Consultant shall complete the Scope of Work by the following dates:

4.1 **Commencement of the Work**. Consultant shall commence work on or after the Effective Date.

4.2 **Completion of the Work**. Consultant shall complete its services under the Work Order by June 30, 2022.

5. **Authority's Representative**. Authority's Representative for the Work to be performed under this Work Order is Howard Cin, Operations and Maintenance Manager.

The Parties have executed this Work Order as of the date signed by the Authority.

AUTHORITY:	**CONSULTANT:**
_____	_____
Signature	Signature
Jacqueline Zipkin, P.E.	Rick L. Chan, P.E.
Name	Name
General Manager	Senior Vice President
Title	Title

ATTACHMENT 1

COMPENSATION SCHEDULE

CAROLLO ENGINEERS, INC.
FEE SCHEDULE

As of January 1, 2020
California

	Hourly Rate
Engineers/Scientists	
Assistant Professional	$188.00
Professional	230.00
Project Professional	273.00
Lead Project Professional	293.00
Senior Professional	315.00
Technicians	
Assistant Technicians	142.00
Technicians	170.00
Senior Technicians	198.00
Support Staff	
Document Processing / Clerical	125.00
Project Equipment Communication Expense (PECE) Per DL Hour	**13.00**
Other Direct Expenses	
Travel and Subsistence	at cost
Mileage at IRS Reimbursement Rate Effective January 1, 2020	$.575 per mile
Subconsultant	cost + 10%
Other Direct Cost	cost + 10%
Expert Witness	Rate x 2.0

This fee schedule is subject to annual revisions due to labor adjustments.

EXHIBIT A — WORK ORDER

Consultant: Carollo Engineers, Inc.

Work Order Number: 3

Date Issued: February 18, 2021 ("Effective Date")

This Work Order is issued by Authority to Consultant as of the date set forth above and is subject to all terms and conditions of the Consulting Services Agreement by and between the Authority and the Consultant.

1. **Scope of Work** (the "**Work**"). Consultant agrees to furnish all management, supervision, labor, equipment, materials, and supplies required to perform the following Work as set forth herein, subject to the terms of the Agreement. The Scope of Work is contained in the proposal included as Attachment 1.

2. **Work Order Price**. Authority shall pay the Consultant the following amounts, pursuant to the terms of the Consulting Services Agreement:

2.1 Time and materials. Authority shall pay Consultant an amount not to exceed $65,726. Consultant shall submit monthly applications for payment based upon hours spent at the hourly rates included in the Compensation Table as set forth in Attachment 2 to this Work Order. Consultant shall invoice the actual cost (with no markup) of materials actually used for the performance of the Work. Authority shall pay Consultant's approved monthly applications for payment within thirty (30) days of receipt.

3. **Reimbursable Expenses**. Authority shall compensate Consultant for Reimbursable Expenses included in the Compensation Table as set forth in Attachment 1 to this Work Order, which shall be reimbursed upon showing of paid invoices (or other suitable proof of payment). Reimbursable Expenses are paid in addition to the compensation stated in the Work Order.

4. **Schedule and Time for Completion**. Consultant shall complete the Scope of Work by the following dates:

4.1 **Commencement of the Work**. Consultant shall commence work on or after the Effective Date.

4.2 **Completion of the Work**. Consultant shall complete its services under the Work Order by December 31, 2021.

5. **Authority's Representative**. Authority's Representative for the Work to be performed under this Work Order is Jackie Zipkin, General Manager.

The Parties have executed this Work Order as of the date signed by the Authority.

AUTHORITY:

Signature

Jacqueline Zipkin, P.E.
Name

General Manager
Title

CONSULTANT:

Signature

Rick L. Chan, P.E.
Name

Senior Vice President
Title

Signature

Name

Title

ATTACHMENT 1

SCOPE OF WORK

Task 1 – Existing Information Gathering

Task 1 is focused on review of existing data. No new sampling is part of Task 1. Task 1 will begin with a site visit to each of the chlorine dosing locations, monitoring locations, and bacteria sampling stations to gain a better understanding of the system. While EBDA has authority over the Transport System, the disinfection operations at all six of the WWTPs is a necessary component of this systematic analysis. As such, each of the WWTPs will be engaged either by EBDA with support by Carollo or by Carollo directly to understand (by email survey and phone):

1. Undisinfected Secondary Effluent Water Quality
    - Nitrogen speciation.
    - BOD, TOC, Turbidity, TSS.
    - Bacterial counts.

2. Disinfection Practices.
    - Dimensions of chlorine contact basins and any records of tracer testing.
    - Contact Time at average dry weather flow (ADWF) and peak wet weather flow (PWWF).
    - Type of disinfection (e.g., sodium hypochlorite, UV, etc).
    - Disinfection monitoring and control system, including location of monitoring provided to EBDA.
    - Internal WWTP performance goals and monitoring results (up to one calendar year of data).
    - Daily and seasonal variability.

3. Laboratory methods (e.g., bacterial analysis methods).

4. Bench, pilot, or full-scale disinfection studies.

Carollo will also consult with DSRSD to gather information regarding the LAVWMA Pump Station and Sample Station. Further, the Transport System bacterial monitoring results, sodium hypochlorite dosing and residual amounts and frequency, and corresponding flow values in the Transport System will be compiled by EBDA and provided to Carollo for analysis.

Last, the Transport System flows are dynamic, being a coupling of variable flows from the different WWTPs and the controlled pumping across the system. Using information that already exists in the hydraulic model and examining a year of data, Carollo will document a range of detention times in various key pipe segments for low flow events, documenting potential locations for loss of chlorine residual.

Task 1 Deliverables:

For this work, Carollo will provide the following, with the support and review of EBDA:

- Develop a survey for the WWTPs, submit the survey to the WWTPs for their input, meet one time by phone with each of the WWTPs to review the survey, and summarize the results;
- Review and summarize one year of data from the Transport System, provided to Carollo by EBDA.
- Evaluate and document the effluent travel times within the collection system for one calendar year of time, documenting low flow periods where effluent stagnation is anticipated (resulting in lost

chlorine residual and bacterial regrowth) as well as the frequency and duration of flushing events, which may coincide with compliance challenges.

Task 2 – New Data Gathering

Task 1 is anticipated to result in some information gaps, in particular related to a need for additional chlorine residual levels and bacterial counts within the Transport System. With EBDA review and support, limited sampling (a few sampling events over a short period of time) will be requested to be performed by EBDA, with lab costs covered directly by EBDA. This sampling is anticipated to occur in the early Summer of 2021. Some additional data gathering from the six WWTPs may also prove useful. With EBDA support, Carollo may recommend limited data gathering at one or more of the WWTPs, with sampling and laboratory work performed by the participating WWTPs or by EBDA.

Task 2 Deliverables:

For this work, Carollo will provide the following, with the support and review of EBDA:

- Develop a request for each WWTP and for EBDA to collect additional information; and
- Evaluate and summarize the new information.

Task 3 – Summary Report

Carollo will compile the information gained in Tasks 1 and 2 and develop summaries and recommendations.

Task 3 Deliverables:

For this work, Carollo will, with the support and review of EBDA, develop a Summary Report, Draft and Final, that includes:

- Effluent disinfection methods, challenges, and operational safety factors for compliance with bacterial limits for all WWTPs;
- Transport System challenges pertaining to chlorine residual and regrowth;
- Standard Operating Procedure (SOP) for compliance troubleshooting and remediation within the Transport System; and Standard Operating Procedure (SOP) for routine chlorine dosing in the Transport System to prevent bacterial outbreaks, including optimal residual levels leaving each WWTP and locations and levels for EBDA addition of sodium hypochlorite.

Task 4 – Meetings and Management

Carollo will manage the project and provide monthly updates via MS Teams and billings to EBDA staff (EBDA General Manager and Operations and Maintenance Manager). Carollo will also participate in two meetings of the Managers Advisory Committee (MAC), once at the start of the project and once when preliminary recommendations have been developed. It is anticipated that these meetings will be via MS Teams or other online platform due to COVID precautions). Carollo staff will meet with EBDA staff, either in person or via MS Teams (depending upon COVID precuations) to present and review the Draft Report.

Task 4 Deliverables:

- Agenda and meeting minutes for all meetings.
- Progress reports and invoices.

ATTACHMENT 2

COMPENSATION SCHEDULE

Engineers...Working Wonders With Water®

2795 Mitchell Drive, Walnut Creek, California 94598
P. 925.932.1710 | F. 925.930.0208

January 15, 2021

East Bay Dischargers Authority
Attention: Juanita Villasenor
2651 Grant Avenue
San Lorenzo, CA 94580-1841

ELECTRONIC SUBMISSION TO juanita@ebda.org

Subject: Cost Proposal to Develop a Disinfection Master Plan

Dear Ms. Villasenor,

Enclosed you will find Carollo Engineers' Cost Proposal and Labor Rate Fee Schedule to develop a disinfection master plan as requested in the subject Request for Proposals (RFP). It contains hourly rates by positions, estimated labor hours, direct expenses, and other costs needed to successfully execute this contract.

As presented in our proposal, we submit an expert team capable of performing all tasks within the scope of work provided in the RFP. Should you have any questions, please do not hesitate to contact me at 925.788.9857 or via email to ASalveson@Carollo.com. Thank you for the opportunity to present our ideas and we look forward to the prospect of working with you on this important project.

Sincerely,
CAROLLO ENGINEERS, INC.

Andrew Salveson, PE
Vice President and Disinfection Chief Technologist

Task	Notes	Nicola Fontaine	Ryan Orgill	Andrew Salveson	Amos Branch	Assistant Professional	Support Staff	Labor Cost	PECE	Travel	Total Task
		($188/hr)	($188/hr)	($273/hr)	($188/hr)	($188/hr)	($125/hr)	(by Task)	(by Task)	(by Task)	(by Task)
Task 1 - Existing Information Gathering	EBDA system site visit included for two Carollo staff	7	12	16	26	60	0	$24,108	$1,573	$500	$26,181
Task 2 - New Data Gathering		5	0	5	20	22	0	$10,201	$676	$0	$10,877
Task 3 - Summary Report		4	2	2	32	22	8	$12,826	$806	$0	$13,632
Task 4 - Meetings and Management	Includes two MAC meetings, one draft report meeting with EBDA staff, and monthly progress update meetings spanning 9 months of schedule	23	2	9	13	24	0	$14,113	$923	$0	$15,036
Totals		**39**	**16**	**32**	**91**	**128**	**8**	**$61,248**	**$3,978**	**$500**	**$65,726**
									TOTAL		**$65,726**

CAROLLO ENGINEERS, INC.
FEE SCHEDULE

As of January 1, 2020
California

	Hourly Rate
Engineers/Scientists	
Assistant Professional	$188.00
Professional	230.00
Project Professional	273.00
Lead Project Professional	293.00
Senior Professional	315.00
Technicians	
Assistant Technicians	142.00
Technicians	170.00
Senior Technicians	198.00
Support Staff	
Document Processing / Clerical	125.00
Project Equipment Communication Expense (PECE) Per DL Hour	**13.00**
Other Direct Expenses	
Travel and Subsistence	at cost
Mileage at IRS Reimbursement Rate Effective January 1, 2020	$.575 per mile
Subconsultant	cost + 10%
Other Direct Cost	cost + 10%
Expert Witness	Rate x 2.0

This fee schedule is subject to annual revisions due to labor adjustments.