



EAST BAY DISCHARGERS AUTHORITY
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A Joint Powers Public Agency

ITEM NO. 14

**REGULATORY AFFAIRS COMMITTEE
AGENDA**

**Tuesday, July 16, 2019
8:00 A.M.**

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

Committee Members: Cutter (Chair); Walters

RA1. Call to Order

RA2. Roll Call

RA3. Public Forum

RA4. Status Report – NPDES Report

(The Committee will review NPDES Permit compliance data for March 2019.)

RA5. Microplastics Update

(The Committee will discuss recent research regarding sources of microplastics to the Bay.)

RA6. Update on Nature-Based Solutions

(The Committee will discuss recent activities related to wetlands and horizontal levees.)

RA7. Adjournment

(Any member of the public may address the Committee at the commencement of the meeting on any matter within the jurisdiction of the Committee. This should not relate to any item on the agenda. Each person addressing the Committee should 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 Committee on any agenda item should do so at the time the item is considered. Oral comments should be limited to three minutes per individual or ten minutes for an organization. Speaker's cards will be available and are to be completed prior to speaking.)

(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 (510) 278-5910 or kyambao@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.)

**The next Regulatory Affairs Committee meeting is scheduled on
Wednesday, August 14, 2019 at 9:00 a.m.**

ITEM NO. RA4 STATUS REPORT – NPDES PERMIT

Recommendation

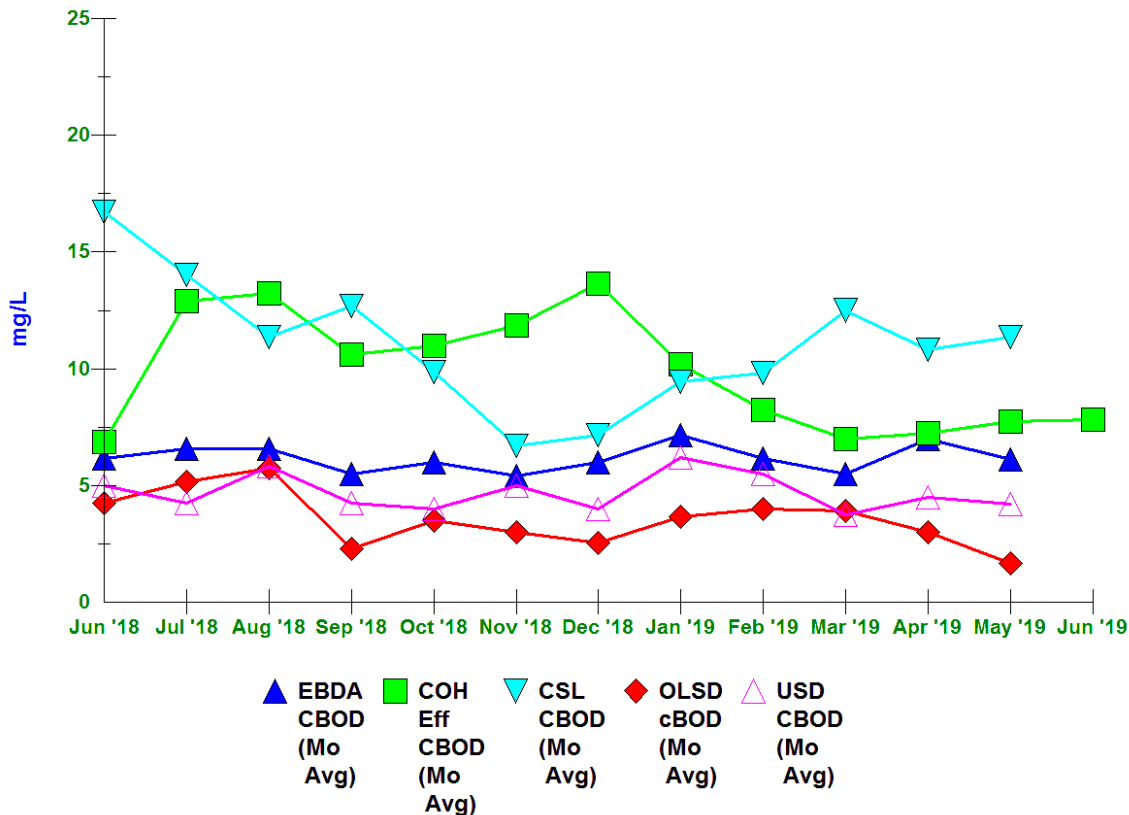
For the Committee’s information only; no action is required.

Permit Compliance Issues

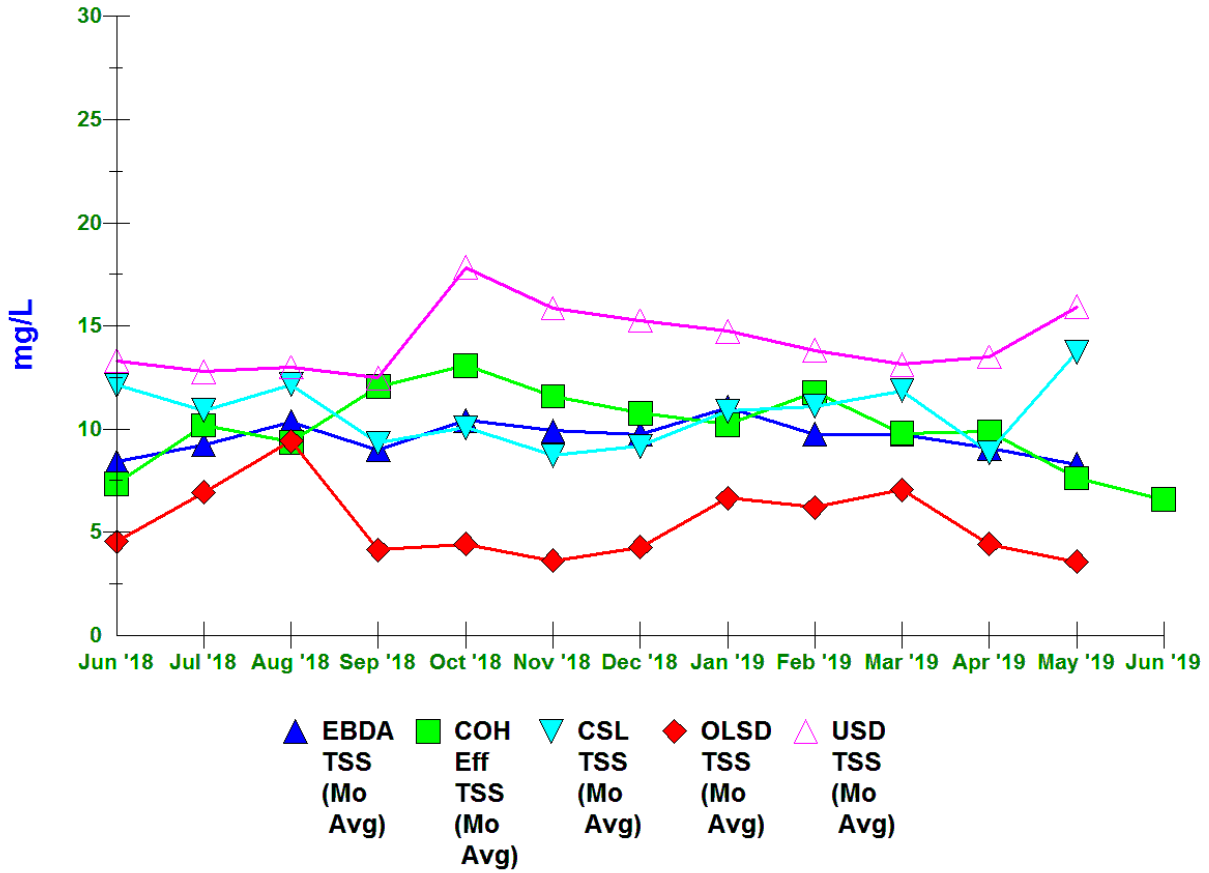
There were no NPDES permit violations in May and preliminary data from June are also free of permit exceedances. Member Agency CBOD and TSS performance are shown below. A table with bacterial indicators is also included.

As noted last month, bacterial regrowth tends to accelerate as the weather warms in the summer months, and EBDA staff requested that the Member Agencies increase their chlorine dose to prevent this. EBDA did experience one very high value of 1600 MPN/100 mL for fecal coliform on June 5, 2019. Staff kept chlorine dosing high to ensure that additional high bacteria results were not detected. Because anomalous high bacteria results can occur, effluent limits are based on 90 percentile values and geometric means. Therefore, one high result does not constitute a violation. All subsequent results in June were low, and so EBDA remained in full compliance with bacteria effluent limits. Complete results are shown in the table below.

EBDA CBOD (Limit=25 ppm)



EBDA TSS (Limit 30 ppm)



EBDA EFF TSS

Agenda Explanation
 East Bay Dischargers Authority
 Regulatory Affairs Committee
 July 16, 2019

EBDA Bacterial Indicators

	FECAL	ENTERO	
Date	MPN/ 100mL	MPN/ 100mL	MPN/ 100mL
Limit (Geomean)	500		240
Jan 2019, Geomean	6		3
Feb 2019, Geomean	3		3
Mar 2019, Geomean	7		2
April 2019, Geomean	7	<	2
5/1/2019	8	<	2
5/6/2019	8	<	2
5/7/2019	70		4
5/8/2019	33		2
5/13/2019	33		2
5/14/2019	130		2
5/15/2019	2		4
5/20/2019	8	<	2
5/21/2019	4	<	2
5/27/2019	11	<	2
5/28/2019	13		2
May 2019, Geomean	14		2
6/3/2019	24	<	2
6/4/2019	17	<	2
6/5/2019	1600		17
6/10/2019	9		34
6/11/2019	33		6
6/12/2019	4		2
6/17/2019	3		2
6/18/2019	2		2
6/19/2019	46	<	2
6/24/2019	16	<	2
6/25/2019	4		2
June 2019, Geomean	16		3

ITEM NO. RA5 MICROPLASTICS UPDATE

Recommendation

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

Background

Microplastics are tiny pellets and fragments of plastic, and they have been found to be ubiquitous in the environment. Microplastics find their way to waterbodies through a variety of sources, including wastewater treatment plants, which are not designed to treat them.

Discussion

In 2017, the San Francisco Estuary Institute (SFEI) and nonprofit 5Gyres began a comprehensive study of microplastics in San Francisco Bay, through a grant from the Gordon and Betty Moore Foundation and funding from the Regional Monitoring Program. The two-year study included sampling in the Bay, outside the Golden Gate, and in stormwater and wastewater discharges including EBDA's. An overview of the study and its drivers can be found here <https://www.youtube.com/watch?v=8tNhEkXg6T0>.

Preliminary findings indicated that, as predicted, microplastics are abundant in San Francisco Bay, and both stormwater and wastewater contribute microplastic loads. Interestingly, stormwater contributes 200 times more microplastic loading to the Bay than wastewater.

Source control strategies are being evaluated for both wastewater and stormwater through a Microplastics Policy Advisory Committee in which the General Manager has been participating. The Committee is comprised of a range of stakeholders including environmental non-governmental organizations and textile manufacturers. A likely pathway for microplastics to wastewater plants is via fibers shed from clothing during washing. Therefore, source control policy discussions have focused on opportunities for clothing sheddability standards and washing machine filters. It is widely agreed that this type of source control will be more cost effective than upgrading wastewater treatment plants to remove microplastics. Strategies for controlling microplastics in stormwater largely focus on reducing single-use plastics and litter broadly, as macroplastics break down into microplastics.

SFEI and 5Gyres will be releasing their report summarizing the research this Fall. A symposium to present the research is planned for October 2, 2019. It is anticipated that media coverage will accompany the release of the report and the symposium, and wastewater agencies may get questions on their contribution to the microplastics problem. BACWA has developed the attached talking points as a starting point for responses. A Fact Sheet will also be developed and distributed as the report release approaches.

BACWA Microplastics Talking Points

Introduction

Microplastics are found in many waterbodies worldwide and are viewed as a contaminant of emerging concern in San Francisco. The San Francisco Estuary Institute is the lead scientific body investigating microplastic contamination in the Bay. They are collaborating with several other scientific and academic institutions in furthering the science of microplastics. The San Francisco Regional Water Board is engaged in the scientific investigations and is not proposing any regulatory actions pending the availability of more scientific information as to whether or not microplastics pose a threat to aquatic life and water quality.

As governing boards and councils hear more about microplastics, they will be seeking information from their staffs on the status of scientific investigations, key issues, and the possibility of future regulations being imposed. As a member of the wastewater public agency community, it is important to have a common understanding of the issue and be able to convey a common message to governing bodies. These talking points are intended to present key information that BACWA members can use in briefing their respective governing bodies.

Methods of Detection: As a result of early scientific investigation, it became clear that accurately identifying a microparticle as a microplastic was going to be very challenging, expensive and time-consuming. However, if accurate detection was ignored, regulations could be adopted that would be expensive and misguided by attempting to reduce naturally occurring microparticles thought to be microplastics.

- Efforts for method standardization are a high priority and are still underway. The Southern California Coastal Water Research Project (SCCWRP) is recruiting Publicly-Owned Treatment Works (POTW) labs for method development assistance.
- Due to the labor intensiveness of spectroscopy, only a small sample of the total particle collected in recent studies have been analyzed. Even with spectroscopy, in many cases it is impossible to differentiate between natural and plastic fibers, especially if they are dyed.

Importance of different sources: Building on the scientific efforts to accurately identify microplastics and their potential negative impacts on the environment, it will

be essential to identify the sources of microplastics so the most cost-effective means for reducing microplastics can be pursued.

- Results of 24-hour composite sampling at 8 POTWs in 2018 showed that advanced secondary plants had lower microparticle counts than plants without filtration. However, the total counts are still millions per day. In aggregate, 47 billion microparticles are discharged annually to the SF Bay by POTWs, of which 21 billion are estimated to be plastic.
- Stormwater contributes more than 200 times more microparticles to the San Francisco Bay than POTWs. Runoff from industrial areas is disproportionately contributing to loading.
- Atmospheric deposition may be a significant source but is poorly understood.

Types of microparticles in POTW effluent: If POTWs are found to be a significant pathway for microplastics finding their way to the environment, it is important to understand the types of microplastics found in POTW effluent so that the most effective mean for removal can be designed.

- The majority of microparticles discharged by POTWs are fibers, followed by fragments, then foam.
- Most fibers could not be identified as natural or synthetic because the dyes mask the signal of the material.
- Of the fragments, 55% were identified as plastic.

Policy Issues: As the science matures on identification of microplastics and their impact on the environment, policies will need to be developed that address the issue. Current policy thinking is as follows:

- Due to persistence, increasing use, and lack of known toxicity thresholds, the Regional Monitoring Program (RMP) is following European Union guidance, and recommending promoting microplastics to “moderate concern” tier.
- Recommendations for reducing microfibers in wastewater effluent do not focus on end-of-pipe treatment. Instead, they include development of clothing sheddability standards as well as washing machine filtration.

ITEM NO. RA6 UPDATE ON NATURE BASED SOLUTIONS

Recommendation

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

Background

Wetlands, horizontal levees, and other "Nature-Based Solutions" (NBS) have the potential to provide multiple benefits including water quality improvement through reduction of nutrients and contaminants of emerging concern, creation or restoration of habitat, and protection from sea level rise.

Discussion

As discussed previously, there are three parallel efforts that staff is working to integrate to ensure effective use of resources to advance NBS concepts on the East Bay shoreline – the Transforming Shorelines Project, the BACWA Regional NBS Study, and the HASPA Shoreline Master Plan. Updates on each of these projects are provided below.

Transforming Shorelines

The Transforming Shorelines Project, led by San Francisco Estuary Partnership (SFEP), contains a number of components aimed at advancing NBS at wastewater treatment plants. Elements include:

- Establishment of the Transforming Shorelines Collaborative, a stakeholder group that will collaborate on challenges and opportunities associated with NBS projects around the Bay, including San Leandro, Hayward, Oro Loma, and others
- Development of a toolkit for NBS at wastewater treatment plants, including cost-benefit analysis and design guidelines
- Continued UC Berkeley research at the Oro Loma Horizontal Levee demonstration project, including study of reverse osmosis (RO) concentrate treatment
- A feasibility study for NBS at the Hayward Ponds
- Design and environmental permitting of the EBDA "First Mile" horizontal levee project

The Transforming Shorelines Project will be funded by a grant from the EPA Water Quality Improvement Fund. The grant was announced in the Spring but was just formally awarded to SFEP at the end of June. The next step for EBDA will be consideration of a subcontract with SFEP for the First Mile and Hayward portions of the grant, which EBDA will project manage. Staff expects to bring that subcontract to the Commission for consideration in the next couple of months.

The grant requires matching funding to be allocated by the local agencies. In order to maximize leverage and minimize cash funding requirements, the bulk of the match proposed by the Transforming Shorelines agencies (\$1.2M) came in the form of funds already being spent by Oro Loma on their nutrient optimization project. Additional small cash or in-kind match contributions are coming from SFEP, Hayward, San Leandro, and Oro Loma. No match funding is expected from EBDA.

In approving the use of its matching funds, the Oro Loma Board received a number of comments from the public related to the First Mile project. Specifically, several residents of the Heron Bay community, which is located adjacent to the proposed project according to

preliminary concept graphics, expressed concern regarding potential health effects of using wastewater as a freshwater source for the levee. Oro Loma's General Manager, with input from EBDA, developed the attached fact sheet to clear up any misconceptions about the project. Oro Loma and EBDA staff are committed to a robust community engagement process, beginning as soon as the project is contracted. This will include discussions with landowners both north and south of the Oro Loma Plant about potential alignments for the project.

BACWA NBS Study

As part of the renewed Nutrients Watershed Permit, which became effective on July 1, 2019, the wastewater agencies around the Bay committed to spending \$500k through BACWA to evaluate opportunities for using NBS to reduce nutrient loads to the Bay while achieving the other benefits related to habitat and climate resilience, and associated costs. This study is intended to be a companion to the regional study of the cost of nutrient reduction through conventional treatment technology funded by BACWA and developed by HDR under the last permit term. Under the new permit, BACWA will also be funding a regional summary of nutrient reductions through water recycling to complete the menu of options.

BACWA has contracted with San Francisco Estuary Institute (SFEI) to perform the NBS study. A kick-off meeting with BACWA's Steering Committee will be held on July 16, 2019. The work will build on the work done by SFEI on NBS for sea level rise adaptation under the Adaptation Atlas project, as well as the ongoing scientific work SFEI is doing on the San Francisco Bay Nutrient Management Strategy. Since there is considerable potential overlap between the BACWA study and the Transforming Shorelines project, particularly on the toolkit, EBDA staff is working closely with the managers of both projects to ensure that they are coordinated and complement rather than duplicating efforts.

HASPA Shoreline Master Plan

The Hayward Area Shoreline Planning Agency (HASPA) is currently in the process of developing a Shoreline Master Plan for the area between Highway 92 and Bockman Canal. Following participating in a Stakeholder Workshop for the Master Plan in May, EBDA staff met with the HASPA Project Manager to discuss opportunities for collaboration. HASPA's PM was very interested in working together on how projects like the Hayward wetland and the First Mile might be integrated into and/or coordinated with the Master Plan. This included the potential to combine CEQA efforts. Discussions will continue as the projects and the Master Plan takes shape.

Project Fact Sheet – Transforming Shorelines Grant Application – First Mile Effort

What is the timeline for the project and potential efforts to construct a Horizontal Levee?

If the community wanted a Horizontal Levee along the East Bay Shoreline, the earliest that it may be constructed is in a decade or more. The work we are doing as a part of the grant will help inform decisions decades from now. The grant scope is expected to be completed within 5 years. During this time period, the project partners will engage a wide array of experts, residents and local government entities to consult on concerns, opportunities and best practices for the final plan. At the end of five years, the deliverables will include several reports and a conceptual plan set. Staff expects one of the reports to identify several permitting roadblocks that will literally take an act of Congress and/or State Legislature to resolve. The work to remove regulatory barriers (if it is deemed worthwhile) will likely take significant time and will be led by an agency other than Oro Loma.

What is a Horizontal Levee? Why is it being discussed in relation to the shoreline?

A horizontal levee is a multi-benefit concept proposed to provide flood protection from rising seas. It is considered multi-benefit because it provides habitat and water quality benefits in addition to flood control. It is being considered as a potential way to respond to sea rise using 'green infrastructure'. The habitat it creates is important because many of the existing marshlands are projected to be under water (especially when sea rise is coupled with a storm surge). Providing an upland transition zone will help protect the many species that make the marsh their home. The horizontal portion of the levee also absorbs energy, which allows a smaller, FEMA certified levee to protect the existing development.

What is the source of water used in a Horizontal Levee?

The native marsh plants planned for the Horizontal Levee require fresh water. As currently conceptualized, it will be fed from pipes buried two feet below the surface. The source of fresh water can be potable water, stormwater, advanced secondary treated wastewater effluent, purified recycled water, or recycled water concentrate streams. Each source has various tradeoffs. During the public engagement portions of the project, we will discuss the various tradeoffs and document public preferences.

Why hasn't the public been involved to date?

To date, no funding has been available. In December 2018, the San Francisco Estuary Partnership submitted a grant application to the EPA in partnership with the San Francisco Estuary Institute, Oro Loma Sanitary District, East Bay Dischargers Authority, UC Berkeley, City of San Leandro, and City Hayward. The application leveraged funds being spent by Oro Loma to upgrade its treatment process (construction in progress now). The reason we have not started the planned public engagement tasks is we have not been formally awarded the grant and have no funding. A formal award and funding is expected in September 2019. One of the earliest scope items is to engage the public and receive input. The work outside the treatment plant involves studies to evaluate feasibility only and the public will get an opportunity to provide input at the earliest stages of the planning.

What has been done to tell the public about the demonstration at Oro Loma?

Over the past three years, the District has hosted over 3,000 visitors to the Horizontal Levee Demonstration Project. Visitors have included people from the community, elected officials, local Bay Area newspapers, KRON Channel 4 News, National Public Radio's Marketwatch Program (airing July 2019), national EPA leaders, a delegation from the Paris Climate Accord, approximately 80 staff members from the SF Regional Water Quality Control Board, over 100 volunteers from Save the Bay, a science policy briefing at the Santa Clara Valley Water District, councils and staff from local government agencies, and multiple academic presentations by UC Berkeley and Save the Bay. In addition, we have filmed many of the key environmental stakeholders and posted these videos on our website. The project has won multiple awards and the Oro Loma Board of Directors was awarded with the SF Bay Hero Award for their leadership on climate resiliency by the SF Bay Institute.

What will this cost Oro Loma rate payers?

There are no costs to the Oro Loma ratepayer. Although the EPA grant requires a dollar for dollar match, the District is using expenditures to improve its treatment process to provide the matching funds. The grant allows the District to obtain greater value for the work it is already paying for. The District has agreed to fund \$35,000/year to support further work by UC Berkeley researchers. The \$35,000/year funding is not a grant requirement.

Are similar projects being proposed in other residential areas?

As communities prepare to adapt to sea level rise, many are considering multi-benefit and nature-based approaches including horizontal levees. These kinds of projects are becoming commonplace, because they are cost effective with many benefits for surrounding communities. The State Coastal Conservancy Living Shorelines project has been exploring the uses and benefits of these types of projects and more information can be found on their website: <http://www.sfbaylivingshorelines.org/>. Similar projects around San Francisco Bay are currently being evaluated to protect residents and businesses in Novato, Sunnyvale, Palo Alto, and North Richmond.