

June 1, 2020

Mr. Wade Crowfoot
Secretary for Natural Resources
Ocean Protection Council Chair
1416 Ninth Street, Suite 1311
Sacramento CA 95814

Reference/Subject: SCCWRP-SFEI project entitled "*Characterizing the Removal of Microplastics by California Wastewater Treatment Plants: Implications for Management Strategies*"

Dear Mr. Crowfoot,

Please accept this letter of support for the Southern California Coastal Water Research Project (SCCWRP)-San Francisco Estuarine Institute (SFEI) project entitled "*Characterizing the Removal of Microplastics by California Wastewater Treatment Plants: Implications for Management Strategies.*"

The proposed work will quantify statewide trends in the levels of microplastic contaminants that enter and leave California's wastewater treatment facilities. It will also evaluate how various treatment technologies in California's wastewater plants eliminate microplastics from water streams. Addressing these information data gaps is important for developing solutions to reduce microplastic pollution, and we are happy to contribute to this goal.

Beyond this letter of support for the project, we will be pleased to work with SCCWRP to provide samples of wastewater and biosolids from two of our facilities, the Point Loma Wastewater Treatment Plant (PLWTP) and South Bay Water Reclamation Plant (SCWRP). These systems have different catchment systems, as well as different treatment trains, which should provide a nice contrast of conditions. We are happy to provide those samples in ways that also allow us to determine how levels and composition of microplastics changes over wet and dry seasons.

Please feel free to contact me if you would like to hear more about our interest in this project.

Sincerely,



Peter S. Vroom, PhD
Deputy Public Utilities Director



REGIONAL
WATER QUALITY
CONTROL PLANT

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June 4, 2020

Wade Crowfoot
Secretary for Natural Resources
Ocean Protection Council Chair
1416 Ninth Street, Suite 1311
Sacramento, CA 95814

Dear Wade Crowfoot,

The City of Palo Alto is pleased to work with SFEI on their proposal with Southern California Coastal Water Research Project (SCCWRP) on characterizing the removal of microplastics by California wastewater treatment plants. This is an important topic to understand how much microplastics enter treatment plants, how much is discharged, and how much is removed by various treatment projects. We would like to provide wastewater samples and biosolid samples from the various points in our treatment plant for two sampling events: once in wet weather, once in dry weather.

Sincerely,

DocuSigned by:

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Karin North
Watershed Protection Manager
City of Palo Alto

Cc Dr. Rebecca Sutton



June 16, 2020

Wade Crowfoot, Secretary for Natural Resources
Chair, California Ocean Protection Council
California Natural Resources Agency
1416 Ninth Street, Suite 1311
Sacramento, CA 95814

Sent via: COPCpublic@resources.ca.gov.

RE: Item 9 – Consideration of Authorization to Disperse Funds to Address Microplastics in Coastal and Marine Ecosystems

Dear Secretary Crowfoot and members of the Ocean Protection Council:

The California Coastkeeper Alliance (CCKA) represents local California Waterkeeper organizations working to protect water quality throughout the state and along California's coast for the benefit of California communities and ecosystems. On behalf of local California Waterkeepers, we write in support of the Ocean Protection Council (OPC)'s proposed disbursement of funds for two projects ("Identification of sources and pathways for microplastics in stormwater" and "Efficacy of microplastic removal from various wastewater treatment methods") to address microplastics in coastal and marine ecosystems.

Microplastics are increasingly found in ocean fish and wildlife, causing starvation and reproductive consequences, with unknown impacts to the communities who depend on the ocean for sustenance. Microplastics also pose a significant threat to water quality and drinking water supplies. Microplastics in drinking water first gained attention in 2017 with the release of a global report¹ that found that 83 percent of water samples worldwide contain microplastics, and a concerning 94 percent of samples taken in the United States contain microplastics. Since the release of these findings, other peer-reviewed studies have consistently shown the presence of microplastics in bottled water, freshwater, wells, and treatment plant water.

Though data is limited, microplastics are now ubiquitous in the environment and have been detected in a broad range of marine water, wastewater, fresh water and drinking water. In the Bay Area alone, seven trillion tiny pieces of plastic – equivalent to about a million pieces each for every man, woman, and child in the Bay Area – flow into San Francisco Bay annually. The tiny particles make their way into the ocean, into the stomachs of marine animals, and ultimately become part of the food and water people consume. Despite the profound impacts of microplastics, the issue has a relatively low profile, with few solutions currently on the table.

Critically, a recent study by the San Francisco Estuary Institute (SFEI)² found that stormwater is the primary source of microplastics in California's coastal waters, with microplastics 300 times more likely to come from storm drains than any other sources. Synthetic clothing and textiles also release plastic microfibers with every wash that cannot be filtered out by traditional wastewater facilities. In the Bay Area, researchers have determined that billions of microplastics also flow through the region's 40 wastewater treatment facilities annually.

¹ Mary Kosuth, Elizabeth V. Wattenberg, Sherri A., SYNTHETIC POLYMER CONTAMINATION IN GLOBAL DRINKING WATER. FINAL REPORT: May 16, 2017.

² Sutton, R.; Lin, D.; Sedlak, M.; Box, C.; Gilbreath, A.; Holleman, R.; Miller, L.; Wong, A.; Munno, K.; Zhu, X.; et al UNDERSTANDING MICROPLASTIC LEVELS, PATHWAYS, AND TRANSPORT IN THE SAN FRANCISCO REGION. SFEI Contribution No. 950. San Francisco Estuary Institute. 2019.

The two studies proposed by the OPC are critical to meet Objective 3.4.4. of the OPC's Strategic Plan and to ultimately inform a statewide microplastics strategy and establish a program of implementation that manages and prevents microplastic pollution from entering California's waterways. Funding SFEI to conduct a follow-up study to identify the sources and pathways of microplastics in stormwater will advance our understanding of this prevalent source of microplastic pollution, and ultimately identify solutions to this flow of micro-pollution into our bays, estuaries, and streams.

It is important to note that the State Water Board's Trash Amendments - intended to prevent plastic pollution from reaching our waterways - are primarily focused on plastic pollution larger than 5mm. However, the state should be aware that the Trash Amendments' definition of "full capture devices" includes low impact development (LID) stormwater capture BMPs (ex: bioswales). This is important because LID BMPs – used as full capture devices to comply with the Trash Amendments – provides the additional benefit of capturing plastic particles less than 5mm. We urge the OPC, either in this study or a future study, to analyze the efficacy of LID stormwater capture BMPs as a strategy to prevent microplastics from entering our waterways. The study should analyze both the effectiveness of LID BMPs to control microplastics, but also the *potential* unintended consequences of diverting stormwater laden with microplastics into LID. Unintended consequences could include potential reduction of a LID's infiltration rate and/or the potential human health impacts from tainting drinking water.

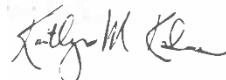
We also support studying the efficacy of microplastic removal using a variety of wastewater treatment methods is critical to remove microplastics from wastewater effluent, and ultimately support statewide efforts to increase water recycling. Here, it is critical to understand the different efficacy rates of removal from secondary, tertiary, and potable reuse treatment standards. It is also important to understand whether microplastics, once removed during the treatment process, are truly disposed of properly or whether they ultimately are discharged into a waterway through the brine disposal process. Any wastewater and/or water recycling treatment that filters microplastics but ultimately discharges them into a waterway through brine disposal should not be considered microplastic removal.

Together, these two studies will improve our understanding of the sources and pathways of microplastics into the environment and identify much-needed solutions to prevent microplastic pollution. We applaud the OPC for investing in these projects to inform a statewide microplastic strategy and to both identify and implement solutions that will provide tangible benefits to water quality and our health.

Sincerely,



Sean Bothwell
Executive Director
California Coastkeeper Alliance



Kaitlyn Kalua
Policy Analyst
California Coastkeeper Alliance



June 17, 2020

Wade Crowfoot, Secretary for Natural Resources
Chair, California Ocean Protection Council
California Natural Resources Agency
1416 Ninth Street, Suite 1311
Sacramento, CA 95814

SUBJECT: Agenda Item #9b – Efficacy of microplastic removal from various wastewater treatment methods

Dear Chair Crowfoot,

On behalf of the California Association of Sanitation Agencies (CASA), thank you for the opportunity to provide comments on the microplastics research items on your agenda. CASA represents more than 125 public agencies and municipalities that engage wastewater collection, treatment, recycling, and resource recovery. Our members are committed to the protection of the environment and public health, and like the OPC, we are concerned with the proliferation of plastic that can result in microplastics entering our facilities.

CASA values its partnership with the OPC, and we convey our appreciation to Dr. Gold and Holly Wyer for meeting with us to discuss the research proposed under agenda item #9b. CASA sponsored Senate Bill 1263 in 2018, which called for the OPC to develop its statewide microplastics strategy, and the proposed research on wastewater treatment effectiveness is part of that endeavor. We also continue to track and work on microplastics issues with a variety of regulatory agencies and research entities across the state and country.

SFEI's seminal 2019 microplastics study found that loadings from wastewater comprised only 0.03% of the overall contributions of microplastics, observing *"a plastic polymer that is 1% of the stormwater microplastic load would be three to five times greater than the entire wastewater microplastic load)"* (p. 72/402). SFEI's study also concluded that, *"It is likely far more cost-effective to prevent pollution in the first place (e.g., bans on sources of microplastic pollution, such as microbeads) or to control it directly at the point of entry (e.g., providing filters for washing machines),"* (p. 115/402).

In light of these findings, we were surprised to see the level of funding recommended for wastewater research in comparison to stormwater research, as it is disproportionate to its importance as a source. We appreciated learning from Dr. Gold that studying removal through wastewater treatment processes can help demonstrate the safety of recycled water. We also understand the research proposed in #9b *"will inform whether upgrades to certain wastewater treatment processes may be warranted,"* but from the wastewater community's perspective our treatment facilities are highly efficient at removing microparticles, in the range of 83% to 99.9%, with primary treatment removing nearly 80% of microplastics (Carr et al., 2016; Dris et al., 2015; Michielssen et al., 2016; Mintenig et al., 2017; Murphy et al., 2016; Talvitie et al., 2017).

From SB 1263, Public Resources Code § 35635 (f) provides *"(f) In developing and implementing the Statewide Microplastics Strategy, the council may utilize existing information and leverage ongoing efforts, where possible."* With an eye toward promoting studies that would move the needle on our understanding of microplastics, we recommend moving quickly on efforts that could be performed in tandem with the projects considered at your June 19 meeting. Given the latest scientific results from SFEI in 2019 and the established literature on the effectiveness of wastewater treatment in addressing microplastics issues, wastewater treatment should not be the primary focus of the OPC's research efforts.

The OPC may instead be interested in focusing its efforts on the substantial data gap in our understanding of the sources of microplastics pollution in Southern California. Alternative projects that would provide appropriate context for the data in #9b, which could inform the development of studies in subsequent years that might yield more beneficial data and potential solutions for addressing microplastics issues include:

1. **Adapting and replicating the broader SFEI study for Southern California, for real comparability.** If it would be too resource intensive to adapt the entire SFEI study, the OPC and SCCWRP should at least prioritize replicating a stormwater sources study to assess relative contributions from multiple environmental matrices instead of focusing on one, extremely low contributing matrix (POTWs);
2. **Efficacy of stormwater BMPs.** There is a timeliness to this information, and it is critical for the development of an actionable statewide microplastics strategy;
3. **Evaluating atmospheric deposition** to comprehensively assess relative contributions to maximize reduction of microplastics pollution;
4. **Adapting the stormwater sources and pathways research in #9a** to Southern California.

Addressing each of these issues would allow the OPC to have a better informed statewide strategy for how to maximize reduction of microplastic pollution. We suggest SFEI and SCCWRP consider amending the final detailed research work plans with elements to address the questions above. We also recommend the OPC and stakeholders identify and develop projects for the September 17 and December 15 meetings so that sampling may begin during the 2020-21 rainy season and to allow for the data in #9b to be put in appropriate context.

We appreciate the opportunity to provide comments, and we are grateful to the Director and staff for meeting with us to explore these ideas in further detail. The dialogue and discourse is welcomed, and we look forward to partnering on research, sharing our members' expertise, and engaging together in source control and pollution prevention strategies. Beyond the microplastics item, we also would like to be part of the discussions and process on the ocean acidification and hypoxia research as it moves forward with regard to the scope of research and model runs which are chosen. If there any questions about these comments, please do not hesitate to reach me directly at (916) 694-9269 or jvoskuhl@casaweb.org.

Thank you,



Jared Voskuhl
Manager of Regulatory Affairs

CC: Members, California Ocean Protection Council
Mark Gold, Executive Director, California Ocean Protection Council