CALIFORNIA ASSOCIATION of SANITATION AGENCIES
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Submitted via COPCpublic@resources.ca.gov

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1416 Ninth Street, Suite 1311
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SUBJECT: Statewide Microplastics Strategy: Report to California Legislature

Dear Dr. Kelly,

On behalf of the California Association of Sanitation Agencies (CASA), thank you for the opportunity to provide comments on the OPC's draft "Statewide Microplastics Strategy: Report to the Legislature" (Strategy). CASA represents more than 150 public agencies and municipalities in California that engage in wastewater collection, treatment, recycling, and resource recovery, and our vision is to advance sound public policy and shape programs that empower the clean water community to drive sustainability, protect public health, and advance circular water solutions.

CASA was the organizational sponsor of Senate Bill 1263 (2018) by Anthony Portantino which required the OPC to develop the Strategy, and we would like to compliment the OPC for its vision and guidance to protect California's coast from microplastics pollution. We are generally supportive of the Strategy's two-track approach of identifying presently available solutions and detailing the additional scientific inquiries to pursue. Moreover, CASA appreciated the opportunity to support the OPC and the Southern California Coastal Water Research Project (SCCWRP) on the microplastics study of wastewater treatment removal effectiveness, which is included in the Strategy. CASA's participating members have had a unique vantage point for deploying newly standardized methods to collect and analyze samples, and these experiences have provided all parties with meaningful information, especially as it pertains to crafting monitoring efforts in the future

Our comments below are sequential to the Strategy, and we strongly support the Pollution Prevention objective for legislative action, as subsequent discussions about Pathway Interventions via wastewater ultimately are about the transfer of microplastics from one environmental media to another, not in fact destroying and eliminating them from the environment, thereby undermining investment of public funds to protect the environment in California over the long term.

Track 1 – Solutions - 1A – Pollution Prevention – An ounce of prevention is worth a pound of cure

We endorse and support the Strategy emphasizing upstream solutions to prevent and intervene with microplastic pollution before it enters the environment, and we think this Objective should be recommended as the primary solution for future legislative focus and prioritization.

70-95% of the plastics identified in marine waters derive from macroplastics like litter, underscoring the critical value of existing and ongoing efforts to reduce trash in California's water. We recommend including this recognition of Secondary Microplastics in this section of the Strategy, as it is a very important consideration at the outset of the Strategy for appropriately identifying relative source contributions, understanding different outcomes for the various regulatory interventions discussed across the Strategy, and ultimately allocating resources to the Strategy's recommendations.

Further, we know from the State Water Resources Control Board's statewide investigative order of PFAS that 70% of wastewater treatment facilities above 1 MGD receive less than 5% industrial flow and that 80% of facilities receive less than 10% industrial flow. It can be uncontroversially assumed that the vast majority of loadings of microplastics reaching a wastewater treatment facility are from residential and commercial pathways, not industrial ones. Accordingly, consumer behavior around residential and commercial uses are the most effective intervention pathways, and we support the Strategy's all-of-the-above approach of "product and material regulations," "economic strategies," and "product alternatives," as it will have the greatest benefit from preventing pollution from ever entering the environment in the first place.

One clear example of this in practice is the California legislation in 2015 banning microbeads, which was followed a short time later by the passage of federal legislation. This new law was not in effect during the sampling for the 2018 SFEI study but was for the 2024 SCCWRP study, which observed significantly less microbeads from across the wastewater samples collected and analyzed. Likewise, we would expect a similar outcome for legislation around the dryer filter finding from SFEI's forthcoming research. There, preliminary findings show that dryer emissions are a major source of microfibers to the marine environment, and all commercially available secondary dryer filters that were tested significantly reduced microplastic emissions, providing critical data to inform industry standards and potential policy interventions aimed at reducing microfiber emissions at the source.

<u>Recommended Additions for 1.1A</u>

Recommendation #1 for 1A: Pollution Prevention is the elevated legislative focus;
Recommendation #2 for 1A: Acknowledge the proportion of microplastics in marine waters that originate from macroplastics.

<u>Track 1 – Solutions - 1B – Pathway interventions – Wastewater study results should Inform the Strategic Focus</u>

We greatly appreciate that the Wastewater section primarily references the aforementioned SCCWRP research on which CASA and our members partnered to evaluate wastewater treatment removal efficiency in the first half of this decade, the findings of which demonstrated that relative to influent concentrations, wastewater treatment plants remove 95.3, 99.1, and 99.9% of microplastics with primary, secondary, and tertiary treatment processes, respectively, findings which are supported in the wider literature.

With only two exceptions, all treatment facilities in California utilize secondary treatment at a minimum, so wastewater treatment as an intervention pathway already is successful. Focusing on wastewater treatment plant upgrades to tertiary treatment for "enhancing safeguards" as an intervention pathway for wastewater should be avoided, as it cannot provide a commensurate reduction in microplastics being discharged compared to the costs for wastewater agencies to move from secondary to tertiary treatment.

Moreover, not only are wastewater treatment plants incredibly effective for removing microplastics with traditional treatment, but contributions of microplastics from wastewater discharges compared to other pathways – like aerial deposition and stormwater – are immensely lower. The groundbreaking 2019 San Francisco Estuary Institute study found that wastewater loadings to the marine environment comprised only 0.03% of the overall contributions of microplastics, with the study 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). This led the study to conclude that for the wastewater sector, facility upgrades are not the solution, but rather pollution prevention is the key: "*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). These aspects of relative volumes of microplastics in wastewater also should have implications for the monitoring recommendation in Track 2 and the OPC's related "Statewide Plastics Monitoring Strategy and Planning Framework."

We do recommend appending the following sentence in this section of the Strategy regarding biosolids: "Microplastics were also observed in biosolids, although some collected solids from the treatment process are incinerated or landfilled, which affects the fate of microplastics that are filtered through the treatment process depending on the waste management practices of the facility" (p. 24/46).

In California, under Senate Bill 1383 (2016), landfill disposal of biosolids is declining, and likewise, there is only one wastewater agency remaining in the state that has a permitted incinerator in operation. Hence, this characterization in the Strategy should be updated, as effectively, land application is the primary management strategy available in California.

Further, microplastics are removed in differing quantitates of each stage of treatment. Those microplastics that are not eliminated nor destroyed by treatment, may wind up in biosolids, but the extent is unknown without a robust mass balance, as there are numerous other avenues for the removal of microplastics throughout the treatment process. There is potential for innovation and research to identify floating scum removal technologies at the primary treatment stage that specifically reduce microplastics, which could significantly reduce loadings before they move any further along the treatment process. Nevertheless, it is critical to reduce the number of microplastics entering wastewater facilities through pollution prevention and source control.

Additionally, while we concur that biosolids typically contain microplastics, the impact to soil relative to other sources needs to be examined, as well as the fate and transport of microplastics in land applied biosolids. Several studies have identified other equally important sources of microplastics to soil, including atmospheric deposition and agricultural practices, which led to higher contamination than soils with land-applied biosolids (Vollertsen and Hansen 2017). This points to the research needed in this area, the importance of investigating other pathways (Rolsky et al. 2020), and the need to evaluate the prospective adverse impact of microplastics in soil from biosolids as compared to the benefits of recycling organic matter and nutrients for uses which are well established as effective ways to improve the physical, chemical, and biological properties of soils, re-establish vegetation, and restore degraded ecosystems (Wong et al. 2021).

<u>Recommended Additions for 1.1B</u>

Recommendation #1 for 1B: Include the 2018 SFEI study's findings;
Recommendation #2 for 1B: Recognize secondary wastewater treatment as an already-effective intervention;
Recommendation #3 for 1B: Contemporize biosolids management options in California;
Recommendation #4 for 1B: Add the development of microplastics reduction strategies at the headworks via research on primary scum removal, prioritizing technologies that reduce microplastics at this stage in the treatment process;
Recommendation #5 for 1B: Evaluate the potential adverse impacts of microplastics in soil from biosolids in context by comparing the overall benefits of recycling organic matter and nutrients to the alternatives (e.g. traditional petroleum-based fertilizers) as well as to the potential management alternative of landfilling or incineration.

<u>Track 2 - Science to Inform Future Action - 1B – Monitoring Methods</u>

It follows that acknowledgement of wastewater treatment as an existing effective intervention strategy should bear on recommendations for requiring monitoring in the absence of approved collection, processing, or analytical methods, only standardized processing and analytical ones.

CASA greatly valued the opportunity to support the OPC and SCCWRP on the microplastics study of wastewater treatment removal effectiveness. Based on our experience, it is very time consuming, laborious, and costly to collect wastewater samples and far more so to analyze them using the FTIR or RAMAN methods. As efficiencies are gained on these fronts, more widespread monitoring will become increasingly feasible

We appreciate that the Strategy acknowledges the need for reliable methods before rolling out a monitoring plan, a distinction that seems implicitly recognized in the OPC's recommendations for monitoring in the companion "*Statewide Plastics Monitoring Strategy and Planning Framework*" (Strategy and Framework) document that is part of this agenda item. It specifies, "coordinating of wastewater [sampling] in parallel with urban stormwater when needed to compare these two pathways."

However, the 2022 Strategy included in Appendix A, and 2B.1.3. calls for requiring microplastic monitoring. Given the above points contextualizing detections in wastewater and the effectiveness of treatment, we discourage this approach and instead support sampling for comparative purposes as identified in the 2025 Strategy & Framework.

Moreover, for the OPC's 2022 Strategy, CASA recommended prioritizing method development before the 2025 Strategy update due to how research about characterizing microplastics in the environment had far outpaced the development of standardized methods. Notably, method development is the first step identified in SB 1263 for the Strategy. As originally envisioned in the legislation, the Strategy was conceptualized to unfold as a deliberate, stepwise scientific progression, with the statutory framework explicitly sequencing the process to begin with the development of standardized methods, which would then reliably inform the characterization of ambient concentrations and the investigation of sources. Establishing this foundational baseline was expected to be a prerequisite before developing risk assessment frameworks and subsequently evaluating policy options or source reduction techniques.

Recommended Additions for 2.1B

Recommendation #1 for 1B: Include the 2018 SFEI and SCCWRP 2024 study's findings;
Recommendation #2 for 1B: Recognize secondary wastewater treatment as an already-effective intervention;
Recommendation #3 for 1B: Continue prioritizing method development and cost-effective sampling approaches

Track 2 - Science to Inform Future Action - 3B – Sources and Pathways Prioritization

We think it is critical to directly reference in this section the available and known facts about sources and pathways which are posited in Track 1 in order to contextualize the discussion around the needed science. Specifically, 3B currently only references the 2022 Strategy in Appendix A of the 2026 Strategy:

> 2A.2.8 Based on the results of existing studies and the following completion of the ongoing SCCWRP study on wastewater treatment plant process removal efficacy, further develop microplastics reduction strategies, and monitoring recommendations based on each level of treatment, including primary, secondary, tertiary, and advanced treatment beginning in 2023. (2022 Strategy)

While there is a link in 3B to the OPC-funded SCCWRP report of wastewater removal effectiveness that's expressly mentioned in Track 1B, we would appreciate if this section again affirmatively references the quantitative results – wastewater treatment plants remove 95.3, 99.1, and 99.9% of microplastics with primary, secondary, and tertiary treatment processes, respectively. We also would appreciate if this section posits that existing wastewater treatment processes are inherently an effective intervention for preventing microplastics from reaching the marine environment, in order to inform prioritization of future action and research around microplastics matters most urgently needing further exploration to effectuate strategies around mitigating sources and pathways to the marine environment. Without it, important context is missing regarding wastewater loadings relative to other pathways, as well as relative to our existing knowledge about the predominance of secondary microplastics.

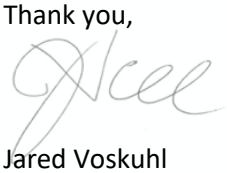
Recommended Additions for 2.3B

Recommendation #1 for 3B: Include the 2018 SFEI and SCCWRP 2024 study's findings;
Recommendation #2 for 3B: Recognize secondary wastewater treatment as an already-effective intervention;

Conclusion

In closing, we appreciate your consideration of these comments on the Strategy. We affirm our support of the OPC's scientifically based efforts to characterize and formulate options to address microplastics and commend your team's vision and leadership to protect California's coast from microplastics pollution. Source identification and source control are integral to the Strategy, and we look forward to opportunities to partner on policies, legislation, and research to achieve the Strategy's recommendations. If there any questions about these comments, please reach me at (916) 446-0388 or jvoskuhl@casaweb.org.

Thank you,



Jared Voskuhl
CASA Director of Regulatory Affairs

Attached: CASA Comment Letter on 2022 Strategy