From:	CNRA COPC Public
To:	COPC Public Distro List
Subject:	FW: OPC Mtg 2-16-2021: Public Comment on Item #4
Date:	Tuesday, February 16, 2021 11:57:50 AM

From: Coffin, Scott@Waterboards
Sent: Tuesday, February 16, 2021 11:57:44 AM (UTC-08:00) Pacific Time (US & Canada)
To: CNRA COPC Public
Subject: OPC Mtg 2-16-2021: Public Comment on Item #4

Dear Council Members,

My name is Dr. Scott Coffin, and I am a research scientist in the State Water Resources Control Board's Division of Drinking Water. As a scientist focus on impacts of microplastics to humans, and a regulator charged with protecting public health through providing clean and affordable drinking water to Californians, I believe that several of the priority actions in the staff report will complement the division of drinking water's work.

As required by Health and Safety Code 116376, the State Water Resources Control Board's Division of Drinking Water is investigating the occurrence and toxicity of microplastics in drinking water and will initiate a targeted statewide monitoring campaign beginning in July 2021. While direct human health impacts from exposure to microplastics from drinking water are uncertain, epidemiological studies suggest that continuous exposure through inhalation can cause lung cancer and other serious health concerns (Wright and Kelly 2017).

Available evidence suggests that occurrence of microplastics in surface water is ubiquitous, with synthetic fibers from clothing, fragmented particles from single-use packaging, cellulose acetate fibers from cigarette filters, and tire wear particles being the most common types of microplastics (Galafassi et al 2020). Even advanced drinking water treatment cannot remove the smallest microplastic particles - which are below 10 microns (Pivokonsky et al 2020). These smaller particles are expected to be the most toxic to humans due to their ability to enter the bloodstream and accumulate in human bodies (Wright and Kelly 2017).

When considering downstream mitigation efforts in water, it's important to recognize that there is no 'safe' place to put microplastics. For instance, wastewater treatment plants remove a considerable portion of microplastics (between 80-99%) into sludge (Hou et al 2020). When sludge is applied to crop fields as biosolids, microplastics accumulate in the topsoil, and are taken up by plants, resulting in decreased growth rates, nutrient uptake, and diminished food production yields, as well as irreversible damage to terrestrial ecosystems and soil health (Sun et al 2020; Kumar et al 2020). Further, microplastics exacerbate drought impacts to plants, which are anticipated to increase in California due to climate change (Lozano and Rillig 2020). Since plastic degrades on extremely long timescales, impacts to the environment, food security, and human health are likely irreversible (Chamas et al 2020).

Finally, a study published in in the journal Science estimates that plastic production will double by

2030 under the current trajectory (Lau et al 2020). Simply increasing efforts to properly collect and dispose plastic will not decrease inputs to the environment due to increased production. Only through a comprehensive, system change approach that implements all possible interventions, including: reduction and substitution at source; reuse; recycling; and waste management; will plastic pollution inputs into the environment decrease to pre-2016 levels by 2040 (Lau et al 2020).

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Thank you for consideration and attention,
Scott Coffin, Ph.D.