Staff Recommendation
January 24, 2023

Item 7b

Action Item:
Consideration and Approval of Disbursement of Funds to Support the Development of a Statewide Plastics Monitoring Network

Kaitlyn Kalua, J.D., Water Quality Program Manager

Recommended Action: Authorization to disburse up to $1,500,000 to support the development of a statewide plastic and microplastic (plastics) monitoring network:

7.b.1 Up to $750,000 to the Southern California Coastal Water Research Project Authority (SCCWRP) for microplastics sample collection method evaluation and standardization.

7.b.2 Up to $750,000 to San Francisco Estuary Institute (SFEI) to support the development of a statewide plastics monitoring plan.

Location: Statewide

Strategic Plan Goals and Objectives: Goal 2: Advance Equity Across Ocean and Coastal Policies and Actions; Objective 2.1 Enhance Engagement with Tribes; Objective 2.2 Enhance Engagement with Underserved Communities; Goal 3: Enhance Coastal and Marine Biodiversity; Objective 3.4: Improve Coastal and Ocean Water

Equity and Environmental Justice Considerations: 7.b.1 This project will result in foundational microplastic sample collection methods that are intended to be used in microplastic monitoring within California communities and waters to measure and evaluate microplastic contamination in California waters and communities, including future risk assessments of microplastic contamination and exposure of specific communities. This project will additionally consider microplastic sample locations and study design, including the proximity and

placement of sample locations in areas with high trash generation or water quality impairment, proximity to communities burdened by environmental or social injustice, and/or sample locations of biota that are used in subsistence fishing to evaluate the presence or concentration of microplastic particles in areas of high priority or concern.

7.b.2 This project will include direct engagement with Tribes, local community-based organizations, and impacted communities to share information and inform the development of a statewide plastics monitoring plan and ensure the final document reflects community needs and priorities, consistent with Goal 2 of the OPC Strategic Plan and forthcoming Tribal Engagement Strategy.

Exhibits:

Exhibit A: Letters of Support

Findings and Resolution:

Staff recommends that the Ocean Protection Council (OPC) adopt the following findings:

"Based on the accompanying staff report and attached exhibit(s), OPC hereby finds that:

1. The proposed projects are consistent with the purposes of Division 26.5 of the Public Resources Code, the California Ocean Protection Act;
2. The proposed projects are consistent with the Budget Act of 2022 which included a $50 million General Fund appropriation for grants or expenditures for resilience projects that conserve, protect, and restore marine wildlife and healthy ocean and coastal ecosystems; and
3. The proposed projects are not 'legal projects' that trigger the California Environmental Quality Act (CEQA) pursuant to Public Resources Code section, section 15378."

Staff further recommends that OPC adopt the following resolution pursuant to Sections 35500 *et seq.* of the Public Resources Code:

"OPC hereby approves the disbursement of up to $1,500,000 to support the development of a statewide plastic and microplastic (plastics) monitoring network through the following projects:

- Up to $750,000 to the Southern California Coastal Water Research Project Authority (SCCWRP) for microplastics sample collection method evaluation and standardization.
- Up to $750,000 to the San Francisco Estuary Institute (SFEI) to support the development of a statewide plastics monitoring plan."

Executive Summary:

Staff recommends the OPC approve the disbursement of up to $1,500,000 to support the development of a statewide plastics monitoring network and support two discrete projects: up to $750,000 to SCCWRP for microplastics sample collection and method evaluation, and up to up to $750,000 to SFEI to support the development of a statewide plastic and microplastic (plastics) monitoring plan.

OPC has a long-standing leadership role and commitment to protecting ocean health through addressing ocean litter and plastic pollution. This includes the adoption of a Council resolution entitled "Reducing and Preventing Ocean Debris" in 2007, subsequent publication of an Implementation Strategy, and updated 2018 California Ocean Litter Prevention Strategy: Addressing Marine Debris from Source to Sea (California Ocean Litter Strategy). On February 23, 2022, the Council approved the advance the research priorities of the Statewide Microplastics Strategy required to be developed by OPC in collaboration with specified state agencies by Public Resources Code section 35635 (added by Senate Bill No. 1263, Reg. Session 2017-2018).

This disbursement of funds will directly advance OPC Strategic Plan, Objective 3.4 Improve Coastal and Ocean Water Quality, Target 3.4.3: Advance development of a baseline of plastic pollution monitoring data for coastal and marine waters and a standardized approach to track the state's progress in reducing plastic pollution by 2023, by supporting the development of foundational, standardized microplastic monitoring methods and creating a phased, multi-year monitoring plan.

This project will additionally advance the priorities and objectives of the Statewide Microplastics Strategy, including but not limited to Objective 2B.1.1: Establish standardized microplastic monitoring methods (sampling and analysis of environmental samples, including marine, river, and estuarine waters, sediment, and fish tissue) with accreditation, and Objective 2B.1.2: Develop a model microplastics monitoring program and establish an ongoing integrated statewide

ambient monitoring network to quantify microplastic occurrence and effectiveness of management actions for microplastic pollution by 2024.

Using General Funds appropriated to OPC by the Budget Act of 2022 for grants or expenditures for resilience projects that conserve, protect, and restore marine wildlife and healthy ocean and coastal ecosystems, these projects will result in the foundational microplastic sample collection methods and the development of a statewide plastics monitoring plan to inform coordinated monitoring of plastic pollution in state waters.

Project Background:

Effective management of microplastics begins with understanding the extent of microplastic pollution within the state. Monitoring provides context for exposure in various environmental matrices (e.g., water, air, sediment, biological tissue) and habitats (e.g., marine, estuary, freshwater), to directly inform which areas are most contaminated and which organisms and biological communities may be at greatest risk from microplastics.

On February 23, 2022, the Council approved the Statewide Microplastics Strategy, required to be developed by OPC in collaboration with specified state agencies by Public Resources Code section 35635 (added by Senate Bill No. 1263, Reg. Session 2017-2018). The final Strategy outlines a two-track approach with 22 recommended early actions and 13 research priorities, including the development of model microplastics monitoring program and establishment of an ongoing integrated statewide ambient monitoring network (Objective 2B.1.2).

Trash and plastics research, policy, and regulatory actions have also increased in recent years, including the adoption of the State Water Board Resources Control Board (State Water Board) Trash Amendments,[1] requirements to test microplastics in drinking water,[2] and the 2022 Plastic Pollution Prevention and Packaging

[1] State Water Resources Control Board, Resolution No. 2015-0019.
[2] Cal. Health and Safety Code section 116376 (added by Senate Bill 1422, ch. 902 stats. 2018).

Producer Responsibility Act,[3] underscoring the need for a consistent and coordinated monitoring network to track and evaluate the occurrence and impact of plastic pollution in California state waters and communities.

Each grantee identified in the projects below have critically advanced microplastics research and understanding in California and are well positioned to perform the foundational work needed to develop a coordinated, statewide plastics monitoring plan and network.

SCCWRP, in coordination with the State Water Board and OPC, has held foundational workshops (e.g., "Measuring Microplastics: Building Best Practices for Sampling, Extraction, and Analysis") to evaluate and develop reliable standardized methods to sample, extract, and analyze microplastics. Methods for monitoring microplastics in drinking water were recently adopted by the State Water Board following an interlaboratory method performance evaluation study supported by SCCWRP.[4] SCCWRP has additionally supported the development of microplastic collection methods in wastewater (OPC Agreement C0831016).

SFEI completed a foundational investigation of microplastics in San Francisco Bay, and in doing so, provided a unique case study to guide further investigations of microplastic sources and pathways for the state. For the San Francisco Bay region, urban stormwater was identified to be the dominant pathway for microplastics entering the Bay, and estimated microplastic loads were over 300 times that of wastewater. These results highlighted the importance of investigating the sources and pathways of microplastics entering urban runoff, and resulted in the completion of a conceptual model to synthesize and integrate current understanding of microplastic sources and pathways to urban stormwater (OPC Agreement C0831015).

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[3] Senate Bill 54, added by ch. 75 stats. 2022. The Act establishes the California Plastic Pollution Mitigation Fund to be expended by the California Natural Resources Agency and California Environmental Protection Agency beginning in 2027 "to monitor and reduce the environmental impacts of plastics on terrestrial, aquatic, and marine life and human health," among other purposes.

[4] De Frond et al. Monitoring microplastics in drinking water: An interlaboratory study to inform effective methods for quantifying and characterizing microplastics. Chemosphere. DOI: 101.1016/j.chemosphere.2022.134282.

In partnership, SFEI and SCCWRP completed a project in 2020 to develop a suite of methods to monitor State receiving waters for trash, resulting in the Trash Monitoring Methods and Assessment Playbook (OPC Agreement No. C0302900).

Through the National Sea Grant Infrastructure Investment and Jobs Act (IIJA) Marine Debris Challenge Competition, OPC submitted a federal funding proposal of $2,013,280, in partnership with California Sea Grant and SFEI and with support by SCCWRP, to support the development of a pilot statewide plastics monitoring program. The purpose of this pending proposal is to build from the proposed work detailed below and physically pilot a plastics monitoring program that lays the foundation for a long-term statewide network and informs a national plastic monitoring program. Staff anticipates learning the outcome of this funding competition in Spring 2023. If selected, the projects detailed below will support and inform this pilot monitoring program.

Project Summaries:

7.b.1 Project Summary:

California has the opportunity to build from existing studies completed to standardize analytical methods for microplastics. Through this project, SCCWRP will evaluate and facilitate the standardization of microplastic sample collection methods to support real-world monitoring by convening a workshop comprised of state, national, and international microplastics monitoring experts to develop sample collection standard operating procedures (SOPs) and design a method evaluation study for microplastics sample collection. The objective of this project is to produce standardized operating procedures for collecting field samples for microplastics in stormwater, sediment, and biological tissues (fish and/or bivalves); the evaluation and development of standard operating procedures for surface water will be completed through a separate agreement between the State Water Board and SCCWRP.

The evaluation of sediment and biological tissue (fish and/or bivalves) will leverage samples collected as part of the Southern California Bight Regional Monitoring Program facilitated by SCCWRP. These samples will support development and performance assessment of sample collection methods, which are essential for microplastic monitoring.

This project will support the objectives outlined in the California Ocean Litter Strategy and Statewide Microplastics Strategy by developing and evaluating the

foundational, standardized monitoring methods needed to establish a statewide microplastics monitoring network. This project will directly advance OPC Goal 3, Objective 3.4 Improve Coastal and Ocean Water Quality and Objective 2B.1.1 of the Statewide Microplastics Strategy to establish standardized microplastic monitoring methods.

7.b.1 Equity and Environmental Justice Considerations:

Microplastics may disproportionately communities burdened by environmental or social injustice due to proximity to high trash-generation areas (resulting in the fragmentation of plastic-derived trash and debris into microplastics), industrial and plastic manufacturing facilities, dense highways, among other causes of plastic particle emissions. This project will result in foundational microplastic sample collection methods that are intended to be used in microplastic monitoring within California communities and waters to measure and evaluate microplastic contamination in California waters and communities, including future risk assessments of microplastic contamination and exposure of specific communities.

The proximity and placement of sample locations in areas with high trash generation or water quality impairment, proximity communities burdened by environmental or social injustice, and/or sample locations of biota that are used in subsistence fishing will additionally be considered in the study design of this project.

About the Grantee:

SCCWRP is a public research and development agency that develops and applies next-generation science to improve management of aquatic systems in Southern California and beyond. Since its founding in 1969, SCCWRP has developed strategies, tools and technologies that the region's water-quality management community relies on to more effectively protect and enhance the ecological health of Southern California's coastal ocean and watersheds.

Project Timeline:

January 2023 – June 2026

7.b.2 Project Summary:

California state agencies are increasingly evaluating the potential impacts of large plastic and microplastic debris. Through this project, SFEI will facilitate the

development of a statewide plastics monitoring plan that outlines guiding management questions and monitoring objectives; provides a concise synthesis of relevant science, methods, and findings; includes a review of other relevant monitoring program efforts and identification of partners that can potentially be leveraged to implement the plastics monitoring network; provides a framework to inform consistent and coordinated plastics monitoring; and provides recommendations for a phased, multi-year monitoring plan that is scalable to available resources to implement the statewide monitoring network.

This project will support the objectives outlined in the California Ocean Litter Strategy and Statewide Microplastics Strategy by forming strong, collaborative partnerships for the purpose of establishing a coordinated plastics monitoring network, implementing standardized monitoring methods, identifying consistent management questions and monitoring objectives, creating a framework to establish baseline occurrence data and investigate sources and pathways of plastic environmental contamination, and establishing standard data quality and reporting protocols for the overarching purpose of informing microplastic risk assessments, evaluating the efficacy of management actions, and supporting future source reduction strategies.

By completing the objectives above, this project will directly advance OPC Goal 3, Objective 3.4 Improve Coastal and Ocean Water Quality. This project will directly advance the following objectives of the Statewide Microplastic Strategy:

- **Objective 2B.1.2**: Develop a model microplastics monitoring program and establish an ongoing integrated statewide ambient monitoring network to quantify microplastic occurrence and effectiveness of management actions for microplastic pollution by 2024.
- **Objective 2A.3.1:** Engage with California Native American Tribes to initiate outreach, monitoring, and immediate plastic and microplastic pollution reduction efforts beginning in 2022.
- **Objective 2B.2.3**: Engage with California Native American Tribes to conduct a risk assessment of microplastic pollution exposure and impacts to ancestral lands and waters, tribal cultural resources, and tribal beneficial uses to inform and prioritize future solutions by 2025.
- **Objective 2A.3.2**: Engage with underserved or communities disproportionately burdened by environmental injustice to ensure inclusion in decision-making processes, and to identify and pursue immediate solutions to reduce plastic and microplastic pollution beginning in 2022.

- **Objective 2B.2.4**: Engage with California communities disproportionately burdened by environmental injustice, underserved, and/or economically disadvantaged to conduct a risk assessment of microplastic pollution exposure and impacts to inform and prioritize future solutions by 2025.

This project will additionally support the findings and research priorities identified by the OPC Science Advisory Team (OPC SAT) interdisciplinary microplastics working group, convened by the California Ocean Science Trust (OST) in the report "Microplastic Pollution in California: A Precautionary Framework and Scientific Guidance to Assess and Address Risk to the Marine Environment." This includes the following priority research questions, which are predicated on a robust, consistent, and coordination monitoring of plastic emissions statewide:

(1) What are the highest emitting sources of macro- (> 5 mm) and microplastic material to the marine environment in California?
(2) What does monitoring reveal about trends in the concentrations of microplastic pollution within California's marine environment?
(3) How do we associate and directly link microplastic particles sampled in the marine environment to sources of concern through the development and use of new methods, technologies, and tools?

7.b.2 Equity and Environmental Justice Considerations:

Large plastic debris and microplastics may affect communities differently due to proximity to high trash-generation areas, areas in need of increased waste management infrastructure, industrial and plastic manufacturing facilities, dense highways, among other causes of plastic particle emissions. The Statewide Microplastics Strategy recognized that public outreach and engagement have a critical role in informing monitoring programs, evaluating impacts of microplastic exposure, and ensuring individual projects and pollution prevention strategies are informed by local community needs.

This project will include direct engagement and with local community-based organizations, tribes, and impacted communities to share information and inform the development of the statewide monitoring plan, consistent with Goal 2 of the OPC Strategic Plan, Goal 1.4: "Ensure OPC projects and actions are informed by community needs by incorporating community engagement into every OPC project and funding opportunity, as appropriate," and Goal 4.2: "Collaborate with California Native American tribes, environmental justice communities, and

community partners such as: community-based organizations, colleges and universities, research organizations, including community science groups, and local stakeholders, to include Traditional Ecological Knowledges, tribal expertise, local knowledge, social science, historical context, and lived experiences into ocean and coastal science, and research" of the OPC Equity Plan.

Compensation to California Native American Tribes and community-based organizations for their participation in this engagement and information sharing process is intended to be provided.

About the Grantee:

SFEI is a nonprofit 501(c)(3) organization founded through the San Francisco Estuary Project of USEPA Region 9 to provide independent science to assess and improve the health and resilience of natural and human communities of the San Francisco Estuary, California, and beyond. SFEI administers the Aquatic Science Center, a Joint Powers Authority created by the State Water Board and the Bay Area Clean Water Agencies to assist with the efficient delivery of scientific, monitoring, and information management support functions. SFEI employs 70 scientists and technicians who oversee an annual budget of over $7,000,000 for innovative programs in Clean Water, Resilient Landscapes, and Environmental Informatics. Among its many accomplishments over the last 25 years, SFEI completed a foundational investigation of microplastics in San Francisco Bay, and in doing so, provided a unique case study to guide further investigations of microplastic sources and pathways statewide.

Project Timeline:

February 2023 – Summer 2025

Project Financing:

Staff recommends that the Ocean Protection Council (OPC) authorize the disbursement of up to $1,500,000 to the grantees listed above to support the development of a statewide plastics monitoring network.

California Ocean Protection Council	**$1,500,000**
7.b.1 Microplastics sample collection method evaluation and standardization	$750,000

7.b.2 Development of a statewide plastics monitoring plan	$750,000
TOTAL	**$1,500,000**

The proposed source of funds for this disbursement is the Budget Act of 2022, which included a $50 million General Fund appropriation to OPC for grants or expenditures for resilience projects that conserve, protect, and restore marine wildlife and healthy ocean and coastal ecosystems. The proposed disbursement is an appropriate use of this General Fund appropriation because these projects will provide information needed to increase the State's understanding and inform management of plastic and microplastic contamination that impact marine wildlife and ocean and coastal ecosystems.

Consistency with California Ocean Protection Act:

The proposed projects are consistent with the Ocean Protection Act, Division 26.5 of the Public Resources Code, because it is consistent with trust-fund allowable projects, defined in Public Resources Code Section 35650(b)(2) as projects which:

- Eliminate or reduce threats to coastal and ocean ecosystems, habitats, and species.
- Improve coastal water quality.
- Allow for increased public access to, and enjoyment of, ocean and coastal resources, consistent with sustainable, long-term protection and conservation of those resources.
- Improve management, conservation, and protection of coastal waters and ocean ecosystems.
- Provide monitoring and scientific data to improve state efforts to protect and conserve ocean resources.
- Protect, conserve, and restore coastal waters and ocean ecosystems.

Compliance with the California Environmental Quality Act (CEQA):

The proposed projects are not 'legal projects' that triggers the California Environmental Quality Act (CEQA) pursuant to Public Resources Code section 21068 and Title 14 of the California Code of Regulations, section 15378. If it were determined to be a 'legal project' under CEQA, the proposed projects are

categorically exempt from review under CEQA pursuant to 14 Cal. Code of Regulations Section 15306 because the projects involve information collection, consisting of data collection, research, and resource evaluation activities that will not result in a serious or major disturbance to an environmental resource. Staff will file a Notice of Exemption upon approval by OPC.