SAN MATEO, SANTA CLARA & SAN BENITO COUNTIES

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To: BCDC Commissioners and Select Staff
Re: Plastic Particulate Pollution and Shoreline; Plants Design Guidelines

Dear Commissioners, Environmental & Shoreline Staff, Design Review Board and Environmental Justice Working Group of the San Francisco Bay Conservation and Development Commission,

The Sierra Club Bay Alive Campaign and the Loma Prieta Chapter respectfully urge the **Design Review Committee** of the Bay Conservation and Development Commission (BCDC) to recognize **plastic particulate pollution, including particles generated by artificial turf and other synthetic landscape materials, as a form of pollution that should be addressed in BCDC's shoreline planning and pollution-prevention work.**

The current update of BCDC's Shoreline Plants Design Guidelines provides an important opportunity to establish a clear principle: living, biodiverse landscapes should be preferred over fossil-fuel-derived synthetic landscape materials along the Bay shoreline**.** Artificial turf, landscape fabrics, and other plastic ground covers should not be treated simply as inert landscaping materials. They are plastic products exposed continuously to sunlight, weather, abrasion, and stormwater and can fragment into persistent particles that enter surrounding soil and water.

San Francisco Bay Ecology is at Risk from New Plastic Turf Pollution

Plastic pollution in the Bay affects Bay habitat and ecology as well as shoreline and inland communities, with particular consequences for wildlife and for communities that have fewer resources or fewer opportunities to avoid environmental exposures.

As sea level rise increases the frequency and duration of shoreline inundation, landscaping along the shoreline deserves greater attention. In addition, plastic enters the Bay through

stormwater and other pathways. Microplastics have been documented in numerous species and ecosystems, including birds, pollinators, plants, and marine organisms.[9]

Microplastics are particularly important because they are not simply another form of chemical contamination. They are persistent physical particles that can move through water, soil, food webs, and living organisms. California's Department of Toxic Substances Control (DTSC) recently finalized the addition of microplastics to its Candidate Chemicals List, enabling further evaluation and potential product restrictions based on their widespread occurrence, environmental persistence, and mobility.[2]

While tires can account for a substantial portion of microplastics entering San Francisco Bay,[3] research demonstrates why artificial turf deserves attention as a potential source: a study of coastal waters off Catalonia found that 15 percent of particles larger than 5 mm were associated with artificial turf.[4]

Artificial turf also contains additives intended to slow degradation, including UV stabilizers, antioxidants, flame retardants, colorants, and color stabilizers.[5] These materials are deliberately designed for outdoor exposure, yet their eventual degradation and environmental fate warrant greater consideration as plastic pollution.

Environmental Justice Includes Eliminating New Pollution Risks as well as Providing Access to Nature

The environmental justice implications extend beyond contamination. Replacing living landscapes with extensive areas of synthetic material also reduces everyday contact with nature.

A research study involving nearly 2,000 participants found that everyday exposure to greater biodiversity and a greater variety of natural features was associated with greater mental well-being, with benefits persisting for hours after exposure.[6] This matters for environmental justice because people who have fewer resources have fewer opportunities to seek natural environments elsewhere.

Along the Bay shoreline, therefore, retaining living landscapes provides multiple benefits at once: pollution prevention, improved habitat, biodiversity, opportunities for people to experience nature, and greater resilience as sea levels rise.

Implications for BCDC's Shoreline Plants Design Guidelines

The Sierra Club Bay Alive Campaign and Loma Prieta Chapter recommend that BCDC's updated Shoreline Plants Design Guidelines **prohibit artificial turf and other synthetic plastic ground covers as shoreline landscape elements within BCDC's jurisdiction.**

California agencies are increasingly recognizing the need to address plastic pollution at its source.

- The California Coastal Commission issued guidance in 2025 specifically addressing plastic pollution in coastal development permits and Local Coastal Programs.[7]
- Santa Clara Valley Water District and the Bay Area Water Supply and Conservation Agency prohibit artificial turf and geotextile plastic cloth in their lawn-rebate programs.[8]
- DTSC's 2026 action further demonstrates that microplastics are receiving increasing regulatory attention because of their persistence and mobility.[2]

The ecological case for living landscapes is equally strong. Microplastics have been documented in numerous species and ecosystems, including birds, pollinators, plants, and marine organisms.[9] By contrast, California native landscaping can provide substantial ecological benefits. A recent study by California State University, Los Angeles found that residential yards planted with California native plants supported approximately four times more pollinators than conventionally landscaped yards.[10] An American Society of Landscape Architects review of nearly 70 peer-reviewed studies likewise found that intentionally designed native plant communities can support biodiversity while restoring important soil and water-retention functions.[11]

Request to BCDC

BCDC has an opportunity to address new plastic pollution before it becomes another persistent burden on Bay ecosystems and communities. Shoreline landscaping should not create a new source of plastic particulate pollution while simultaneously replacing living habitat with synthetic materials.

We respectfully request that BCDC do the following:

1. recognize plastic particulates, including microplastics generated by the degradation of artificial turf and other synthetic landscape materials, as a relevant form of Bay pollution,
2. address plastic particulate pollution in BCDC's pollution-prevention and shoreline planning activities,
3. in the updated Shoreline Plants Design Guidelines, prohibit artificial turf, pour-in-place rubber, landscape fabrics, and other fossil-fuel-derived synthetic ground covers within BCDC's jurisdiction, and
4. prioritize living, biodiverse, climate-resilient landscapes that provide habitat, support pollinators, reduce Bay pollution, and maintain people's access to nature.

A healthy Bay shoreline should not only protect communities from rising seas, it should also protect and restore the ecological systems on which those communities depend. **Keeping living landscapes along the shoreline is a practical way to address pollution, biodiversity loss, environmental justice, and climate resilience together.**

We respectfully ask BCDC to make plastic pollution prevention an explicit consideration in its updated shoreline landscape guidance and to put nature, not plastic, at the foundation of a healthy Bay shoreline.

Sincerely,

Jennifer Hetterley,
Bay Alive Campaign Lead
Sierra Club, Loma Prieta Chapter

Susan Hinton
Conservation Committee Chair
Sierra Club Loma Prieta Chapter

Endnotes

1. San Francisco Estuary Institute, *San Francisco Bay Microplastics: Executive Summary*; San Francisco Baykeeper, “Pollution.”
2. California Department of Toxic Substances Control, “Adding Microplastics to the Candidate Chemical List,” June 18, 2026. The regulation becomes effective October 1, 2026.
3. California Department of Toxic Substances Control, presentation by Moran, 2021; San Francisco Estuary Institute, *Microplastics in Stormwater Conceptual Models Report*.
4. Study of plastic particles in coastal waters off the Catalan coast, *Environmental Pollution*, 2023.
5. Wasser Drei Null, “Microplastics from Artificial Turf”; New Jersey Department of Environmental Protection, *Synthetic Turf Report*, 2025.
6. King's College London research reported in *ScienceDaily*, April 16, 2024, concerning biodiversity and mental well-being.
7. California Coastal Commission, *Guidance for Addressing Plastic Pollution in Coastal Development Permits and Local Coastal Programs*, 2025.
8. Santa Clara Valley Water District, landscape conversion requirements; Bay Area Water Supply and Conservation Agency (BAWSCA), lawn-rebate program requirements.
9. See studies cited in the original submission concerning microplastic impacts on birds, pollinators, plants, and marine ecosystems; see also PubMed PMID 34210877 concerning microplastic ingestion by wildlife.
10. California State University, Los Angeles, “Study Finds Native Plants Boost Urban Pollinators,” August 3, 2026.
11. American Society of Landscape Architects, *Biodiversity Study*, Executive Summary and Full Report.