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July 31, 2023

The Honorable Michael S. Regan  
Administrator  
U.S. Environmental Protection Agency  
1200 Pennsylvania Ave NW  
Washington, DC 20024

**RE: Draft National Strategy to Prevent Plastic Pollution, EPA-HQ-OLEM-2023-0228**

Dear Administrator Regan:

Ocean Conservancy appreciates the opportunity to provide comments on the Environmental Protection Agency's (EPA) Draft National Strategy to Prevent Plastic Pollution (Strategy). We are grateful to your Agency and this Administration's efforts to date to tackle the growing challenge of plastic pollution and look forward to the Administration's continued work on this critical issue.

Ocean Conservancy works to protect the ocean from today's greatest global challenges. Together with our partners, we create evidence-based solutions for a healthy ocean and the communities and wildlife that depend on it. One of the challenges we have been working to address throughout our 50-year history is plastic pollution. As plastic *production* has continued to rise, so has plastic *pollution*, resulting in over 11 million metric tons of plastics entering our ocean each year from land-based sources alone.<sup>1</sup> Left unchecked, rates of ocean plastic pollution are expected to triple to 29 million metric tons per year by 2040.<sup>1</sup> Plastics are currently responsible for 3–4% of global greenhouse gas emissions, projected to triple by 2050.<sup>2</sup>

The science is clear – to address our plastic pollution crisis and the climate crisis it is fueling, we need a comprehensive approach that includes making less plastic, better reusing and recycling the plastics we do need, and continuing effective cleanups of plastics that are leaked into the environment. We applaud this Strategy for including Objectives across all these necessary approaches.

We would also like to applaud the EPA for excluding processes that convert solid waste to fuels, fuel ingredients, or energy from being considered recycling (pg.15). We appreciate that the EPA is following the science on the greenhouse gas emissions, harms, and outputs of these technologies and not permitting these technologies to be considered recycling and by requiring additional testing for the crude pyrolysis oil produced. We hope this acknowledgement will be implemented in the National Recycling Strategy and throughout the EPA's work on recycling.

**We encourage the EPA to use the Strategy as an opportunity to act now, beyond establishing voluntary measures.** To this end, we encourage the EPA to use its existing authority to create

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<sup>1</sup> Lau, W.W. et al. [Evaluating scenarios toward zero plastic pollution](#). Science (2020).

<sup>2</sup> Zheng, J., Suh, S. [Strategies to reduce the global carbon footprint of plastics](#). Nat. Clim. Chang. (2019).

ambitious, timebound targets for phasing out single-use plastics and increasing the use of post-consumer recycled content in federal procurement guidelines. Further, the EPA should use its existing authority under the Clean Water Act and the Resource Conservation and Recovery Act to better regulate and prevent plastic and microplastic pollution, including exploring the ability to regulate microplastics as toxics. We encourage the EPA to identify and pursue incentives that transition the country to a more circular economy based on reuse and refill systems rather than single-use products. Finally, we recognize the need for improved national data, including a trash loading baseline and production and consumption data, to inform decision making and measure effectiveness of policies. We urge the EPA to leverage existing networks and citizen science through the International Coastal Cleanup<sup>®</sup>, International Trash Trap Network and other data-centric networks to develop a national baseline and track changes in debris composition and burden over time. These existing networks are valuable not just for trash removal, but as trash monitoring tools and for localized education.

**The EPA is in a prime position to push for change by implementing policies that help cut down on new plastic production and greatly reduce the most harmful single-use plastics.** We encourage the Biden Administration to take the lead on concrete actions that reduce plastic pollution and Ocean Conservancy stands ready to assist or provide further comment. If you have any questions or we can provide additional information based on our feedback, please reach out to our U.S. Plastics Policy lead, Dr. Anja Brandon ([abrandon@oceanconservancy.org](mailto:abrandon@oceanconservancy.org)).

Sincerely,

A handwritten signature in blue ink, appearing to read 'Nicholas J. Mallos', with a stylized, flowing script.

Nicholas J. Mallos  
Vice President of Conservation, Ocean Plastics  
Ocean Conservancy

### **Section III: Request for Information**

#### **1. Which actions are the most important and would have the greatest positive impact at the local, regional, national, and global level?**

Actions by this Administration should be prioritized in line with the EPA's own waste hierarchy, focusing first and foremost on reduction, then reuse, then recycling (which includes both development of upstream design for recyclability criteria and development of policy tools to increase access and funding for the system).

First, we must produce and use less plastic: Half of all plastic ever made has been made in the last twenty years, growing faster than the economy as a whole. Without bold action, production and consumption are expected to double by 2050.<sup>3</sup> Critical actions that support source reduction are laid out in Objectives A and B. California recently passed legislation that aligns with this focus on reduction by requiring that all single-use plastic packaging and foodware be reduced 25% by 2032 (relative to a 2023 baseline).<sup>4</sup> Other states are interested in following suit<sup>5,6</sup> and there is interest in similar action at the international level. Given the significant greenhouse gas emissions associated with the production of plastics, source reduction offers an important climate mitigation opportunity as well. There is an opportunity for the federal government to develop guidance and targets to encourage the source reduction of plastics through purchasing. This would support achievement of the Administration's goals, as laid out in EO 14057 to achieve net zero emissions from federal procurement, as well as major reductions in landfilled waste over the next 15 years. In the near term, the EPA can and should focus on reducing single-use plastics across federal government procurement through updated procurement standards and incorporating incentives for reuse.

We encourage the EPA to focus on incentivizing and supporting reuse and refill systems over alternative materials to plastics as it is well-known that all single-use items have environmental trade-offs, especially if they end up in the environment. Alternative delivery systems such as reuse and refill also have the opportunity to significantly reduce associated greenhouse gas emissions over traditional plastic packaging or other single-use options, particularly as the transportation and energy sectors decarbonize.

Support policies that increase effective mechanical recycling: While we cannot recycle our way out of the plastic pollution crisis, we recognize that effective mechanical recycling must play a critical role in reducing waste and decreasing the need for virgin materials. Effective recycling requires lasting, sustainable investments to increase collection, for infrastructure and maintenance, and to build responsible end markets that facilitate the actual reuse or recycling of materials. Short-term investments by the federal government, which have traditionally helped support our largely locally funded solid waste system, are insufficient. A more effective use of resources by the EPA would be to develop recommendations for nationally harmonized extended producer responsibility (EPR) systems for solid waste management (packaging and paper products) that would enable the long-term funding to better transition to a circular economy.

Another role the EPA can play in facilitating better recycling is developing guidance for products to be designed and labeled for recycling. Improved product design and labeling can decrease contamination in

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<sup>3</sup> Economist Impact and Nippon Foundation, 2023. [Peak Plastics: Bending the Consumption Curve](#).

<sup>4</sup> Ocean Conservancy (2022). [California Senate Bill 54: A Win for Our Ocean](#).

<sup>5</sup> Oregon [SB 544](#), 2023.

<sup>6</sup> Washington [HB 1131](#), 2023.

the recycling stream and can decrease the need for additional consumer education by simplifying the system.

Utilize existing authority to address plastic pollution, especially microplastics: Finally, the EPA can help address plastic pollution, especially microplastics, by utilizing its existing authority and supporting research to better track, monitor, and remediate plastic pollution. Under the Clean Water Act (CWA), the EPA already has the authority to regulate the discharges of pollutants into waters without a permit, including “contaminants of emerging concern.”<sup>7</sup> The EPA has already described microplastics as an emerging contaminant, meaning the EPA has authority under the CWA to regulate these pollutants.<sup>8</sup> To protect human and environmental health, microplastics must be added and regulated under NPDES permits, including for point-source polluters throughout the plastics supply chain (via stormwater permits for facilities including producers, transfer stations, etc.).

In addition, the EPA should investigate regulating microplastics as a hazardous waste under RCRA, which would provide additional regulatory tools to address this pollution. As outlined in the table below in Objective C1.2, microplastics meet the criteria to qualify as a hazardous waste.<sup>9</sup> This is not a novel concept: California Department of Toxic Substances Control’s (DTSC’s) Safer Consumer Products (SCP) Program is currently [proposing to add microplastics](#) to its Candidate Chemicals List based on the emerging scientific consensus regarding the human and environmental health impacts of microplastics.<sup>10</sup> This action would pave the way for future regulatory action against products that contain or generate microplastics to protect human health. Utilizing existing authority under CWA and RCRA gives the EPA an opportunity to have the greatest positive impact at the national level in the short-term.

- **Which actions can best protect human health and environmental quality?**

Reducing plastics production and use is a high priority action for preventing harm to human health and the environment across the plastics lifecycle, from pollution produced from the extraction of fossil fuels to production, to disposal, to pollution in the environment. Objectives outlined in A.1 are most closely aligned with this focus on reduction and we encourage the EPA to explore opportunities to achieve reduction targets through existing authorities. Upstream interventions like reducing the use of plastics in the first place are the most effective tools to decrease harm across the plastics lifecycle.

In addition to reducing plastics production and use, ensuring plastic production and disposal facilities are sufficiently regulated through robust permitting and are not cited in disadvantaged, low-income, and rural communities (as they have been in the past), will significantly improve human health, especially in the frontline and frontline communities neighboring facilities. Actions laid out in Objectives A2.4-2.5, B4.4-4.5 should be prioritized to protect human and environmental health.

Microplastics pose another significant threat to human and environmental health and upstream actions to reduce their pollution in the first place should be prioritized. The EPA should utilize existing authority under CWA and RCRA to unlock additional regulatory tools to prevent microplastic pollution; additional details are outlined in the table below for Objective C1. To this end, we encourage the EPA to explore whether microplastics should be regulated as hazardous waste under RCRA as outlined above.

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<sup>7</sup> Congressional Research Service, 2021. [Contaminants of Emerging Concern Under the Clean Water Act](#).

<sup>8</sup> US EPA, 2021. [Microplastics: Emerging Trends and Research Gaps](#).

<sup>9</sup> 40 C.F.R. § 261

<sup>10</sup> California Department of Toxic Substances Control, 2023. [Proposal to Add Microplastics to the Candidate Chemicals List](#).

- **Which actions are most important to address environmental justice and climate change?**

Reducing plastics production and preventing plastic waste in the first place is critical to mitigate climate change and environmental justice impacts: Many of the vulnerable communities already impacted by plastic production and waste are also on the frontlines of climate change, as evidenced by the communities in Southern Louisiana and Texas that have borne the brunt of worsening Atlantic Hurricane seasons, increased flooding, and other extreme weather. Without immediate action, this will only get worse: emissions from the petrochemicals sector are currently projected to follow a growth trajectory associated with 4° Celsius of global warming, well above the 1.5° target set out in the Paris Agreement on climate to avoid catastrophic climate change.<sup>11</sup> Key actions include those outlined in A.1 to reduce single-use plastic production and use, as well as efforts in A.2 to reduce plastic pollution by harnessing government procurement. Several provisions in Objectives B and C of the Strategy support an increasingly circular economy for plastics, which will also support emissions reductions from the sector.

Research is critical to assess the justice impacts and efficacy of pollution controls for plastic production and solid waste facilities (A.2.4-2.5, B.4): This research is critical for informing permitting and other regulatory decisions related to plastic pollution to address on-going and legacy pollution from plastics, which has disproportionately burdened environmental justice communities. In doing this analysis, it is also important to understand the overlapping nature of climate, plastic, and environmental justice risks. Plastic pollution reduces the resilience of coastal and marine ecosystems to climate change. Both plastic pollution and climate change have extremely unequal impacts on environmental justice communities. Without appropriate pollution controls - where plastic is made and where it ends up - frontline communities will be more vulnerable to the impacts of climate change. For example, plastic pollution in urban waterways can exacerbate flooding and serve as a vector for disease, increasing climate-driven stressors on human health. Likewise macro and microplastic pollution also impacts the marine and coastal ecosystems that coastal communities depend on.

There are several efforts in the Strategy to evaluate the impacts and costs of plastics, in particular Objectives A2.1, A2.3, and A2.6. Reliable, impartial data on the climate impacts of plastics are needed. However, plastics are a multifaceted environmental issue, and cannot be considered in the context of climate alone. Any analysis of impacts should look at impacts across biodiversity, human health, and climate impacts.

In assessing the greenhouse gas emissions associated with the plastics lifecycle, it is important to address sources of variability at each phase, as described in a recent Ocean Conservancy report, “[Plastic is Everywhere—Except the One Place it Should Be](#)” (see pg. 12).<sup>12</sup> In particular, this includes understanding emissions methane, feedstock choice, the use of coal during manufacturing, and emissions from end of life treatment. Furthermore, it is critical to assess the impacts of broader shifts in the energy system; for example, decarbonization of power and transportation can drastically shift the emissions associated with reuse systems.

- **What are the key steps and milestones necessary to successfully implement the actions in the draft strategy?**

One of the critical milestones to successfully implement the Strategy will be establishing a baseline of plastic production and pollution to understand the scale and scope of the problem and to measure progress. We need ambitious, time bound goals to reduce plastic production, single-use plastics, and

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<sup>11</sup> Systemiq, 2022. [Planet Positive Chemicals: Pathways for the chemical industry to enable a sustainable global economy.](#)

<sup>12</sup> Ocean Conservancy, 2023. [Plastic is Everywhere—Except the One Place it Should Be: How Investor and Company Climate Commitments Ignore Plastics and What to Do About It.](#)

increase reuse and recycling - any goal must be supported by a baseline and ongoing metrics to enable tracking of progress. As outlined in the table below in Objective C3, there are existing protocols and standardized methods to help establish a baseline for trash loading. The EPA should work with other federal agencies to solicit and track necessary data for measuring plastic production and consumption to develop that baseline.

## **2. What are the most important roles and/or actions for federal agencies to lead?**

Support state, national, and global policy solutions: Public policy is essential to creating the systemic change necessary to address the plastic pollution crisis and the EPA has an essential role to play in supporting state, national, and global policy actions. The EPA can and should develop frameworks and guidance for national policies that have proven effective tools at addressing plastic pollution and transitioning to a circular economy (e.g., extended producer responsibility, deposit return schemes, bans, etc.).

Use existing authorities to act: The EPA should use its existing authority under the Clean Water Act, the Clean Air Act, and the Resource Conservation and Recovery Act to review and update permits to better protect communities and the environment. More details laying out the existing authorities that should be used are detailed in the table below for Objectives A1, B1, and C1.

Leverage purchasing power of the federal government: The EPA should use the purchasing power of the federal government to drive change towards more sustainable and circular practices through procurement guidelines and time bound targets. The focus of these guidelines and targets should first be on eliminating single-use plastics, especially those identified under Objective A1.1. These guidelines and targets should support alternative delivery methods like reuse and refill, and if and where plastic packaging or other materials are needed, require the use of post-consumer recycled content. The Biden Administration's goal to achieve net-zero emissions from procurement by 2050, as outlined in EO 14057, is closely linked to how we deal with plastic. The plastics industry creates nearly 4% of greenhouse gas emissions in the U.S. (232 million tons of CO<sub>2e</sub> per year). The federal government can significantly curb these emissions by reducing the use of plastic, encouraging reuse, improving recycling, and pushing for sustainable acquisition and procurement practices.

Pursuant to section 207 of EO 14057, OMB has directed agencies to "take actions to reduce and phase out procurement of single-use plastic products." Despite this directive, most agencies failed to address the procurement of plastics in their 2022 sustainability plans. Further, there is currently no consistent government-wide approach to reduce the procurement of single-use plastics. We urge EPA to strengthen Objective A1.2 to help the government do better by setting standards and regulations regarding sustainable procurement through the Environmentally Preferable Purchasing (EPP) program. The EPA should work with GSA to support a robust plan to phase out single-use plastic and packaging as part of their on-going rulemaking to reduce single-use plastics and packaging, consistent with the May 2023 recommendations of the GSA Acquisition Policy Federal Advisory Committee. The EPA should also develop targets and procurement incentives to increase use of mechanically recycled plastic, along with guidance for industry to utilize recycled content to reduce greenhouse gas emissions from the plastics sector.<sup>13</sup>

Further, the EPA should also take a leadership role in the Interagency Policy Committee (IPC) on Plastic Pollution and a Circular Economy with the goal of ensuring a consistent, whole-of-government approach

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<sup>13</sup> Ocean Conservancy and RRS, 2022. [Recommendations for Recycled Content Requirements for Plastic Goods and Packaging](#).

to phase out single-use plastic and packaging with an aggressive timeline, consistent procurement practices, and clear benchmarks and metrics.

### **3. Is your organization willing to lead an action or collaborate with others to implement actions?**

Ocean Conservancy has led the fight for a clean, healthy ocean free of trash since 1986, when we launched our annual International Coastal Cleanup® (ICC). Since then, Ocean Conservancy has mobilized millions of ICC volunteers to remove trash from beaches and waterways around the world while pioneering upstream solutions to the growing ocean plastics crisis. Ocean Conservancy invests in cutting-edge scientific research, implements on-the-ground projects, and works with conservationists, scientists, governments, the private sector, and members of the public to change the plastics paradigm.

We have a comprehensive plastic policy program that examines policies across all levels of governance (from cities to international policy) that can help identify key interventions and policy levers necessary to meet the objectives laid out in this strategy. We also have a climate and plastics initiative that advocates for increased understanding of the connection between climate change and plastics and can help identify actions to reduce greenhouse gas emissions associated with plastics and packaging. In addition, we have a robust ocean plastic research program that includes leading experts on microplastics, fate of ocean-bound plastics, and emerging concerns within plastic pollution that have led pioneering research that has shaped our understanding of the scale and scope of the plastic pollution crisis.

Ocean Conservancy stands ready to collaborate with the EPA and others to drive systemic change necessary to address the plastic pollution crisis.

### **5. What are the key metrics and indicators that EPA should use to measure progress in reducing plastic and other waste in waterways and oceans?**

Enhanced data on plastic production, generation, and consumption as well as plastic waste generation, reuse rates, and recycling is necessary to enable better tracking of those values over time as a metric. In addition, trash loading and pollution rates (including microplastic pollution loading) are an essential metric in measuring the success of this Strategy. As outlined in the table below in Objective C3, there are existing protocols and standardized methods to help establish a baseline for trash and microplastic loading. Other key metrics include reduced greenhouse gas emissions for federal government procurement and the plastics industry. Additional metrics should include community health, especially in environmental justice communities.

### **6. What criteria should processes other than mechanical recycling meet to be considered “recycling activities” (e.g., “plastics-to-plastics outputs are ‘recycling’ if the output is a product that could again be recycled into another product or to extent that it can achieve viable feedstock for new plastic materials”)? How should health and environmental impacts be considered in these criteria?**

Ocean Conservancy applauds the EPA for following the science on harmful chemical recycling technologies, such as pyrolysis and gasification, by not considering these technologies as recycling: “EPA now understands that some of these technologies, produce fuels and/or intermediate materials used in the manufacturing or processing of fuel or fuel substitutes. EPA reaffirms that the Agency does not consider activities that convert non-hazardous solid waste to fuels or fuel substitutes (“plastics-to-fuel”) or for energy production to be “recycling” activities” (pg. 15). This update aligns with the views of Congress as laid out in report language included in EPA’s FY23<sup>14</sup> funding that states:

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<sup>14</sup> Department Of The Interior, Environment, And Related Agencies Appropriations Bill, 2023, [Report of The Committee On Appropriations](#) [To Accompany H.R. 8262], 2022. Pg. 93.

Chemical Recycling Technologies. — The Committee is concerned about the growth of chemical recycling technologies, specifically pyrolysis and gasification units, for the treatment of plastic waste. These chemical recycling technologies do not result in the recovery of plastic materials to advance a circular economy and the facilities contribute to climate change and impose disproportionate health burdens on the communities where they are located. The Committee encourages the Agency to consider the emissions, disproportionate impacts, and lack of circularity in its ongoing rulemaking on the regulatory treatment of gasification and pyrolysis units and encourages the Agency to maintain regulating these technologies as municipal waste combustion units defined under the Clean Air Act Section 129.

Ocean Conservancy strongly advocated<sup>15</sup> for this language and applauds the EPA for following the science on harmful chemical recycling technologies. Ocean Conservancy does not presently support any form of chemical recycling. In its current form, chemical recycling does not contribute to a circular plastics economy because it is not plastics-to-plastics recycling and creates environmental and social harms that are inconsistent with our goal of a healthier ocean supported by a more just world.

Ocean Conservancy recommends the following as guiding principles and criteria for evaluating recycling activities:

- A comprehensive approach focused on reducing plastic production is needed to reduce the harms of plastics on our communities, climate, and ocean.
- Any improvements in recycling technology will require upstream policy efforts to increase collection and streamline product design for a more economically viable system with less contamination. These efforts need to be supported by sustainable financing that unburden the ratepayer and hold producers accountable.
- Any end-of-life treatment for plastics that leads to harmful emissions (including greenhouse gas emissions) into communities, air, or waterways are not sustainable and should not be considered part of the circular economy.
- End-of-life processes that do not recover plastic materials (i.e., aren't "plastic-to-plastic") should not be considered recycling.
- No end-of-life treatment processes should perpetuate historic environmental and/or social injustices or create new injustices.
- Local communities should be fully engaged and empowered in the decision to locate and operate facilities.

## **7. Are there other actions that should be included in this strategy?**

- **Should EPA expand the scope of the strategy to include sea-based sources?**

Yes, sea-based sources, especially abandoned, lost or otherwise discarded fishing gear (also known as "ghost gear"), are a significant contributor to plastic pollution. Pound for pound, ghost gear is the deadliest form of marine debris. Given the disproportionate environment and socio-economic impact ghost gear has (including economically important marine activities including fishing and tourism), we encourage the EPA to expand the scope of the Strategy to include sea-based sources of plastic pollution.

Broadly, three types of action can be taken against ghost gear: prevention, mitigation, and remediation, as outlined in a recent report<sup>16</sup> by the Global Ghost Gear Initiative<sup>®</sup> at Ocean Conservancy to inform the International Legally Binding Instrument to prevent Plastic Pollution. The EPA can play a critical role in all three strategies to tackle ghost gear – prevention, mitigation, and remediation.

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<sup>15</sup> Ocean Conservancy, 2022. [Omnibus Includes Victories on Fisheries Management, Against Chemical Recycling.](#)

<sup>16</sup> Ocean Conservancy and the Global Ghost Gear Initiative<sup>®</sup>, 2023. [The Impact Of Fishing Gear As A Source Of Marine Plastic Pollution.](#)



Preventative measures the EPA should focus on, in collaboration with other federal agencies, include activities while the gear is still on land and within EPA authority such as the implementation of gear management systems combined with fishing gear marking to reduce deliberate disposal at sea, developing principles for extending producer responsibility for plastic fishing gear, providing adequate port reception facilities, mandatory gear return schemes, and recycling programs for end-of-life fishing gear. Data gathering to inform future research on preventative strategies is also key. Mitigating actions include a clear framework for mandatory and no fault lost gear reporting, which has been shown to increase the reporting and retrieval of lost gear and using biodegradable components (that will break down into benign biomass rather than microplastics) to make fishing gear where suitable (e.g., escape hatches in lobster pots, not a solution for all fishing gear). The only effective remediation action is removal – which is a necessity right now to remove existing gear from the environment but is not a long-term solution. While removal is impactful and often coordinated with federal services like the Navy and Coast Guard, this can be expensive and sometimes impossible, especially in sensitive or deep marine habitats. The EPA should work with other federal agencies to develop financing mechanisms to fund hotspot mapping and clean-ups as well as ‘fishing for litter’ initiatives to incentivize fisher-involved clean-up schemes.

● **Should specific types of plastic products be targeted for reduction or reuse in this strategy?**

While we need an overall reduction in plastics, single-use plastics, especially those that are unnecessary and not recyclable, should be the focus first. Criteria that should be used in evaluating items to be eliminated or phased out are detailed in the table below for Objective A1.1. In developing a list of those items to be targeted first, the EPA should base a list of single-use, unrecyclable, and frequently littered products on similar, existing lists also detailed in the table below.

**8. Do you have any additional information or recommendations for EPA regarding these or other proposed actions in this draft strategy?**

Additional recommendations on the proposed objectives and actions in the draft strategy are included in the table below:

Objective	Recommendations
<p><b>A1.</b> Reduce the production and consumption of single-use, unrecyclable, or frequently littered plastic products.</p>	
<p><b>A1.1</b></p>	<ul style="list-style-type: none"> <li>● In developing a list of to be reduced or eliminated, the EPA should review and base a list of single-use, unrecyclable, and frequently littered products on:               <ul style="list-style-type: none"> <li>○ The US Plastic Pact’s “Problematic and Unnecessary Materials” list<sup>17</sup> to be phased out by 2025, and</li> <li>○ Ocean Conservancy’s Charting a Course to Plastic Free Beaches<sup>18</sup> report that identifies the top ten most commonly polluted single-use plastics and policy actions (including 5 items to phase out) to reduce pollution.</li> </ul> </li> <li>● Criteria that should be used in evaluating items to be eliminated or phased out should include whether the item is:               <ul style="list-style-type: none"> <li>○ Necessary and/or readily eliminated or replaced,</li> </ul> </li> </ul>

<sup>17</sup> Ocean Conservancy, 2022. [Fact Sheet: US Plastics Pact Problematic and Unnecessary Materials List](#).

<sup>18</sup> Ocean Conservancy, 2023. [Charting a Course to Plastic Free Beaches® Data](#).

	<ul style="list-style-type: none"> <li>○ Reusable or single-use,</li> <li>○ Wholly recyclable within the existing mechanical recycling system and commonly accepted for recycling,</li> <li>○ Frequently littered and/or creates significant pollution,</li> <li>○ Toxic (e.g., PVC) or contains toxic additives.</li> </ul>
<b>A1.2</b>	<ul style="list-style-type: none"> <li>● The EPA should, in collaboration with other agencies, establish government-wide ambitious targets for reducing single-use plastics to use the purchasing power of the federal government to drive innovation and invest in reuse and refill systems.</li> <li>● To facilitate achievement of these goals, the EPA should update its Environmentally Preferable Purchasing (EPP) program to help facilitate the phasing out of single-use plastics, especially those identified in Objective A1.1.</li> <li>● The EPA can play a vital role, in collaboration with other agencies like the GSA, to provide guidance to vendors and supplies on how to comply with the updates to the EPP.</li> </ul>
<b>A1.3</b>	<ul style="list-style-type: none"> <li>● An innovation challenge program should focus on incentivizing eliminating unnecessary packaging through design and alternative delivery systems like reuse and refill rather than focus on alternative materials to single-use plastics.</li> <li>● Another opportunity for innovation is in green chemistry to create safe, non-toxic additives that can confer desired material properties without harming human or environmental health.</li> <li>● Alternative materials (e.g., biobased, biodegradable, compostable) can perpetuate a reliance on single-use and don't mitigate environmental impacts, especially on the marine environment and should be approached with caution.</li> </ul>
<b>A1.4</b>	<ul style="list-style-type: none"> <li>● Rather than conducting a study of policy tools, we recommend the EPA rely on the existing body of literature that has evaluated efficacy of policies to decrease plastic pollution across various levels of government to maximize the speed in which the EPA is able to identify effective tools and then move forward with recommendations or implementation.</li> <li>● Recommended resources include: <ul style="list-style-type: none"> <li>○ Diana, Z., et al., 2022. <a href="#">The evolving global plastics policy landscape: An inventory and effectiveness review</a>. Env. Sci. &amp; Pol.</li> <li>○ Karasik, R., et al., 2020. <a href="#">20 Years of Government Responses to the Global Plastic Pollution Problem</a>. The Plastics Policy Inventory, Duke University.</li> <li>○ University of Portsmouth Global Plastic Policy Centre, 2022. <a href="#">A global review of plastics policies to support improved decision making and public accountability</a>.</li> <li>○ Ocean Conservancy, 2019. <a href="#">Plastics Policy Playbook: Strategies for a Plastic-Free Ocean</a>.</li> <li>○ UNEP and World Resources Institute, 2021. <a href="#">Tackling Plastic Pollution: Legislative Guide for the Regulation of Single-Use Plastic Products</a>.</li> </ul> </li> <li>● In addition, the U.S. Government Accountability Office issued the following report on recycling which outlines relevant existing federal efforts and authorities that should be considered in advancing the</li> </ul>

	<p>Objectives laid out in this Strategy.</p> <ul style="list-style-type: none"> <li>○ US GAO, 2020. <a href="#">Recycling: Building on Existing Federal Efforts Could Help Address Cross-Cutting Challenges</a>. GAO-21-87.</li> <li>● Public policy is essential to addressing the plastic pollution crisis and the EPA has an essential role to play in supporting state, national, and global policy actions. In addition to the GAO study above, which identified the EPA is playing a role under RCRA to evaluate and promote public policy as a tool, the National Academies of Sciences<sup>19</sup> also recommended that the EPA work to identify support policies to address this issue.</li> <li>● We recommend that the EPA use this Objective to identify where the EPA has existing authority or where additional authority would be required to support or implement effective policies to achieve this Strategy as well as develop a federal framework to support some of the most effective policies already identified through in the literature (e.g., extended producer responsibility, deposit return schemes, bans on certain items, procurement).</li> </ul>
<p><b>A1.5</b></p>	<ul style="list-style-type: none"> <li>● National goal to reduce single-use plastics should be set at a minimum of 25% reduction of single-use plastics by 2032 to align with recent legislation passed in California<sup>20</sup> and proposed federally.<sup>21</sup></li> <li>● Efforts should be made to incentivize participation to ensure movement towards this target, including a separate and measurable federal government wide target to reduce single-use plastics.</li> </ul>
<p><b>A2. Minimize pollution across the life cycle of plastic products.</b></p>	
<p><b>A2.1</b></p>	<ul style="list-style-type: none"> <li>● It is important to understand that life cycle assessments (LCAs) are limited and have been largely industry-funded to date. Government supported LCAs may be a valuable addition, but they must be considered in the context of the broader system-wide goals related to climate and waste.</li> <li>● As discussed in the Ellen MacArthur Foundation’s, <i>The New Plastics Economy</i><sup>22</sup>: “Life Cycle Assessment (LCA)... has its limitations. Most fundamentally, while it is well suited to evaluate individual choices today, it is less suitable for determining the target state towards which a system as a whole could innovate... an LCA optimisation by each individual actor does not necessarily lead to better system outcomes.”</li> <li>● While LCAs can be a valuable tool, they have known limitations including often neglecting end-of-life impacts from pollution, community impacts, and emerging human health concerns. Further they are designed to evaluate impacts at a particular point in time, meaning they are often unable to capture or quantify the impact of systemic changes. LCAs should be used as one part of a comprehensive review to evaluate impacts.</li> <li>● Therefore, we recommend deleting the term “excellent” with respect to LCAs and outlining additional analysis to support a more comprehensive review.</li> </ul>

<sup>19</sup> NASEM, 2022. [Reckoning with the U.S. Role in Global Ocean Plastic Waste](#).

<sup>20</sup> California SB 54 (Allen), 2022. [Plastic Pollution Prevention and Packaging Producer Responsibility Act](#) §42057.

<sup>21</sup> S. 5163 (Booker), 2022. [Protecting Communities from Plastics Act](#) §5(b).

<sup>22</sup> Ellen MacArthur Foundation, 2016. [The New Plastics Economy](#).

<p><b>A2.2</b></p>	<ul style="list-style-type: none"> <li>● In developing design guidelines for plastics, the EPA should rely on existing design for recyclability guidelines such as the APR Design Guide,<sup>23</sup> which is already codified in laws (e.g., CA SB 343<sup>24</sup>) as a standard.</li> <li>● In addition to PFAS, the plastics sector is associated with nearly 13,000 various chemicals - some of which have already been identified as being harmful to human health.<sup>25</sup> Standards for chemicals of concern with respect to design guidelines should take a “class approach” to chemicals rather than identifying and evaluating chemicals one at a time. This class-based approach has been recommended by the National Academies of Science, Engineering, and Medicine to evaluate other complicated systems.<sup>26</sup> This approach should be used to inform design standards that include prohibitions on the use of classes of chemicals that are found to be harmful to human health or the environment.</li> <li>● The resulting sustainability and design standards should be used to inform the work of Objective A1.2 and A2.3 in updated procurement standards.</li> </ul>
<p><b>A2.3</b></p>	<ul style="list-style-type: none"> <li>● The EPA should, in collaboration with other agencies, establish government-wide ambitious, time bound targets for reducing single-use plastics in federal procurement. This supports the Biden Administration’s goal established in EO14057, of achieving net-zero emissions from procurement by 2050.</li> <li>● The EPA should update the Comprehensive Procurement Guidelines (CPG) to eliminate or phase out the items identified in Objective A1.1 across the federal government.</li> <li>● The EPA should also update the CPG to increase minimum requirements for post-consumer recycled content (PCR) across certain product categories, which can provide a stable baseline demand for recycled content, incentivizing investment in collection and processing capacity to meet that demand. There are existing post-consumer recycled content standards under the CPG for other disposable materials (e.g., <a href="#">paper</a>) as well as some durable plastic products (e.g., <a href="#">carpet</a> and <a href="#">fences</a>) that can serve as the model for additional PCR requirements.</li> <li>● A recent report by Ocean Conservancy, “Recommendations for Recycled Content Requirements for Plastic Goods and Packaging,”<sup>27</sup> lays out recommended minimum percent PCR across different product categories over time and can help establish ambitious and achievable PCR requirements.</li> <li>● These recycled content requirements will be more effective if procurement guidance are also used to incentivize purchase of materials that are designed for recycling, e.g., in accordance with the <a href="#">APR Design Guide</a>.</li> <li>● Support for extended producer responsibility (EPR) schemes for plastics</li> </ul>

<sup>23</sup> Association of Plastic Recycling. [APR Design Guide](#).

<sup>24</sup> California SB 343 (Allen), 2021. [Truth In Labeling](#) §42355.51(d)(3)(A)

<sup>25</sup> UN Environment Program, 2023. [Chemicals in Plastics - A Technical Report](#).

<sup>26</sup> NASEM, 2019. [A Class Approach to Hazard Assessment of Organohalogen Flame Retardants](#).

<sup>27</sup> Ocean Conservancy and RRS, 2022. [Recommendations for Recycled Content Requirements for Plastic Goods and Packaging](#).

	<p>and other packaging can help provide a sustainable source of funding that does not fall to municipalities (e.g., taxpayers and ratepayers) to finance the transition to the circular economy. Support for EPR schemes through procurement criteria can be used to reinforce broader EPA policies around supporting EPR.</p>
<b>A2.4</b>	<ul style="list-style-type: none"> <li>● Review of regulatory requirements should include a review of cumulative human health risks from these facilities and those they are co-located with.</li> <li>● The review of water discharge permits should include establishing strict effluent standards to prohibit the release of pre-production pellets from point sources associated with production and transportation.</li> </ul>
<b>A2.5</b>	<ul style="list-style-type: none"> <li>● The review and mapping of existing facilities should include analyzing cumulative impacts on communities.</li> </ul>
<b>A2.6</b>	<ul style="list-style-type: none"> <li>● Methods to measure and understand the connection between plastics and greenhouse gas emissions in achieving the Administration’s climate goals and preventing catastrophic levels of warming are needed. It is critical that emissions estimates include the full lifecycle of plastics from feedstock production to end-of-life disposal. Significant sources of variability include: methane emissions from feedstock production, feedstock choice, coal-based electricity use during product manufacturing, and burning at end-of-life (e.g., incineration, open-burning, waste to energy including pyrolysis and gasification).</li> <li>● It will be important to deepen understanding of the potential impacts of microplastics on global carbon cycle processes, especially in the marine environment.</li> <li>● To provide the best information to make informed decisions, lifecycle greenhouse gas emission studies should also include an analysis of reducing packaging and alternative delivery systems, including reuse and refill options, in addition to studying plastics and alternative materials. In evaluating these alternatives, it is critical to understand the performance of these alternatives in the context of broader energy system decarbonization.</li> </ul>
<b>A2.7</b>	<ul style="list-style-type: none"> <li>● Standards should focus on upstream design for recyclability to ensure harmonization. Focusing on upstream design for recyclability standards reduces barriers to the circular economy and the need for labeling.</li> </ul>
<b>B1.</b> Conduct a study of the effectiveness of existing public policies and incentives upon the reuse, collection, recycling, and conservation of materials.	<ul style="list-style-type: none"> <li>● There have been many effective studies of public policies to reduce plastic pollution and increase reuse, collection, and recycling. It would be more effective for the EPA to review existing literature and then identify from the effective policies, which the EPA has the authority to implement at present, what additional authority the EPA would need to help implement effective policies, and what the Agency’s role is in convening conversations or reporting to Congress on the authorities necessary to implement effective policies.</li> <li>● Recommended studies of public policies and interventions to address plastic pollution and incentivize a circular economy are detailed in Objective A1.4.</li> </ul>

	<ul style="list-style-type: none"> <li>● One theme identified in many of these studies is the establishment of public policy action as a central tool, especially in the creation of extended producer responsibility policies (which was also specifically identified in the GAO report as a policy that the EPA should evaluate and consider).</li> <li>● Beyond studying the effectiveness, it is critical that this Strategy include establishing policy action as central to preventing plastic pollution. The goal of this study, and broader Strategy, should be recommendations for further actions by the EPA and other federal agencies to support the creation of a federal policy frameworks (including EPR) that could help support many of the other Objectives laid out in this Strategy.</li> </ul>
<p><b>B2.</b> Develop or expand capacity to maximize the reuse of materials.</p>	<ul style="list-style-type: none"> <li>● Scale has proven a necessary tool in increasing use and effectiveness of reuse and refill systems. Another key factor that has been identified in effective reuse and refill systems is standardization, which helps facilitate the scaling up of these systems. The EPA should review existing standards<sup>28</sup> as part of expanding reuse across the country.</li> <li>● Funding should help communities build out from pilot systems to community-wide plans to grow consumer participation and effectiveness.</li> <li>● Research should focus on effective ways to scale including the most effective collection systems (e.g., store drop-off, ride-along returns within the existing recycling collection system)</li> </ul>
<p><b>B3.</b> Facilitate more effective composting and degradation of certified compostable products.</p>	
<p><b>B3.1</b></p>	<ul style="list-style-type: none"> <li>● Increased access to compost facilities and convenient compost collection is critical in reducing greenhouse gas emissions from food waste and transitioning towards zero waste.</li> <li>● In addition to available infrastructure, research should evaluate collection access in communities, especially for multi-family households.</li> </ul>
<p><b>B3.2</b></p>	<ul style="list-style-type: none"> <li>● Results of this investigation into the impacts of compostable plastic products on the environment and on compost facilities should be used to determine whether increased regulation is needed in the certification process for determining compostability. For example, if many of the currently certified compostable products are not accepted at compost facilities or negatively impact the infrastructure or ability to operate, the EPA should provide recommendations for enhanced criteria to either develop a federal certification program (along the lines of the EnergyStar certification) or to require of third-party certifiers.</li> <li>● This study should also investigate labeling as part of the product design and how that impacts consumer and composter behavior.</li> </ul>
<p><b>B3.3</b></p>	<ul style="list-style-type: none"> <li>● Federal funding can and should be used to increase composting facilities capacity and increase access to those facilities, especially to support a decrease in greenhouse gas emissions associated with landfilling food waste.</li> <li>● Funding to manage compostable plastics should come from producers of</li> </ul>

<sup>28</sup> PR3, [Reusable Packaging System Design Standard](#).

	those items through an extended producer responsibility program.
<b>B3.4, B3.5</b>	<ul style="list-style-type: none"> <li>● As described above, results from the investigation of impact of compostable plastics on facilities and investigations into “greenwashing” should be used to determine whether increased regulation is needed in the certification process for determining compostability.</li> <li>● If it is determined that current certifications or product standards are insufficient and/or facilitate greenwashing or misleading the public, the EPA should provide recommendations for enhanced criteria ideally to develop a federal certification program (along the lines of the EnergyStar certification) or to require of third-party certifiers.</li> </ul>
<b>B3.6</b>	<ul style="list-style-type: none"> <li>● Given that composting facilities can operate very differently (e.g., different turn rates, time at the facilities), a study identifying gaps in measurement and consistency in composting should also determine if certain minimum operating guidance is necessary for any composting facility that accepts plastic compostable materials to ensure that any material certified compostable can be sent and accepted at any composting facility.</li> </ul>
<b>B4. Increase solid waste collection and ensure that solid waste management does not adversely impact communities, including those overburdened by pollution.</b>	
<b>B4.1</b>	<ul style="list-style-type: none"> <li>● Effective recycling and collection require lasting, sustainable investments to increase collection, invest in infrastructure maintenance and repair, and build our responsible end markets to facilitate the actual reuse or recycling of materials. Given that, short term investments by the federal government, as has traditionally helped support our largely locally funded solid waste system, are insufficient.</li> <li>● Extended producer responsibility (EPR) programs for the types of products that typically end up in the recycling system (e.g., packaging and paper products) provides a sustainable source of financing to support the system without burdening taxpayers and ratepayers.</li> <li>● Rather than investing more federal money into the system, the EPA should identify and develop recommendations for nationally harmonized EPR that would enable the long-term funding of the type of solid waste management system necessary to achieve the circular economy.</li> </ul>
<b>B4.2, B4.3</b>	<ul style="list-style-type: none"> <li>● Research on innovative systems to collect and transport waste to prevent leakage should also identify ways to reduce greenhouse gas emissions throughout the entire solid waste management system, including investigating the impacts of zero-emission vehicles, optimizing collection routes, deployment of renewable energy at solid waste facilities, etc.</li> <li>● Increased standardization in upstream product design to ensure recyclability will complement enhanced bin labeling in decreasing contamination and increasing consumer participation.</li> </ul>
<b>B4.4</b>	<ul style="list-style-type: none"> <li>● Incinerators and chemical recycling facilities (including pyrolysis and gasification), as well as other emerging or novel processes that utilize high heat, pressure, and/or chemicals to break down plastic wastes should be</li> </ul>

	<p>considered hazardous waste facilities to adequately protect surrounding communities from air and water emissions that can impact health and perpetuate environmental injustice. These types of facilities have higher greenhouse gas emissions and increase climate risks, adding burdens on communities already suffering from climate-induced environmental stress.</p> <ul style="list-style-type: none"> <li>○ For example, the City of Phoenix originally contracted for a pyrolysis facility to manage plastic wastes but ultimately chose not to fulfill that contract and pursue alternative waste management strategies due to growing air quality concerns caused by climate change that would be exacerbated through this type of facility.<sup>29</sup></li> <li>● It is also important to investigate non-hazardous solid waste management facilities to understand environmental and health burdens and impacts from these facilities.</li> <li>● This type of investigation should be used to refine permitting requirements of facilities through the identification of best practices and technologies at the best performing facilities.</li> </ul>
<b>B4.5</b>	<ul style="list-style-type: none"> <li>● Social costs of plastic waste need to include social and environmental costs of plastics from fossil fuel extraction, production, manufacturing, use, and end-of-life disposal as well as leakage to the environment throughout the lifecycle (e.g., methane emissions leaks during fossil fuel extraction, pre-production plastic pellet leakage, plastic leakage to the environment).</li> <li>● These costs should include impacts to the climate resilience of coastal communities, cities, marine ecosystems, and critical infrastructure.</li> <li>● The cost should also include a comprehensive environmental and human health impact cost analysis including air, water, and soil emissions and impacts from chemicals used throughout the plastic production lifecycle as well as impacts from micro- and nanoplastic pollution.</li> <li>● The costs also need to include the impacts from plastic pollution on the economy - from stressed and strained fisheries,<sup>30</sup> to economic losses due to reduced tourism,<sup>31</sup> to lower crop yields.<sup>32</sup></li> <li>● These costs may be quite significant: For example, a recent Minderoo-Monaco Commission study estimated economic health costs of plastics of at least \$1.5 trillion dollars.<sup>33</sup></li> </ul>
<b>B4.6</b>	<ul style="list-style-type: none"> <li>● Strongly support a third-party certification for plastic recyclers to ensure accountability and environmentally sound management of recycling.</li> <li>● The EPA should also pursue a third-party certification for post-consumer recycled content (PCR) to ensure the PCR is generated by environmentally sound mechanical recycling, ensure transparency, and tracking. The Association of Plastic Recyclers<sup>34</sup> has developed a third-party certification</li> </ul>

<sup>29</sup> Jordana, Amanda. Interview. Conducted by Ocean Conservancy. June 12, 2023.

<sup>30</sup> Scheld, A., Bilkovic, D. & Havens, K. [The Dilemma of Derelict Gear](#). Sci. Rep. (2016).

<sup>31</sup> NOAA Marine Debris Program, 2019. [The Effects of Marine Debris on Beach Recreation and Regional Economies in Four Coastal Communities: A Regional Pilot Study](#).

<sup>32</sup> Zang, H., et al. [Microplastics in the agroecosystem: Are they an emerging threat to the plant-soil system?](#) Soil Biology and Biochemistry (2020).

<sup>33</sup> Landrigan, P.J., et al. [The Minderoo-Monaco Commission on Plastics and Human Health](#). *Annals of Global Health* (2023).

<sup>34</sup> [APR Post-Consumer Recycled Content](#)



	to authenticate the use of PCR that could be a model for certification.
<b>B4.7</b>	<ul style="list-style-type: none"> <li>Standardizing measurement and data must include production and import data on plastics and other chemicals used in the production of plastics. Data on the amount of plastics produced or imported into the country will help ensure accurate tracking and accounting for collection, recycling, landfilling, and leakage of plastics.</li> </ul>
<b>B5.</b> Increase public understanding of the impact of plastic mismanagement and how to appropriately manage plastic products and other waste.	
<b>B5.1</b>	<ul style="list-style-type: none"> <li>Consumers play a critical role in solid waste management, however, no amount of education of consumers can overcome poor product design, misleading labeling, and confusing and heterogeneous recycling and collection systems.</li> <li>This objective should be prioritized after other objectives that will result in better product design, increased collection and access, and improved infrastructure so that public participation is leveraged at the time when reuse, composting, and recycling systems are built out and ready for engagement.</li> </ul>
<b>B5.2</b>	<ul style="list-style-type: none"> <li>Beyond increasing awareness, the EPA should work with the FTC to determine how to best partner to increase identifying and enforcing against misleading claims. Increased enforcement of the Green Guides will better protect consumers and increase compliance with the Green Guides by other businesses.</li> </ul>
<b>B5.3</b>	<ul style="list-style-type: none"> <li>The use of the chasing arrows surrounding the resin identification code (RIC) is misleading.</li> <li>In reviewing and potentially updating the RIC and their use on products and packaging, the EPA should review recent legislation that prohibits the use of the RIC surrounded by the “chasing arrows” (or reduce, reuse, recycle) sign (CA Truth In Labeling Law, SB 343<sup>35</sup>) and recommendations from another legislatively mandated task force to investigate misleading labeling (Oregon Truth in Labeling Task Force Report<sup>36</sup>).</li> <li>The EPA should investigate whether recyclers (e.g., MRF operators and/or plastic reclaimers) still need the RIC in place to manage products. If it is still needed, the EPA should develop recommendations for prohibiting the use of the chasing arrow around the RIC to decrease consumer confusion and harmonize product labeling across the country.</li> </ul>
<b>B6.</b> Explore possible ratification of the Basel Convention and encourage environmentally sound management of scrap	<ul style="list-style-type: none"> <li>We support the EPA pushing for the U.S. to fully ratify the totality of the Basel Convention to manage our waste in an environmentally sound and an environmentally just manner. As the Basel Convention does not allow for reservations or exemptions, we would support the U.S. ratifying the entire Basel Convention, including Annex 4a (also called the Ban Amendment).</li> <li>The development of environmentally sound management practices for</li> </ul>

<sup>35</sup> California SB 343 (Allen), 2021. [Truth In Labeling](#).

<sup>36</sup> Oregon Truth in Labeling Task Force, 2022. [Final Report and Recommendations](#).

and recyclables traded with other countries.	scrap and recyclables must include developing recommendations and guidelines for responsible end markets for recycling of materials shipped out of the country to be considered recycling. Two states, Oregon <sup>37</sup> and California, <sup>38</sup> are developing guidelines on responsible end markets as part of implementing new EPR laws for packaging. These guidelines should serve as a starting point in developing federal guidelines to ensure harmonization.
<b>C1.</b> Identify and implement policies, programs, technical assistance, and compliance assurance actions that effectively prevent trash/micro/nanoplastics from getting into waterways or remove such waste from waterways once it is there.	
<b>C1.1</b>	<ul style="list-style-type: none"> <li>● There is a need to better assess and understand the scale and impact of littering, illegal dumping activity, and unintentional spillage before determining cost, effectiveness, and equity ramifications of policy and programs to remediate these challenges.</li> <li>● Much of the work outlined in Objective C3 should be used to help build out the understanding of the scale and scope of the challenge to inform potential policies and programs.</li> </ul>
<b>C1.2</b>	<ul style="list-style-type: none"> <li>● Existing Clean Water Act (CWA) authorities represent a valuable and effective way that the Agency can have a short-term impact on plastic pollution.</li> <li>● Total Maximum Daily Loads (TMDLs) for “trash” (meaning improperly discarded waste materials regardless of type) already exist in four states/districts (AK, CA, MD, and DC) across the country and represent a valuable way to measure and monitor the health of waterways and to require action if a waterway is deemed impaired. TMDLs for trash should be expanded nationwide with additional consideration for plastic specific TMDLs.</li> <li>● In addition, TMDLs should be established for microplastics. California has pioneered a state strategy for microplastics that included developing a risk assessment framework<sup>39</sup> for microplastic pollution in waterways that can be used to inform guidance on establishing TMDLs for microplastics.</li> <li>● National Pollutant Discharge Elimination System (NPDES) permits should be updated to help the EPA accomplish the Objectives laid out in this Strategy. Specifically, NPDES permits for plastic production and manufacturing facilities should be updated to prohibit the release of any plastics, including pre-production plastic pellets, into waterways. This was a specific recommendation from an EPA report on plastic pellet pollution over 3 decades ago (“<a href="#">Plastic Pellets in the Aquatic Environment: Sources and Recommendations</a>”<sup>40</sup>) that has yet to be fully realized, this Strategy represents an opportunity for the EPA to use its authority to update permits</li> </ul>

<sup>37</sup> Oregon Department of Environmental Quality, 2023. [Draft Rules - Division 90, Plastic Pollution and Recycling Modernization Act](#), OAR 340-090-0630.

<sup>38</sup> CalRecycle, 2023. [SB 54 Discussion Document \(REM\)](#).

<sup>39</sup> California Ocean Science Trust and Ocean Protection Council, 2021. [Microplastic Pollution in California: A Precautionary Framework and Scientific Guidance to Assess and Address Risk to the Marine Environment](#).

<sup>40</sup> US EPA, 1992. [Plastic Pellets in the Aquatic Environment: Sources and Recommendations](#).

	<p>and enforce violations</p> <ul style="list-style-type: none"> <li>● NPDES permits for other known point sources of microplastic pollution should also be evaluated and updated, including: <ul style="list-style-type: none"> <li>○ Dry dock facilities for boats (paint is a significant source of microplastic pollution, and paint microplastics are generated during the sandblasting process<sup>41</sup>)</li> <li>○ Major construction sites (construction foam is a significant contributor to microplastic pollution<sup>42</sup>)</li> <li>○ Textile manufacturing facilities, commercial washing facilities (significant sources of microfiber pollution, which can be addressed through microfiber filtration in washing machine units<sup>43</sup>)</li> <li>○ In areas without combined sewer and stormwater systems, stormwater is a significant source of runoff and pollution, which can be addressed through NPDES stormwater permits</li> </ul> </li> <li>● Nonpoint source management plans should be established to help mitigate microplastic pollution from cities (municipal stormwater), which contains significant amounts of tire wear particles among other microplastics and agricultural lands, which contain microplastics from the application of biosolids. Bioswales and other management measures have been shown effective in capturing and retaining microplastics, preventing them from continued movement from roadways into waterways.</li> <li>● In addition, the EPA should investigate regulating microplastics as a hazardous waste under RCRA, which would provide additional regulatory tools to address the growing plastic pollution crisis. Microplastics meet the four criteria to qualify as a hazardous waste: <ol style="list-style-type: none"> <li>1. it must be a solid waste,</li> <li>2. it must not be otherwise excluded from the definition of solid waste or hazardous waste,</li> <li>3. it must be listed or qualify to be listed as a hazardous waste, and</li> <li>4. it must be characteristic of hazardous waste.<sup>44</sup></li> </ol> </li> <li>● This is not a novel concept: California Department of Toxic Substances Control's (DTSC's) Safer Consumer Products (SCP) Program is currently <a href="#">proposing to add microplastics</a> to its Candidate Chemicals List based on the emerging scientific consensus regarding the human and environmental health impacts of microplastics.<sup>45</sup> This action would pave the way for future regulatory action.</li> </ul>
<p><b>C1.3</b></p>	<ul style="list-style-type: none"> <li>● The EPA should develop polluter pays program models to fund the cleanup (manual cleanups, river/coastal trash traps) and remediation of macro- and microplastic pollution to include as potential funding options as part of technical assistance.</li> </ul>

<sup>41</sup> Turner, A., et al. [Occurrence and chemical characteristics of microplastic paint flakes in the North Atlantic Ocean](#). Sci. Tot. Environ. 2022.

<sup>42</sup> Gao, G.H.Y., et al. [Bromine Content Differentiates between Construction and Packaging Foams as Sources of Plastic and Microplastic Pollution](#). ASC EST Water. 2023.

<sup>43</sup> Erdle, L.M., et al. [Washing Machine Filters Reduce Microfiber Emissions: Evidence From a Community-Scale Pilot in Parry Sound, Ontario](#). Front. Mar. Sci. 2021.

<sup>44</sup> 40 C.F.R. § 261

<sup>45</sup> California Department of Toxic Substances Control, 2023. [Proposal to Add Microplastics to the Candidate Chemicals List](#).

<p><b>C2.</b> Improve water management to increase trash and micro/nanoplastic capture in waterways and stormwater/wastewater systems.</p>	<ul style="list-style-type: none"> <li>● Upstream interventions to capture micro- and nanoplastics as close to the source as possible are ideal as this is the most efficient way to capture pollution before it can cause harm or spread, and broad-scale, effective cleanup of the smallest micro- and nanoplastics once in the environment is not possible. Identifying major pathways of micro- and nanoplastics that have possible upstream interventions should be a priority. California’s Statewide Microplastics Strategy<sup>46</sup> identifies many of these potential sources and interventions. <ul style="list-style-type: none"> <li>○ One example of an upstream intervention would be requiring microfiber filtration on all new washing machines. This prevents microfibers from flowing into wastewater treatment plants, where it either ends up in the treated water or in biosolids, which are then applied to lands as fertilizer, where the microfibers can then spread through wind or water runoff, or mobilize in the soil.</li> </ul> </li> <li>● The greatest barriers to expanding trash capture efforts are currently: <ul style="list-style-type: none"> <li>○ The upfront cost of trash capture devices, and</li> <li>○ Securing stakeholders for long-term trash capture device maintenance, including trash removal and data collection on the waste diverted.</li> </ul> </li> <li>● The EPA should consider small grant programs to fund these efforts and remove cost barriers.</li> <li>● In funding the development of new technologies, efforts should focus on the development and distribution of low-cost, low-technology solutions that are more accessible for a wider variety of groups.</li> <li>● Funding to support scientific research is required to better understand where trash accumulates in waterways, and to develop methods that can be used on a case-by-case basis to identify the most appropriate locations for trash removal and/or installation of trash capture devices.</li> <li>● Funding should also support research to develop a method for assessing the cost-effectiveness of trash capture devices. To ensure the most effective use of funds, investigation is required to ensure that the most appropriate device is selected for each location, as this differs on a case-by-case basis.</li> <li>● The EPA should develop polluter pays models and recommendations to fund cleanup and remediating legacy pollution and microplastic pollution.</li> </ul>
<p><b>C3.</b> Increase and improve measurement of trash loadings into waterways to inform management interventions.</p>	
<p><b>C3.1, C3.2</b></p>	<ul style="list-style-type: none"> <li>● The establishment of a national baseline of trash loading and plastic pollution is necessary to understand the scale and the scope of critical pieces of the plastic pollution crisis (e.g., littering and illegal dumping) and to measure progress against the Objectives laid out in this Strategy.</li> <li>● Standardized debris assessment protocols (or adaptations of them), such as the NOAA shoreline survey protocol<sup>47</sup> could be used to arrive at this national baseline and understand changes in debris loadings over time. Similar protocols city-level data collection could be investigated, adapted,</li> </ul>

<sup>46</sup> Ocean Protection Council, 2022. [Statewide Microplastics Strategy: Understanding and Addressing Impacts to Protect Coastal and Ocean Health.](#)

<sup>47</sup> NOAA Marine Debris, 2021. [NOAA Marine Debris Monitoring and Assessment Project Shoreline Survey Guide.](#)

	<p>and offered alongside shoreline protocols to provide a more comprehensive picture of trash prevalence in varied environments throughout the country.</p> <ul style="list-style-type: none"> <li>● Utilizing existing networks and citizen science through the International Coastal Cleanup, International Trash Trap Network and other existing, data-centric networks to develop a national baseline and track changes in debris composition and burden over time. These existing networks are valuable not just for trash removal, but as trash monitoring tools and for localized education.</li> <li>● Climate change is rapidly altering hydrological and storm patterns worldwide. In developing this baseline, it will be critical to understand the impact of these changing weather and water patterns will have on the distribution and loading of trash in waterways.</li> <li>● Modeling approaches, building on existing networks and citizen science, should be shared broadly with the international community to help inform baseline development in other countries and a harmonized approach to global monitoring.</li> </ul>
<b>C3.3</b>	<ul style="list-style-type: none"> <li>● We encourage the EPA to leverage existing standardized debris assessment protocols (or adaptations of them) as laid out above in establishing protocols for trash assessment.</li> <li>● These protocols should also be shared with cities, states, and the international community to help inform a harmonized approach.</li> </ul>
<b>C4.</b> Increase public awareness of the impacts of plastic products and other types of trash in waterways.	<ul style="list-style-type: none"> <li>● There is already significant public awareness about plastic pollution and trash in waterways, as evident by public polls highlighting concern about plastic pollution.</li> <li>● This Objective should be deprioritized relative to the numerous other Objectives in this Strategy that would have a more significant impact on addressing plastic pollution at the source through policy interventions and regulations.</li> </ul>
<b>C5.</b> Increase and coordinate research on micro/nanoplastics in waterways and ocean.	
<b>C5.1</b>	<ul style="list-style-type: none"> <li>● Geographically-explicit investigations and research into the sources, transport, fate, concentrations, impacts, and remediations of micro- and nanoplastics should be comprehensive and inclusive of all impacted environments (e.g., coastal and marine, air, fresh water, and soil) and biota.</li> <li>● Additional research should focus on impact of micro- and nanoplastics when consumed by humans via different exposure pathways (air, water, food) to understand the scale of human health impacts and potential interventions.</li> </ul>
<b>C5.2</b>	<ul style="list-style-type: none"> <li>● Upstream interventions to capture micro- and nanoplastics as close to the source as possible is ideal as it's the most efficient way to capture pollution before it can cause harm or spread. Identifying major pathways of micro- and nanoplastics that have possible upstream interventions should be a priority. California's Statewide Microplastics Strategy<sup>48</sup> identifies many of</li> </ul>

<sup>48</sup> Ocean Protection Council, 2022. [Statewide Microplastics Strategy: Understanding and Addressing Impacts to Protect Coastal and Ocean Health.](#)

	<p>these potential sources and interventions.</p> <ul style="list-style-type: none"> <li>● Additional research is needed to support the development of best management practices (BMPs) for nonpoint source micro- and nanoplastic pollution from runoff in cities and urban environments.</li> <li>● In addition to developing effective technologies, understanding how to effectively scale, deploy, and maintain BMPs are also critical to ensuring effective capture or removal of micro- and nanoplastic pollution.</li> <li>● Identifying the situations and environments that benefit the most from BMPs will help prioritize the deployment of these technologies.</li> </ul>
<p><b>C5.3</b></p>	<ul style="list-style-type: none"> <li>● Standard definitions for microplastics and nanoplastics have been established by the scientific community and in some states already (e.g., California<sup>49</sup>) as well as other countries (e.g., EU<sup>50</sup>).</li> <li>● Standardized methods for collecting, extracting, quantifying, and characterizing microplastics have already been put forward in the scientific community. An interlaboratory study was carried out in California as required by statute (CA SB 1422<sup>51</sup>) to validate methods for different matrices<sup>52,53</sup> including drinking water<sup>54,55</sup>, sediment, surface water, and fish tissues.</li> <li>● The Agency should focus its review on the definitions and methods already in use and then put forward recommendations for national standards based on existing literature.</li> </ul>

<sup>49</sup> California State Water Resources Control Board, 2020. [Proposed Definition of ‘Microplastics in Drinking Water.’](#)

<sup>50</sup> Technical Committee of Petroleum Additive Manufacturers in Europe, 2021. [Definition of Microplastic within EU REACH Restriction.](#)

<sup>51</sup> California SB 1422 (Portantino), 2018. [California Safe Drinking Water Act: microplastics.](#)

<sup>52</sup> Hampton, L.M.T., et al. [The influence of complex matrices on method performance in extracting and monitoring for microplastics.](#) Chemosphere. 2023.

<sup>53</sup> Cowger, W., et al. [Reporting Guidelines to Increase the Reproducibility and Comparability of Research on Microplastics.](#) Applied Spectroscopy. 2020.

<sup>54</sup> De Frond, H., et al. [Monitoring microplastics in drinking water: An interlaboratory study to inform effective methods for quantifying and characterizing microplastics.](#) Chemosphere. 2022.

<sup>55</sup> California State Water Resources Control Board, 2021. [Draft Microplastics in Drinking Water Policy Handbook.](#)