

Attachment—Additional Questions for the Record

**Subcommittee on Environment and Climate Change
Hearing on
“No Time to Waste: Solutions for America’s Broken Recycling System”
June 30, 2022**

Mr. David Allaway, Senior Policy Analyst, Department of Environmental Quality, State of Oregon

The Honorable Jan Schakowsky (D-IL)

1. As noted in the December 2021 NASEM report, “Reckoning with the U.S. Role in Global Ocean Plastic Waste,” monitoring and assessments on plastic pollution will require more federal coordination, resources, and attention. Ensuring the work is strategic and targeted to support top interventions would benefit from being organized at a higher level of government, as has been done for a number of transboundary environmental challenges. Please describe the best next steps for the Federal government to advance this effort in 2022 and 2023.

RESPONSE: Better coordination and resources are warranted. Current monitoring and assessment efforts appear to be inadequately funded and somewhat defined by agencies from the perspective of “what we might best do given existing resources and traditional scope” as opposed to “what is truly needed to adequately evaluate the full problem”.

For example, NOAA is currently planning to expand its marine debris monitoring and assessment program. While expansion is warranted, that program is limited to larger items (2.5 centimeters or larger), ignoring microplastics and nanoparticles; it also is limited to coastline and shoreline assessments. Evaluating microplastics requires more funding and laboratory capacity than NOAA - and many other organizations - currently have available. Yet laboratory analysis is necessary to identify the types of plastic in nature and, by extension, their sources in commerce (e.g., packaging vs. clothing vs. abraded tires, etc.). This is important because, for example, research by other organizations (such as the Vancouver Aquarium) has illustrated that microplastics originating from non-packaging sources (e.g., washing textiles) may be an equally if not larger source of plastics in the environment, even as the more visible and obvious single-use products and packaging dominate both media coverage and the policy debate. Improved field and laboratory research is also needed to better identify environmental hotspots, including seasonal variations due to rainfall, wind patterns and roadway runoff. This sort of knowledge is essential to develop more effective prevention, remediation and regulatory approaches.

Only by gathering evidence regarding the full scope and sources of plastics entering the environment worldwide can the federal government implement solutions that are optimized and evidence-based. Lacking a more comprehensive understanding of the scope and source of the problem, solutions run the risk of chasing sources that loom large in public opinion but which are not necessarily the largest, most impactful, or most easily remedied. Growing evidence suggests that plastic waste in nature will likely be difficult, if not impossible, to manage once in environmental media such as soil, fresh and marine waters and sediment.

Future research should be strategically focused and prioritized not merely to fill knowledge gaps, but also to inform an agenda of actions that are prioritized to the extent possible to achieve the greatest reduction in human and ecological harm via prioritization of the most practical and cost-effective solutions.

Congress could require and enable federal agencies to undertake a more comprehensive, coordinated and strategic planning effort, one that considers multiple sources (not only packaging) and multiple emissions pathways (not only litter and recycling, but a variety of point and non-point sources). The study could also be expanded to summarize available literature and gaps in knowledge regarding potential harm to human health and other toxicological and ecological impacts. That literature is rapidly evolving and additional funding for research into the impacts on living organisms (including humans) and ecosystems may be equally if not more important than documentation of physical sources, flows and accumulation.

For example, NOAA's planned research agenda is limited to only evaluating the quantities of plastics in certain environmental media. Much remains unknown (and not subject to evaluation in NOAA's proposal) regarding how macro-plastics behave in these and other media, including their contribution to micro and nano-particles. For example, there is evidence that microplastic particles can act as carriers for toxic chemicals, and that they can create a hazard to aquatic life and aquatic sedimentation. Additional research into these and other topics is also warranted.

Even as the EPA has not yet formally identified plastic as a "pollutant", plastic in the environment demonstrates many of the characteristics of a traditional pollutant. As such, research into physical flows and ecological and human health impacts should involve the significant professional and scientific resources, skills and knowledge base currently housed within the US EPA Office of Research and Development. The Interagency Marine Debris Coordinating Committee also offers an existing body for convening and coordinating inter-agency efforts.

The Honorable Debbie Dingell (D-MI)

1. In your testimony, you say that preventing waste at the source has even greater potential to reduce the environmental impacts of materials than recycling. Can you elaborate on

how shifting the focus from recycling to reduction can lessen the environmental impacts of materials for our natural resources, like the Great Lakes?

RESPONSE: Given the focus of the hearing on plastics pollution, I would like to answer this question from two different perspectives: 1) plastic pollution itself, and 2) other environmental impacts.

Less plastic in circulation results in fewer opportunities for plastics to be released directly into the environment. The release of plastic into the environment, including the Great Lakes, is a serious issue. Prevention (reduction of materials at the source) is more effective than recycling at reducing such releases. Releases may occur in all stages of the life cycle of plastic, including production and transport of virgin resin, utilization of resin to make products and packaging, intentional and unintentional releases of plastics during product use, illegal dumping, littering, and even the recycling process itself. Recycling can release plastics into the environment as a result of improper handling of plastics by recyclers and transporters, and as a result of microplastics in wastewater from plastic and other reclamation facilities. Prevention short-circuits all of these potential releases.

While visible plastic pollution has captivated media and public attention, all materials impact the environment. For example, the US EPA has estimated that the domestic production, transport and disposal of materials contributes approximately 42 percent of all domestic greenhouse gas emissions, with production dominating and disposal only a very small percentage. (Please see:

<https://www.epa.gov/sites/default/files/documents/ghg-land-materials-management.pdf>.)

Releases of toxic chemicals to air and water, eutrophication and acidification of waterways, habitat disruption, and resource depletion are all direct consequences of the types and quantities of materials we use. Again, for most materials, the impacts of production (including resource extraction and supply chains) typically far exceed the impacts of disposal.

Multiple studies have shown that prevention (using less material in the first place) is more effective at reducing such impacts, ton-for-ton, than recycling. For one example, please refer to: <https://www.oregon.gov/deq/mm/production/Pages/Water-Bottle-Study.aspx>. Similarly, on the topic of food, while food waste composting has captivated public interest, preventing the wasting of food in the first place has the potential for far greater environmental benefits (see for example the comparison of “Reduced Food Waste” and “Composting” in this global analysis: <https://drawdown.org/solutions/table-of-solutions>).

However, reducing the use of materials can take two very different forms: reducing use outright (without substitution), and reducing the use of one material by substituting it with another. Reducing material use without substituting it with another is almost always beneficial to the environment; again, using less material overall reduces all of the impacts associated with supply chains, production, transport, use and disposal for that material. But substituting one material for another can be a different story. The environmental impacts of materials can vary widely, and popular wisdom regarding which materials are

“worse” or “better” for the environment is not consistently supported by the evidence. For example, plastic packaging and single-use products have the potential for impacts as a result of direct releases of plastics to the environment. Yet in some applications, plastic performs better (that is, requires fewer resources and results in lower emissions) than alternative materials when evaluated through lenses such as climate change. Policymakers are advised to be aware of the potential for trade-offs and unintended consequences when considering policies that favor one material over another.

The Honorable Nanette Diaz Barragán (D-CA)

1. I appreciate your testimony about the real, yet modest benefits of recycling compared to preventing waste at the source. How does the Break Free from Plastic Pollution Act help to reduce plastic use and pollution from single-use plastics, such as plastic bags and utensils?

RESPONSE: S. 984, the Break Free from Plastic Pollution Act of 2021, contains numerous elements designed to reduce plastic usage at the source. These include:

- Requirements to source reduce and phase out the sale and distribution of certain items including lightweight plastic carryout bags, food and drinkware made from expanded polystyrene, plastic stirrers, and plastic utensils.
- A requirement that plastic straws only be made available upon request.
- A fee on the distribution of carryout bags, which will encourage shoppers to use reusable bags or, for single-item purchases, skip the use of a bag altogether.
- Required studies on the environmental impacts of plastic tobacco filters, electronic cigarette parts and derelict fishing gear, which might lead to restrictions or alternative materials.
- A competitive grant program to fund pilot-scale packaging reduction, reuse and refill projects, coupled with periodic reports on the feasibility and best practices on reuse and refill technology.

In addition, by requiring product producers to take responsibility for waste collection and recycling (via an application of extended producer responsibility), the Act would require such producers to internalize into their organization’s financial accounting a portion of the social costs of those materials – costs that are currently paid for by local governments, taxpayers/ratepayers, and society at large. In essence, this will lead producers of packaging, containers and food service products to pay more for using such materials, and when businesses are faced with higher unit costs, they may be incentivized to find ways to reduce usage through prevention and resource efficiency. Extended producer responsibility can create financial incentives that encourage U.S. businesses to innovate and pivot to new and creative solutions to reduce the impacts of materials and waste.