PLASTIC POLLUTION & PRODUCER RESPONSIBILITY

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WHY IT MATTERS

Plastic derives from fossil fuels and almost 40% of all plastic produced is single-use,[1] creating pollution and further extraction of fossil fuels.[2] Unmanaged plastics end up in Virginia's environment. 94% of plastic entering the Chesapeake Bay remains there.[3,4] Single-use plastics result in devastating impacts on wildlife through entanglement and ingestion.[5] Plastic pollution harms economic activity, lowers property values, reduces tourism, and decreases spending at local businesses.[6,7,8]

Plastics fragment into microplastics, which spread through the air, water supply, and food chain. People routinely ingest and inhale microplastics, and microplastics have been found in all human organs tested, including the heart, lungs, brain, and reproductive organs like testes and ovaries.[9,10,11,12,13] Concerningly, microplastics are present in the placenta and newborn babies as evidenced by their first stool after birth. Babies are further exposed to plastics in breast milk or baby bottles.[14,15,16] Emerging research raises concerns about microplastics' impacts on fertility, cardiovascular disease, gastrointestinal disease, and dementia.

Plastics contain chemicals, including bisphenols (like BPA), plasticizers (phthalates like DEHP), flame retardants (like PBDE), and forever chemicals (like PFAS/PFOS).[17] Many are endocrine-disrupting chemicals,[18,19] and decades of studies have implicated them in obesity, type 2 diabetes, preterm birth, decreased sperm count, early puberty in females, and neurodevelopmental conditions like ADHD, autism, and IQ loss.[20] The economic burden of these health impacts is staggering. Three plastics-related chemicals (BPA, PBDE, and DEHP) cost the United States $920 billion in healthcare and lost economic productivity due to disability, disease, or premature death.[21]

Fossil fuel extraction and plastic production are concentrated in low-wealth or BIPOC areas, disproportionately harming these communities' health and economy.[22]

CURRENT LANDSCAPE

Multiple Virginia government agencies and task forces have acknowledged difficulties with recycling plastics and disposing of hard-to-manage waste,[23,24,25] but the issue remains: individual Virginians can do very little to reduce plastic pollution. Our waste systems are linear, meaning that products are created to be thrown away and do not reenter the marketplace. The issues creating and managing plastic pollution are not created by consumers.[26,27]

PRE-PRODUCTION PELLETS

Waste pollution happens long before consumers touch their products. Plastic manufacturers use pre-production plastic pellets, which are spilled at every stage of the supply chain through permitted discharges and transportation incidents, resulting in over 10 trillion pellets entering the ocean annually.[28] Virginia is home to at least seven plastic pellet production facilities, and the Virginia Pollution Discharge elimination System (VPDES)[29] is insufficient to protect Virginia's waters from the discharge of pre-production plastic pellets. Best management practices can be required to eliminate this harmful pollution.

SINGLE-USE PLASTICS

Low-quality, single-use plastics such as foam, bags, and packaging create a staggering amount of mismanaged waste due to overabundance and non-recyclability. Replacing these types of plastics through bans and reduction mandates is proven to be the best way to reduce pollution.[30]

POST-CONSUMER WASTE

Since 2018, thirteen localities[31] in Virginia have ended curbside recycling programs, with more expected to end in the future. What isn't recycled is landfilled, littered, or incinerated.

The Virginia Litter Tax (paid by producers and distributors of frequently littered products) supports a cleanup program that relies predominantly on volunteers, with almost 40,000 Virginians[32] volunteering annually. Fifty years of community cleanups have demonstrated this is not enough. A task force is being formed as a result of House Joint Resolution 448 to identify opportunities to improve the litter tax. Source reduction policies, such as extended producer responsibility and the recently implemented ban on expanded polystyrene food and beverage containers, are necessary.

OPPORTUNITIES

PRODUCER RESPONSIBILITY

Virginia can reduce plastic pollution at every stage of the supply chain through eliminating harmful mismanaged waste, incentivizing sustainable disposal, increasing producer responsibility, and shifting to reusable products. Until producers are required to plan for their products' life cycles, we will continue to see more plastic litter. A **producer responsibility program** incentivizes a more efficient, productive waste system; decreases waste; increases recycled content; creates reusable or biodegradable products; and reduces the burden on local governments. According to the 50 States of Recycling report, this approach in Virginia could place $210 million of recycled material back in the market to support a circular economy and reduce the need for virgin material and avoid emissions of 2.5 million metric tons of carbon dioxide equivalent annually. Additionally, this approach increases employment opportunity by increasing recycling-related jobs from 3,600 to 11,000.[33]

BEVERAGE DEPOSIT PROGRAMS

Producer responsibility effectiveness is demonstrated by recycling refund programs, a policy supported by 65% of Virginia voters.[34] Oregon's program had an 88.5% bottle recycling rate in 2022. States with these programs have less beverage container litter found during cleanups. These programs are most impactful when they have strong collection mandates, benchmarks, and reporting requirements.

ENDNOTES

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