

Governor Youngkin, Delegate Ware, and Senator Petersen:

As the current Chair of the Plastic Waste Prevention Advisory Council (PWPAC) for the Commonwealth of Virginia, I submit on behalf of the Council our legislatively mandated 2022 Annual Report of our work and our current recommendations. While it has been our privilege to serve the Commonwealth in this capacity during this past year, we recognize that our work of designing a path to eliminating plastic waste and pollution with plastics packaging circular economy industry standards is not yet complete, and we commit to continuing our work through June, 2023.

In this report, you will find:

- A summary of the systems-based approach we are taking to understand the nature of our plastic waste and pollution problems to best create a set of Virginia-specific policy recommendations;
- A short list of our key findings based upon evidence collected for and presented in our meetings this year;
- A description of the criteria that we are and will use when identifying policy recommendations to address our plastic waste and pollution problems;
- The working definition of 'circular economy' we are currently using to shape our work, per our legislative mandate; and,
- A primary recommendation for the 2023 legislative session followed by a few additional ideas.

It is important that you recognize that our work is not finished. While we have spent the past fifteen months gathering, reviewing, and discussing what Virginia-based data we could find about the problems of our current plastic materials system, we need more time to craft a complete set of recommendations for achieving our legislative charge.

Therefore, the PWPAC will continue to meet this winter and spring to prepare a **Final Report**, submitted for your consideration by June 30, 2023.

Successfully enabling a transition to a circular economy for plastic while turning off the faucet of plastic waste and pollution will take multiple legislative sessions and innovative Executive Branch leadership. **Therefore, our primary recommendation in this Annual Report is to invest in state level capacity at DEQ, ideally a dedicated team, to focus on recycling, litter, and circular economy systems that supports and sustains data collection, materials marketplaces, and other technical assistance** to enable a successful transition.

With the sunset of the PWPAC in June, 2023, it will be this DEQ Recycling, Litter, and Circular Economy team who will provide the administrative momentum needed to support plastic producers, users, consumers, recyclers, and disposers as we alter the current system to one that is more ecologically resilient, environmentally sustainable, and economically viable. *A shift this innovative, profound, and substantive takes time, commitment, and thoughtfulness.*

I am indebted to the work of my colleagues on this Council, particular our past Chair Anne Johnson, and for the excellent DEQ staff supporting this process: Morgan Goodman, Meghann Quinn, Brook Keltner and Keith Boisvert. Their professionalism, thoughtfulness, and interest in being mission-focused and solving the plastic waste and pollution problems of the Commonwealth has been a source of inspiration and hope.

Sincerely,

Dr. Rob Alexander, Chair

## Introduction

What follows is the legislatively required annual report of the Commonwealth of Virginia's Plastic Waste Prevention Advisory Council (PWPAC). Per the authorizing legislation:

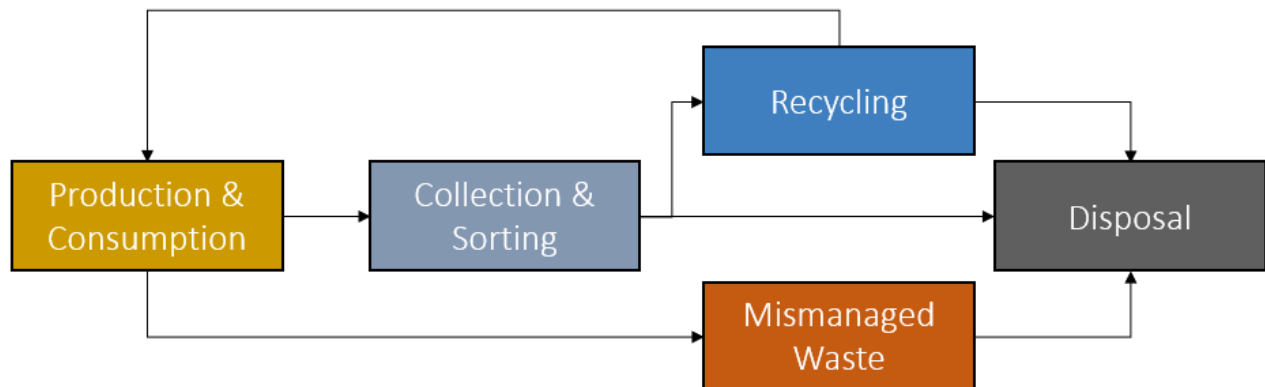
*The purpose of the Council is to advise the Governor on policy and funding priorities to eliminate plastic waste impacting native species and polluting the Commonwealth's environment and to contribute to achieving plastics packaging circular economy industry standards.*

This 2022 report starts with an overview of the approach taken by this Council to understand the nature and extent of the plastic waste and pollution situation in Virginia. Then, it presents key findings, the criteria used for selecting recommendations, and, finally, a set of recommendations for the 2023 legislative session.

### *Overview of Approach*

The Council adopted a 'systems thinking' and life cycle perspective when considering the points where plastic material resources become waste and/or pollution. The primary stages of plastic material flows are as follows<sup>1</sup>:

Figure 1: Current Plastic Material Flow System



- **Production and Consumption:** The demand for and subsequent production of plastic products and the complete use of these products, after which the plastic in the product or its packaging becomes 'waste'.
- **Collection and Sorting:** The informal sorting and collection of plastic waste at the point of generation and the transporting of collected plastic waste to formal sorting facilities.
- **Recycling:** The conversion of plastic waste to a usable ingredient for new products.
- **Disposal:** The 'end of life' place for plastic waste that is not reused or recycled, either landfills, incineration, or combustion for fuel.
- **Mismanaged Waste:** Plastic waste that escapes other parts of the system and becomes 'pollution'.

The challenges the General Assembly tasked this Council to address emerge from failures in the linkages between these life cycle stages, as articulated in the following key findings.

<sup>1</sup> Adapted from "Breaking the Plastic Wave: Top Findings for Preventing Plastic Pollution." Accessed October 15, 2022. <https://pew.org/2WmV10d>.

## Key Findings

After investigating the current status of the plastic materials system in Virginia, the Council agrees upon the following key findings, organized by where in the system they occur, that inform our policy recommendations for arriving at solutions:

### **Production & Consumption**

- Nationally, **only 9% of plastics products and packaging are recycled** meaning that virgin plastic is used in most plastic products and packaging (USEPA, 2018)<sup>2</sup>.
- There is **bipartisan support among Virginia voters** for public policies that reduce the generation of plastic waste<sup>3</sup>.

### **Collection & Sorting**

- Localities and service providers throughout the Commonwealth **currently lack the necessary capacity** to provide accessible or scalable waste and recycling collection, hauling, and sorting services to their constituents.
- **Lack of consumer awareness and education, and increased consumer confusion**, hampers effective diversion and collection of usable plastic waste, leading to high levels of contamination, and reducing the supply of quality recyclable materials.
- **The financial burden for collecting plastic material** for recycling and waste management is largely borne by local governments, local taxpayers, and other local entities.
- *As a result of the findings above, **municipalities are eliminating materials collection systems for recycling purposes**, reducing consumer access to recycling collection infrastructure and services, and limiting the potential supply available for secondary plastic materials markets.*

### **Recycling**

- The **growth of the plastic recycling industry is inhibited** by low recycling rates and the landfilling of usable plastic materials.
- There is **bipartisan support among Virginia voters** for public policies that will increase recycling<sup>4</sup>.

### **Disposal**

- The **amounts of plastic waste entering Virginia landfills is increasing**, while Virginia imports out-of-state waste.

### **Mismanaged Waste**

- The **leakage of plastic waste into the environment (e.g., as litter or blow-off) is increasing**, creating a range of ecological and economic problems.
- The **task of and financial costs for cleaning up plastic pollution** is largely carried out and paid for by state and local governments and non-profit organizations.

### **System-Level Findings**

- **The Commonwealth lags behind peer states, including North Carolina and South Carolina**, in the enactment and implementation of innovative legislation and programs targeting the reduction of plastic pollution through the expansion of reuse and recycling investments and markets. At the same

---

<sup>2</sup> <https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/plastics-material-specific-data>

<sup>3</sup> [https://www.longwood.edu/CLEANVA/images/Survey\\_VA\\_Voters\\_Plastic\\_Pollution\\_Report\\_9-22-22\\_to\\_Media.pdf](https://www.longwood.edu/CLEANVA/images/Survey_VA_Voters_Plastic_Pollution_Report_9-22-22_to_Media.pdf)

Accessed November 15, 2022

<sup>4</sup>IBID

time, the Commonwealth exists in a larger plastic production, consumption, waste, recycling, and disposal economy at the regional and national levels; changes in these regional economies impact how Virginia acts and responds within its own borders.

- **Lack of consistent and precise reporting requirements** for plastic waste generation across the Commonwealth hampers its ability to understand system performance, to engage in continuous improvement, and to develop new markets for plastic reuse and recycling entrepreneurship.

*Because these findings are interrelated, addressing the challenges of plastic waste and pollution will require multifaceted solutions and policy strategies. **No single public policy approach will have the desired impacts.** Policy recommendations should therefore be considered as a package that, together, address the problems without creating new ones.*

### Criteria Used for Evaluating Potential Recommendations

This Council discussed during their September 29<sup>th</sup>, 2022 meeting the criteria used by members when considering recommendations to include in this and future Reports. While not binding, knowing these criteria enables efficient and effective dialogue, deliberation, and decision-making. The following criteria are shared by most of the Council members present at that meeting.

- *Do the solutions meet the Council's mandate and **effectively eliminate plastic pollution while shifting the Commonwealth towards plastics packaging circular economy industry standards?***
- *Do the solutions directly **lead to reduction of plastics pollution?***
- *Do the solutions **improve resiliency for plastic recycling markets** in a shift towards a circular economy?*
- *Do the solutions **hold neutral or improve disparities in who experiences costs and benefits** stemming from plastic waste and pollution?*
- *Do the solutions reflect **differences in capabilities and needs of Virginia communities** (i.e., urban vs. rural, infrastructure capacities, and cultural norms)?*

In addition, when asked to prioritize solutions, individual members of the Council also utilized secondary criteria such as:

- Do the solutions ...
  - ... reflect the changing public policies and market conditions at the multi-state, national, and global levels?
  - ... generate costs and benefits that are fairly distributed across all stakeholders in the system?
  - ... have measurable outcomes?
  - ... align with similar legislative and executive priorities?
  - ... recognize capacities of state agencies for implementation?

### A Working Definition for 'Circular Economy'

In order to effectively apply these criteria in our evaluation of potential recommendations, the Council identified a starting point for defining 'circular economy' to inform future discussions of the Council. Having a working definition that can evolve as we develop recommendations more specific to the legislative charge keeps Council discussions bounded and efficient. This definition is not intended to be a recommended definition for the Commonwealth but rather provides transparency as to Council deliberations.

*A circular economy is a systems solution framework that tackles global challenges like climate change, biodiversity loss, waste, and pollution.*

means an economy, that uses a systems-focused approach and involves industrial processes, and economic activities that

- A. are restorative or regenerative by design;
- B. enable resources used in such processes and activities to maintain their highest values for as long as possible; and,
- C. aim for the elimination of waste through the superior design of materials, products, and systems (including business models).<sup>5</sup>

---

<sup>5</sup> (<https://ellenmacarthurfoundation.org/topics/circular-economy-introduction/overview>, Accessed December 9, 2022) and (<https://uscode.house.gov/view.xhtml?path=/prelim@title33/chapter55&edition=prelim> Accessed December 9, 2022).

## 2022 Annual Report Recommendations

In addition to summarizing and providing transparency for our work this year, this 2022 Annual Report provides an initial recommendation for laying the groundwork to eliminating plastic pollution and achieving Virginia-based plastics packaging circular economy industry standards.

Given the complexity of achieving these goals, this Council will continue to meet in 2023 and establish a **Final Report** for meeting its legislative mandate by June 30, 2023 for use by the Commonwealth.

## Arriving at Recommendations

When voting on recommendations, the PWPAC utilizes an agreed upon ‘decision rule’, or process by which we make a decision. The language of this decision rule is as follows:

1. A quorum of the 10 person Council is required to hold an official decision-making vote (6 present)
2. A decision moves forward if a simple majority of those present approve the decision.
3. Decisions made will be presented as either ‘consensus’ or ‘non-consensus’ decisions.
4. Upon request, a minority opinion is recorded and made part of the meeting record.

In addition, the Council utilized a three-level voting approach that allowed Council members two levels of approval – strong approval (three fingers) and weak approval (two fingers). This enabled room for the Council to improve any given recommendation when a member indicates a two finger approval to see if there was a path for moving them to a three finger approval. Therefore, a ‘consensus’ for a recommendation involved all members voting with two or three fingers. ‘Non-consensus’ for a recommendation involved at least one member voting with one finger.

The following recommendations reflect ‘consensus’ or ‘non-consensus’ and include the vote tally in the format of (For – Against – Abstain). Specifics about each vote may be found in the Appendix of this Report.

## Recommendation to Implement Now

**The work of advancing the charge of this Council requires multiple strategic public policy interventions over time. As such, there is a need for a supported, centralized entity to facilitate data collection, assessment, creating a materials marketplace, and providing technical assistance to create and sustain momentum for the circular economy and pollution prevention transition.**

### **Consensus**

Invest in state level capacity at DEQ, ideally a dedicated team, to focus on recycling, litter, and circular economy systems that supports and sustains data collection, materials marketplaces, and other technical assistance. **(5 – 0 – 2)**

*The Council feels this is a key enabling recommendation that could have cascading benefits to the Commonwealth and its communities while addressing plastic pollution and growing circular economies.*

## Additional Recommendations for the Immediate Term

We present the following recommendations based upon consensus or non-consensus and labeled by the different stages of the plastic life cycle system shown in Figure 1. *Note that the recommendations*

that follow are just a few of many possible recommendations that will appear in the more comprehensive Road Map. These recommendations here are those for which we had time to discuss and vote on prior to the deadline for this Annual Report. See appendix for voting details.

### Consensus

- Plastic Production and Consumption: Opt-in single-use food service plastics (e.g., straws, sachets): Require dining customers to request plastic straws and utensils instead of automatically providing them to all. **(5 – 0 – 2)**
- Recycling Processing: Promote entrepreneurial recycling business development to fill in geographic recycling access gaps by providing technical assistance and financial incentives. **(5 – 0 – 2)**

### Non-Consensus

- Plastic Production and Consumption: Shift the timeline for banning polystyrene in food service to the original timeline for the large food vendors. **(4 – 1 – 2)**
- Plastic Collection and Sorting: Require local governments to provide recycling system access for residents and businesses and to produce regular reports on #1 and #2 plastics collected. **(4 – 1 – 2)**
- Plastic Collection and Sorting: Pair this mandate with grants available to fund consumer education outreach at the local level regarding the collections aspect of recycling as well as the capital investments needed for collection equipment. **(4 – 1 – 2)**
- Recycling Processing: Financial incentives for collection and recycling system equipment (which can go to either government or private sector). Specifically, grants and/or subsidies for MRF technologies for sorting and screening. **(4 – 1 – 2)**

Recommendations regarding the Mismanaged Waste and Disposal stages of the plastic material flow system will be discussed during the Spring 2023 meetings.

Council Membership

<b>Name</b>	<b>Association</b>	<b>Membership</b>	<b>Designee</b>	<b>Position</b>
Delegate Lee Ware	House Committee on Ag, Ches, NR	Legislative		
Senator Chapman Petersen	Senate Committee on AG, Cons, NR	Legislative	Kathy Neilson, Chief of Staff	
Dr. Rob Alexander	James Madison University	Citizen	NA	Chair
Jennifer E. Cole	Clean Fairfax	Citizen	NA	
Anne Johnson	Resource Recycling Systems, Inc.	Citizen	NA	
Dr. Jennifer Russell	Virginia Tech	Citizen	NA	
Director Mike Rolband	Department of Environmental Quality	Ex-Officio	Sharon Baxter, DEQ	
Colin Greene	State Health Commissioner	Ex-Officio	Joseph Hilbert, VDH	
Keith Martin	Virginia Chamber of Commerce	Ex-Officio	Morgan Guthridge, Lindl Corp	Vice Chair
Brett Vassey	Virginia Manufacturers Association	Ex-Officio	Paige Wernig, VMA	

**DEQ Staff Contacts**

Meghann Quinn	Manager, Office of Pollution Prevention
Morgan Goodman	Pollution Prevention Specialist, Council FOIA Officer
Keith Boisvert	Pollution Prevention Specialist
Brook Keltner	Pollution Prevention Specialist



# APPENDIX

## Voting Details for Recommendations

Recommendations were voted on by the Council during the September 29, 2022 meeting. Details on each vote is below. Council members indicated support on a scale of 1 to 3 as described below:

1. One finger indicating that you absolutely do not support the recommendation
2. Two fingers indicating that you slightly support/ are not greatly opposed to the recommendation
3. Three fingers indicating that you support the recommendation

Votes of two or three fingers are 'votes for' while votes of one finger are 'votes against'. Voting totals are in the format of (for – against – abstain).

### Consensus

- Invest in state level capacity at DEQ, ideally a dedicated team, to focus on recycling, litter, and circular economy systems that supports and sustains data collection, materials marketplaces, and other technical assistance. **(5 – 0 – 2)**

Council Member	Support Level
Chair Alexander	3
Ms. Baxter	Abstain
Ms. Cole	3
Mr. Guthridge	3
Dr. Russell	3
Ms. Wernig	3
Mr. Hilbert	Abstain

Absent: Ms. Johnson, Del. Ware, Ms. Neilson

- Plastic Production and Consumption: Opt-in single-use food service plastics (e.g., straws, sachets): Require dining customers to request plastic straws and utensils instead of automatically providing them to all. **(5 – 0 – 2)**

Council Member	Support Level
Chair Alexander	3
Ms. Baxter	Abstain
Ms. Cole	3
Mr. Guthridge	2
Dr. Russell	3
Ms. Wernig	2
Mr. Hilbert	Abstain

Absent: Ms. Johnson, Del. Ware, Ms. Neilson

- Recycling Processing: Promote entrepreneurial recycling business development to fill in geographic recycling access gaps by providing technical assistance and financial incentives. **(5 – 0 – 2)**

Council Member	Support Level
----------------	---------------

Chair Alexander	3
Ms. Baxter	Abstain
Ms. Cole	2
Mr. Guthridge	3
Dr. Russell	3
Ms. Wernig	3
Mr. Hilbert	Abstain

Absent: Ms. Johnson, Del. Ware, Ms. Neilson

**Non-Consensus**

- *Plastic Production and Consumption*: Shift the timeline for banning polystyrene in food service to the original timeline for the large food vendors. **(4 – 1 – 2)**

Council Member	Support Level
Chair Alexander	2
Ms. Baxter	Abstain
Ms. Cole	3
Mr. Guthridge	2
Dr. Russell	3
Ms. Wernig	1
Mr. Hilbert	Abstain

Absent: Ms. Johnson, Del. Ware, Ms. Neilson

- The 3 recommendations below were voted on as a package:
  - *Plastic Collection and Sorting*: Require local governments to provide recycling system access for residents and businesses and to produce regular reports on #1 and #2 plastics collected. **(4 – 1 – 2)**
  - *Plastic Collection and Sorting*: Pair this mandate with grants available to fund consumer education outreach at the local level regarding the collections aspect of recycling as well as the capital investments needed for collection equipment. **(4 – 1 – 2)**
  - *Recycling Processing*: Financial incentives for collection and recycling system equipment (which can go to either government or private sector). Specifically, grants and/or subsidies for MRF technologies for sorting and screening. **(4 – 1 – 2)**

Council Member	Support Level
Chair Alexander	3
Ms. Baxter	Abstain
Ms. Cole	1
Mr. Guthridge	3
Dr. Russell	3
Ms. Wernig	3
Mr. Hilbert	Abstain

Absent: Ms. Johnson, Del. Ware, Ms. Neilson

Voting Details for this 2022 PWPAC Annual Report

This report was voted on and approved by the Council during the December 9, 2022, meeting. Details on the vote is below. Council members indicated support on a scale of 1 to 3 as described above. Note that the Council Members in attendance differed from the September 29, 2022, meeting.

<b>Council Member</b>	<b>Support Level</b>
Chair Alexander	3
Ms. Baxter	Abstain
Ms. Johnson	3
Mr. Guthridge	3
Dr. Russell	3
Ms. Wernig	3

Absent: Ms. Cole, Mr. Hilbert, Del. Ware, Ms. Neilson